Word, Phrase, and Clitic Prosody in Bosnian, Serbian, and Croatian

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WORD, PHRASE, AND CLITIC PROSODY IN
BOSNIAN, SERBIAN, AND CROATIAN

A Dissertation Presented

by

ADAM WERLE

Submitted to the Graduate School of the
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February 2009

Linguistics
WORD, PHRASE, AND CLITIC PROSODY IN BOSNIAN, SERBIAN, AND CROATIAN

A Dissertation Presented

by

ADAM WERLE

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Thank you all, and best wishes.

Seattle, 2009
ABSTRACT

WORD, PHRASE, AND CLITIC PROSODY IN
BOSNIAN, SERBIAN, AND CROATIAN

FEBRUARY 2009

ADAM WERLE, B.A., UNIVERSITY OF WASHINGTON
Ph.D., UNIVERSITY OF MASSACHUSETTS AMHERST

Directed by: Professor Elisabeth Selkirk

I investigate the phonology of prosodic clitics—dependent syntactic words not parsed as independent prosodic words—in Bosnian, Serbian, and Croatian. I ask, first, how clitics are organized into prosodic structures, and second, how this is determined by the grammar. Following Zec (1997, 2005), I look at several clitic categories, including negation, prepositions, complementizers, conjunctions, and second-position clitics.

Based on a reanalysis of word accent (Browne and McCawley 1965, Inkelas and Zec 1988, Zec 1999), I argue that in some cases where a preposition, complementizer, or conjunction fails to realize accent determined by a following word, it is not a proclitic—that is, prosodified with the following word—but rather a free clitic parsed directly by a phonological phrase.

Conversely, the second-position clitics are not always enclitic—that is, prosodified with a preceding word—but are sometimes free. Their second-position word order results not from enclisis, but from the avoidance of free clitics at phrase edges, where they would interfere with the alignment of phonological phrases to prosodic words.
Regarding the determination of clisis by the grammar, I argue for an *interface constraint approach* (Selkirk 1995, Truckenbrodt 1995), whereby prosodic structures are built according to general constraints on their well-formedness, and on their interface to syntactic structures. I contrast this with the *subcategorization approach*, which sees clisis as specified for each clitic (Klavans 1982, Radanović-Kocić 1988, Zec and Inkelas 1990).

The comparison across clitic categories provides key support for the interface constraint approach, showing that their prosody depends on their syntactic configurations and phonological shapes, rather than on arbitrary subcategorizations. Prosodic differences across categories are a derivative effect of their configuration in the clause, and of the division of the clause into phonological phrases.

The relevance of phonological phrases consists in how their edges discourage some kinds of clisis, blocking, for example, proclisis of complementizers and conjunctions to their complements. Free clisis is disfavored at phrase edges, producing the second-position effect. Thus, the interface constraint approach leads to a unified account of word, phrase, and clitic prosody.
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<td>favors a winning candidate</td>
</tr>
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intonational phrase or utterance edges
brackets designating an underlying representation or an alternative PC placement
pausal punctuation, or some unspecified prosodic break
absence of pausal punctuation
became historically more harmonic than the winner, the output
is supposed to win word stress
short falling accent
long falling accent
short rising accent
long rising accent
neo-acute accent
alters with
CHAPTER 1
INTRODUCTION

1.1 Some puzzles in prosodic clisis

In this dissertation I investigate the phonology of prosodic clitics in Bosnian, Serbian, and Croatian (BCS). By ‘prosodic clitics’, I mean independent syntactic words that aren’t prosodified as independent prosodic words.

In (1), če is an enclitic—that is, it shares a prosodic word with a preceding host word (a)—while ne and u are proclitics—that is, prosodified with following hosts (b):

(1) Some prosodic clitics

a. (Bȉt če) mjȅsećinȅ //
   be FUT moonlight //
   It will be a moonlit night // (Meyer and Stojićević 1927:73)

b. // (nȅ šaljȅ) me mȁti (ù škȍlu).
   // not sends me Mother to school
   // Mother doesn’t send me to school. (Meyer and Stojićević 1927:43)

These examples also illustrate some of the unique properties of enclitics and proclitics in BCS. Enclitics are consistently found in some ‘second’ or peninitial position in their clause. Proclitics are sometimes endowed with accent determined by their host. Here, I investigate the sources of these and other clitic properties.

The study addresses two broad questions, one more empirical, and the other more theoretical. First, how are clitics parsed by surface prosodic structures? Second, how are these structures determined by the grammar?

---

1 In these and other examples, parentheses indicate prosodic word edges, and double slashes (//) indicate pausal punctuation in the source. See 1.3, 1.4, 4.2.
Departing from most previous studies, which focus on subsets of the clitics, I follow Zec (1997, 2005) in looking at several categories, including negation, prepositions, complementizers, conjunctions, and peninitial clitics. The framework is Prosodic Clitic Theory (Selkirk 1995a, 2005, Truckenbrodt 1995, 1999), an Optimality Theoretic implementation of Prosodic Phonology that incorporates end-based determination of prosodic constituents (Selkirk 1986), and non-strict layering.


Regarding clitics’ phonological representations, I conclude that many words that are considered to be enclitic or proclitic are, in fact, free clitics parsed directly by phonological phrases (Selkirk 1995a). Accordingly, accounting for the full range of clisis patterns requires a model of both word and phrasal prosody in the language.

Perhaps the most unexpected finding in this vein is that the peninitial clitics aren’t necessarily enclitic, as is commonly thought, but are typically free. Concomitantly, I argue that their peninitial word order results not from a requirement that they be enclitic, but from the avoidance of free clitics at phonological phrase edges, where they would interfere with the alignment of phonological phrases to prosodic words.

Other accounts of clisis in BCS take an interface constraint approach, according to which clisis results from general constraints on prosodic structures, and on their interface to syntactic structures. Interface constraints don’t refer to clitics as such, but rather to the general distinction between lexical and functional categories, of which only the latter are typically clitic (Selkirk 1995a, Schütze 1997, Werle 2004).

I argue that patterns in clitic prosody support the interface constraint approach over the subcategorization approach. Key to this point is the comparison across clitic categories, which demonstrates that their parsing depends on their syntactic configurations and phonological shapes, as interpreted by interface constraints, rather than on arbitrary subcategorizations.

The relevance of phonological phrases consists in how their edges make certain kinds of clisis uncommon or impossible. For example, phonological phrase edges block clisis across them, with the result that words that are syntactically more peripheral in the clause, like complementizers and conjunctions, are less likely to be proclitic or enclitic, and more likely to be free. Free clisis, moreover, is disfavored at phrase edges, producing the distribution of the peninitial clitics. Thus, the interface constraint approach to prosodic clisis leads to a unified account of word, phrase, and clitic prosody.
The account also has consequences for the general theory of the syntax-prosody interface. To begin with, the analysis requires interface constraints that are sensitive to the distinctions between lexical and functional categories (Selkirk 1984), and between heads and their extended projections (Grimshaw 1991).

On the other hand, the account supports claims that interface constraints make no reference to particular syntactic categories, nor to features specific to clitics (Selkirk and Shen 1990). I show that prosodic differences across clitics based on their syntactic category are a derivative effect of the configurations of different syntactic categories in the clause, and of the division of the clause into phonological phrases.

The dissertation is organized as follows. In the rest of chapter 1, I provide an overview of the Bosnian, Serbian, and Croatian language (1.2), the theoretical framework of the dissertation (1.3), and the data sources used in the study (1.4).

Chapters 2 and 3 are devoted to an analysis of word accent and its interaction with prosodic words, feet, syllables, and moras. This provides valuable diagnostics for the identification of clitics’ prosodic representations in later chapters.

I then proceed to the core analysis of prosodic clisis. Chapters 4 and 5 investigate the evidence for the prosodic representations of the conventional proclitics and enclitics, respectively. Concurrently with this investigation, I develop and defend an account of clitic parsing in terms of interface and prosodic constraints.

Chapter 6 summarizes the conclusions of the dissertation. Its contribution is a clearer understanding of word, phrase, and clitic prosody in BCS, and of the role of the grammar in these phenomena, than in previous work on the language.
1.2 The Bosnian, Serbian, and Croatian language

1.2.1 Introduction

This section supplies some background on BCS. I’ll summarize its segment inventory, grammatical typology, status as a language, and some broad features that distinguish dialects and standards. This information will aid the reader in understanding examples, the value and significance of cross-dialectal comparisons, and some important issues of language names and identity.

1.2.2 Segments, alphabets, and orthography

The BCS orthography is very phonetic, in the sense that letters correspond to phonemes reliably, and nearly one-to-one. The two standard alphabets, Latin and Cyrillic, therefore serve also as lists of the language’s distinctive segments.²

These are the lowercase Latin and Cyrillic variants of each letter, in the Latin order, and its approximate equivalent in the International Phonetic Alphabet (IPA):

(2) The standard alphabets

| Latin: | a b c č ñ d đ dž đ e f g h i |
| Cyrillic: | а б ц ч ћ д џ дз đ е ф г х и |
| IPA: | a b ts ʧ ʧʲ d ʤ ʤʲ e f g х i |

j k l lj m n nj o r g s š t u v z ž

² A notable exception to phonetic spelling is that many dialects have merged /č/ and /č/, and likewise /dž/ and /d/. Some dialects, especially in Bosnia, have lost etymological /h/ in some or all positions.
The Latin version of the alphabet includes three digraphs—dž, lj, nj—that represent single sounds. In addition to these letters, a palatalized s (Latin /š/, Cyrillic /ć/, IPA [sʰ]) appears in some of the data. I use Latin letters throughout the dissertation.

The orthography is phonetic to the extent that voicing and palatality assimilations are typically indicated by their spelling (assimilating segments are underlined):³

(3) Some voicing and palatality assimilations

<table>
<thead>
<tr>
<th>Slavic</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td>slđak</td>
<td>‘sweet (MASC)’</td>
</tr>
<tr>
<td>slątka</td>
<td>‘sweet (FEM)’</td>
</tr>
<tr>
<td>mozak</td>
<td>‘brain’</td>
</tr>
<tr>
<td>mozgovi</td>
<td>‘brains’</td>
</tr>
<tr>
<td>ućiti</td>
<td>‘study’</td>
</tr>
<tr>
<td>udžbenik</td>
<td>‘textbook’</td>
</tr>
</tbody>
</table>

Unlike in some other Slavic languages, there’s no word-final devoicing in BCS, nor does consonant palatalization interact strongly with vowel frontness.

The five vowels /a e i o u/ can be phonemically short or long. Length is indicated, when relevant, by a macron or breve (e.g. dǔg ‘debt’, dǔg ‘long’) or by an accent diacritic (see 2.2.2). Normally, neither length nor accent is represented orthographically. Vowels have the same quality in both stressed and unstressed syllables.

The consonant /r/, too, can be a syllable nucleus, in which case it’s short or long, and bears accent just as vowels do (e.g. přst ‘finger’, cřv ‘worm’). For this reason, I often refer to ‘nuclear length’, as opposed to ‘vowel length’.

In some respects, the consonant /v/ behaves like a sonorant rather than an obstruent. For example, /v/ neither triggers nor undergoes voicing assimilation, as in tvoj

³ Exceptionally, orthographic d remains before s, š, e.g. brodski ‘naval’, odšteta ‘compensation’ (Browne 1993). Vignjević (2004) observes that in her pronunciation, this reflects an actual failure to devoice /d/.
Chapter 1 – Introduction

‘your’, *ovca* ‘sheep’ (Browne 1993). It also behaves like a sonorant consonant with respect to pre-sonorant lengthening (see 3.3).

1.2.3 Syntax and morphology

The syntactic and morphological properties of BCS aren’t of much importance to the first half of the dissertation, which is concerned with the word-level phonological properties of clitics. In latter chapters, however, these are relevant to the analysis of phonological phrasing, which is based closely on the syntactic structure of the clause, and to the investigation of peninitial clitics, whose word order provides evidence for their prosody. Most of the discussion of these topics is found in chapters 4 and 5.

For the present, however, some general observations on BCS morphology and syntax will help the reader in following examples. The word-level morphology features highly developed case and agreement systems. Nouns, pronouns, and adjectives inflect for two numbers, three genders, and six or seven cases. Verbs express tense, aspect, and the person and number of the subject. These inflections extend to the peninitial clitics, which include pronouns and verbal auxiliaries (see 5.2).

In its clause structure and word order, BCS is head-initial, with unmarked subject-verb-object orders, much like English. On the other hand, BCS also exhibits the fairly free, discourse-determined word order typical of the Slavic languages. Generally, topics and old information come early in the clause, while new and focal elements come later. I say some more about the configuration of the clause in 5.2, in connection with the syntactic representations of the peninitial clitics.
Also like most Slavic languages, BCS has no articles. While some propose that it nevertheless has null determiners (Progovac 1998a), others argue that there’s no DP projection (Zlatić 1997, Bošković 2007). I adopt the latter view, characterizing nominal phrases as NPs rather than as DPs. I won’t say much about the various prenominal deictic and other determiner-like elements in the language, but see 4.2, 5.2 for discussion of their properties as compared to other function words.

1.2.4 Bosnian, Serbian, Croatian, and Montenegrin

Next, I’ll address some questions concerning BCS’s linguistic status: is this one language, what is it called, and is there a standard dialect or dialects? This is in order to give the reader an idea of what BCS is, and of the issues involved in weighing data from different sources, including archaic and nonstandard ones.

Regarding the status of languages and dialects, we may first situate BCS within the South Slavic languages. These comprise a continuum of dialects spoken between the Adriatic and Black Seas, whose literary languages are known in English as Slovenian, Serbo-Croatian or Serbo-Croat, Macedonian, and Bulgarian. This study is concerned with what’s commonly called Serbo-Croatian, especially its modern standard varieties, though I’ll also draw some data from older sources and from nonstandard dialects.

By the criterion of mutual intelligibility, the BCS literary standards, at least, are one language. Claims to the contrary are based on politics, identity, or small differences in grammar and vocabulary (Kordić 1997, Friedman 1999, Greenberg 2004). Smiljanić (2004:17), for example, describes the difference between the Belgrade and Zagreb standards as on the order of that between British and American English.
However, there’s no universal agreement on what to call the language. The name ‘Serbo-Croatian’ \((\text{srpskohrvatski jezik or hrvatskosrpski jezik})\) has its origin in the historical standardization of the literary language (see below), and excludes other regions and ethnicities associated with the language, such as Montenegrins and Bosniacs.\(^4\)

Since 2006, there are four independent countries where varieties of BCS are the dominant language: Croatia, Serbia, Bosnia and Herzegovina, and Montenegro. Official and government usage in each country is that it has its own language, respectively Croatian \((\text{hrvatski})\), Serbian \((\text{srpski})\), Bosnian \((\text{bosanski})\) and Montenegrin \((\text{crnogorski})\). However, these names may also be taken to designate particular ethnic groups rather than—or in addition to—national boundaries. The details and politics of mutual recognition among nations and ethnicities are equally complex.

I say ‘Bosnian, Serbian, and Croatian’ (or BCS) for the following reasons. First, separate language names by country appears to be the emerging practice, and is legitimized by government usage. Second, I focus on the literary standards, and the speech of educated natives, of Sarajevo, Belgrade, and Zagreb, the political and urban centers of Bosnia, Serbia, and Croatia. Montenegrin data weren’t included, mainly because Montenegro wasn’t yet independent when I began this study.

Last, the abbreviation BCS has recently been gaining international currency, while the unabbreviated description *Bosnian, Serbian, and Croatian* is the one that sounds least awkward to me out of the possible orderings of these names.\(^5\)

---

\(^4\) The term *Bosniac* \((\text{bošnjak})\), which generally refers to BCS-speaking Muslims, is not be confused with *Bosnian* \((\text{bosanski})\), which describes people or things from Bosnia (Greenberg 2004:140-141).

\(^5\) In previous work (Werle 2004), I used the name ‘Bosnian/Serbian/Croatian’, following some other scholars in using slashes instead of hyphens in order to give each name equal weight (Progovac 1994, Haspelmath 1997, Franks and King 2000: ‘Serbian/Croatian’; Caink 1999: ‘Serbian/Croatian/Bosnian’). Now, the abbreviation BCS seems preferable to an increasingly unwieldy compound name.
1.2.5 *Dialects and standards*

Is there a standard dialect or dialects of BCS? Although there’s no single codified standard, the literary language represents a de facto standard that’s roughly the same across BCS-speaking communities. Some background on the literary standard will help in understanding and assessing some of the phenomena that concern the dissertation, especially the limitations of word accent as a diagnostic for clisis.

A popular dialect classification, in common use among both linguists and laypeople, divides dialects into the Štokavian (*štokavski*), Kajkavian (*kajkavski*), and Čakavian (*čakavski*) groups. These names are based on different words for ‘what’—*što*, *kaj*, and *ča*—but also represent clusters of properties that distinguish these dialect groups from each other (Ivić 1958). Of the three, Štokavian is the most widespread, and includes the vernaculars of Sarajevo and Belgrade. The Zagreb vernacular is Kajkavian, though its literary standard is Štokavian (see below).

Standard Štokavian varieties, moreover, belong to a subgroup known as Neo-Štokavian (*novoštokavski*), which is defined by having undergone the Neo-Štokavian accent shift (see 2.2.5). The accentual systems whose properties provide much of the evidence for prosodic clisis in this study are Neo-Štokavian.

In the early 1800s, the linguist and folklorist Vuk Karadžić, and later his student Đuro Daničić, promulgated a standard grammar and orthography based on Štokavian varieties of western Serbia and eastern Herzegovina, Vuk’s homeland. Versions of this ‘Vukovian’ standard gained acceptance first in Serbia, then in Croatia during the latter
1800s, resulting today in a single, though heterogeneous, written standard across the BCS-speaking area (Browne 1993, Kordić 1997, Greenberg 2004).

Since the breakup in the 1990s of the twentieth-century state of Yugoslavia, the politics of linguistic standardization and identity have tended more toward fragmentation than toward unity. Nevertheless, the literary standards remain quite similar.

In spite of standardization, one finds regional differences in pronunciation, spelling, vocabulary, and grammar that are mostly irrelevant to this dissertation, but which make some of the data presented here markedly regional. For example:

- A point of variation in pronunciation, represented orthographically, is that some je and ije sequences in so-called ‘ijekavian’ varieties correspond to e and ē in ‘ekavian’, e.g. ijekavian vjera, svijet versus ekavian vera, svēt ‘faith, world’.

- Another spelling difference is due to a process that I call future sandhi, whereby an infinitival verb loses its final /-tī/ when followed by a future auxiliary clitic. For example, imati plus če is alternately spelled imat če or imače ‘will have’. These different spellings don’t reflect differences in pronunciation (see 5.3.4).

- A point of grammatical variation is that in contexts where some varieties use infinitival verbs, others use a finite verb introduced by the complementizer da, e.g. mora krenuti, mora da krene ‘must start’. Therefore, evidence drawn from infinitival constructions isn’t so representative of some varieties (see 5.3.4, 5.5.6).

Variation in accentual systems, on the other hand, is highly significant, because of the importance of accentual evidence for the investigation of prosodic clisis. For this
reason, the properties and analysis of word accent, especially of the influential Vukovian standard, are central topics of chapters 2 and 3.

The following table summarizes some important dialectal and usage differences as they’re represented in speech and writing in Zagreb, Sarajevo, and Belgrade:

(4) Some regional differences in dialectal features and usage

<table>
<thead>
<tr>
<th></th>
<th>Zagreb</th>
<th>Sarajevo</th>
<th>Belgrade</th>
</tr>
</thead>
<tbody>
<tr>
<td>standard</td>
<td>Štokavian</td>
<td>Štokavian</td>
<td>Štokavian</td>
</tr>
<tr>
<td>vernacular</td>
<td>Kajkavian</td>
<td>Štokavian</td>
<td>Štokavian</td>
</tr>
<tr>
<td>‘word’</td>
<td>riječ</td>
<td>riječ</td>
<td>reč</td>
</tr>
<tr>
<td>‘will be’</td>
<td>bit će</td>
<td>bit će, biće</td>
<td>biće</td>
</tr>
<tr>
<td>‘can live’</td>
<td>može živjeti</td>
<td>može živjeti</td>
<td>može da živi, može živeti</td>
</tr>
</tbody>
</table>

1.2.6 Summary

In this brief overview of the BCS language, I discussed some salient aspects of its grammar and written language, and some of the details and issues related to dialects and standards. I follow most international scholarship in assuming BCS to be one language, though with several standards, and many dialects. Differences among standards are mostly irrelevant to the dissertation, except for variation in accent, which is an important topic in subsequent chapters.

---

6 These regional differences were checked with the questionnaire and the J corpus (see 1.4). Regarding alternations between infinitival and da clauses, for example, these indicated that, in Belgrade, da clauses are preferred colloquially (on the questionnaire), but are used about equally with infinitives in writing (in the J corpus). See 5.3.4 for more on future sandhi—that is, the pattern exemplified by bit će, biće.
1.3 The theoretical framework

1.3.1 Introduction

The analysis of clitic prosody to be presented here has both empirical and theoretical goals. The empirical goal is to accurately describe the parsing of clitics in BCS. The theoretical goal is to construct an account of these phenomena that relies on as few, accurate, and restrictive formal generalizations as possible.

In this section, I’ll clarify the theoretical framework of the study, which is essentially that of classical Prosodic Phonology, with some additional principles from Prosodic Clitic Theory. The eventual analysis maintains most aspects of these theories, but abandoned others in response to the empirical findings.

Another purpose served by Prosodic Clitic Theory is to delineate the set of potential function word parses that will guide the investigation of clitic prosody. A key aspect of this framework is that it admits prosodic structures that violate Strict Layering, allowing for clitic representations other than traditional enclisis and proclisis.

1.3.2 A definition of clitic

The term clitic is problematic, having no fixed definition, and tending to bring with it a number of unwanted connotations. I’ll therefore say something about what clitic can mean, and how I intend to use it.

Generally speaking, clitic is applied to various linguistic elements with properties that are somehow intermediate between those of words and affixes. However, there are several ways that an element can be intermediate in this sense, depending in particular on whether one is most interested in clitics’ prosodic or syntactic properties. The definitions of syntactic and prosodic words depend, in turn, on one’s particular framework.
In the generative linguistic literature, a common use of the term *clitic* is to refer to functional elements with unique word order, especially the verb-adjacent pronominal clitics in Romance languages, and second-position clitics (e.g. Kayne 1975, Klavans 1982, Franks and King 2000, papers in Borer 1986, Halpern and Zwicky 1996, van Riemsdijk 1999, Beukema and den Dikken 2000, Gerlach and Grijzenhout 2000).

In an influential series of papers, Zwicky and Pullum seek to bring some order to the confusion over *clitic* by offering specific diagnostics that set clitics apart from words and affixes (Zwicky 1977, 1985, Zwicky and Pullum 1983). Their aim, however, isn’t so much to attach theoretical significance to *clitic* as to make the term useful.

Some works go as far as to define clitics in terms of a formal feature or property, which I’ve called the *subcategoryization approach* (see 1.1). For example, Klavans (1982) and Nespor and Vogel (1986) distinguish clitics from non-clitics at underlying levels by the feature [+clitic]. As another example, Berendsen (1986) and Radanović-Kocić (1988) derive surface clisis ultimately from underlying stresslessness.

In other subcategorization accounts, clitics are defined by *subcategoryization frames* that specify their prosodic context. For example, enclitics and proclitics have underlying templates that specify that they attach to preceding and following prosodic words, respectively (Inkelas 1989, Zec and Inkelas 1990, 1991, Zec 1997, 2005):

(5) Subcategorization frames for prosodic clitics

- enclitics: \[ \begin{array}{c} ]_w \text{ } \_ \text{ } ]_w \end{array} \]
- proclitics: \[ \_ \text{ } [ \_ \text{ } ]_w \]
The opposite approach to identifying formal properties of clitics is the idea that there is no class of clitics at the underlying level. Rather, clitics’ surface properties derive in a general way from principles that turn morphosyntactic representations into phonological ones (Selkirk 1995a, Harley and Noyer 1999, Everett 2000). Under this view, the term *clitic* is used only for descriptive convenience.

Although I’ll argue in favor of a view most like this last one, I begin the inquiry into clisis with a definition of *clitic* that depends as much as possible on clitics’ surface properties, avoiding reference to any underlying properties they might have:

(6) A definition of *prosodic clitic*

prosodic clitic: an independent syntactic word (a terminal X°) that isn’t parsed as an independent prosodic word.

This is what I will mean in this study when I say ‘clitic’.

Naturally, this definition depends on particular notions of syntactic and prosodic words. For syntactic words, I adopt the X-bar notion of a terminal X°—that is, a syntactic head. As for the definition of prosodic word to be used here, this is made clear shortly, in the following discussion of Prosodic Phonology.

### 1.3.3 Prosodic Phonology

The prosodic framework to be used in this study is an adaptation of what may be called classical Prosodic Phonology (Selkirk 1978, 1981, 1984, 1986, Nespor and Vogel 1982, 1983, 1986, Hayes 1984, 1989). I’ll briefly describe here what I see as the important elements of the classical theory, though as we’ll see, the actual framework of the dissertation departs somewhat from this model.
The Prosodic Phonology framework rests on at least four general premises:

- The *Indirect Reference Hypothesis*: the domains of phonological phenomena are delimited by phonological representations, not syntactic representations.
- Phonological representations are organized into prosodic structures.
- Prosodic structures are based on, but not isomorphic to, syntactic structures.
- Prosodic structures are built from a *Prosodic Hierarchy* of constituent types, and are combined according to principles of *Strict Layering*.

The motivation for distinct prosodic and syntactic structures consists in phonological phenomena that take effect within domains that may be partly syntactically determined, but which don’t necessarily correspond to any syntactically definable constituent. Some such phenomena are French liaison (Selkirk 1978), Italian raddoppiamento sintattico (Nespor and Vogel 1982), and Xiamen tone sandhi (Chen 1987). Nespor and Vogel (1986) undertake a comprehensive study of such phenomena, presenting cross-linguistic evidence for every constituent type of the Prosodic Hierarchy.

For the purposes of the present study, I’ll assume that the Prosodic Hierarchy consists of the constituent types listed in (7). I also indicate here the abbreviations that I’ll use for those constituents to which frequent reference is required, and the particular bracketing symbols that I use for each:
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The Prosodic Hierarchy

<table>
<thead>
<tr>
<th>constituent</th>
<th>abbreviations</th>
<th>brackets</th>
</tr>
</thead>
<tbody>
<tr>
<td>utterance</td>
<td></td>
<td># #</td>
</tr>
<tr>
<td>intonational phrase</td>
<td>I, I-phrase</td>
<td># #</td>
</tr>
<tr>
<td>phonological phrase</td>
<td>P, P-phrase</td>
<td>{ }</td>
</tr>
<tr>
<td>prosodic word</td>
<td>w, p-word</td>
<td>( )</td>
</tr>
<tr>
<td>foot</td>
<td>ft</td>
<td>( )</td>
</tr>
<tr>
<td>syllable</td>
<td>s</td>
<td>. .</td>
</tr>
<tr>
<td>mora</td>
<td>m</td>
<td></td>
</tr>
</tbody>
</table>

I omit some proposed constituents. One is the *clitic group*, which is posited as intermediate between p-word and P-phrase, its function being to group clitics with p-words (Hayes 1984, Nespor and Vogel 1986, Nespor 1999). However, I follow others in seeking descriptions of clitic structures in terms of elements not specific to clitics (Berendse 1986, Zec and Inkelas 1991, Zec 1993, Selkirk 1995a, see below).

Another omission in (7) is a proposed division of P-phrases into *major phrase* and *minor phrase* (Selkirk and Tateishi 1988). In his analysis of word accent in BCS, Becker (2006) analyzes the domain of accent as the minor phrase. However, I don’t find that this is required in BCS, either for accent, or for any other phenomenon (see 2.4, chapter 3). Indeed, the evidence is scarce enough for any kind of P-phrases at all (see 4.6, 5.5).

Prosodic constituents in the classical theory are organized by *Strict Layering*. In concise terms, Strict Layering requires that a constituent of level $p$ on the Prosodic Hierarchy be parsed exhaustively into constituents of level $p-1$. For example, an utterance dominates only I-phrases, which dominate only P-phrases, and so on:

---

7 Beckman and Pierrehumbert’s (1986) *intermediate phrase* and *accentual phrase*, proposed for Japanese, are analogous to I-phrase and P-phrase, respectively.
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A schematization of Strict Layering

(8) A schematization of Strict Layering

\[
\begin{array}{|c|c|}
\hline
\text{utterances} & \# \\
\text{intonational phrases} & \# \\
\text{phonological phrases} & \{ x \} \\
\text{prosodic words} & ( x ) \\
\text{feet} & \langle x \rangle \\
\text{syllables} & .s.s. \\
\hline
\end{array}
\]

However, we will see that there are reasons to think that not all prosodic structures respect Strict Layering.

Another important aspect of prosodic structures is their role in the organization of phonological prominence. The idea is that every constituent has exactly one head, which is the most prominent of its sub-constituents, and that every head is aligned to all the heads beneath it (Halle and Vergnaud 1987, Hayes 1995, Selkirk 2002).⁸

I’ll portray hierarchical prominence by the bracketed grid (Prince 1983, Selkirk 1984, Hammond 1984, Halle and Vergnaud 1987). This is an arrangement of bracketed xes in which every x marks the unique head of a prosodic constituent, and the highest prominence in the grid is an x at the top of an unbroken column of xes:

(9) A representation of prominence by a metrical grid⁹

\[
\begin{array}{|c|c|}
\hline
\text{utterances} & x \\
\text{intonational phrases} & x \\
\text{phonological phrases} & \{ x \} \\
\text{prosodic words} & ( x ) \\
\text{feet and syllables} & \langle .Mř.tav.\rangle \langle .jù.nāk.\rangle \langle .vi.ďi.\rangle \langle .čù.jē.\rangle \\
\hline
\end{array}
\]

‘The dead hero sees and hears.’ (Meyer and Stojićević 1927:111)

⁸ See Selkirk (2002:311) for an explicit definition of prosodic head.

⁹ In this diagram, I assume my eventual analyses of footing (though I don’t explicitly indicate unsyllabified moras; see 3.3.2), conjunction parsing (4.5.6), and phonological phrasing (4.6, 5.5).
In this example, the head of the utterance is an I-phrase that happens to be co-extensive with the utterance. This I-phrase, in turn, is headed by the P-phrase čuże, whose head is the p-word čuje, whose head is the foot čuje, whose head is the syllable ču, whose head is a mora that isn’t represented here.

The above representation also illustrates the way that I use the term parse, in the sense that a constituent parses the phonological material below it. For example, utterance parses I-phrase, which parses P-phrase, which parses p-word, and so on.

As for the mapping from syntactic to prosodic structures, there are several proposals for how this happens, including the mapping algorithms of Nespor and Vogel (1982, 1986), Selkirk’s (1986) end-based theory, and relation-based mapping (Zec and Inkelas 1990). For an overview, see Inkelas and Zec (1995). For present purposes, I’ll adopt the mapping constraints of Prosodic Clitic Theory, to which I turn next.

1.3.4 Prosodic Clitic Theory

I’ll adopt a version of Prosodic Phonology that’s based on several further hypotheses articulated in Selkirk (1995a, 1996, 2005) and Truckenbrodt (1995, 1999). Following some other scholars (Basri et al. 1998, Parker 1999), I’ll call this version of the classical framework Prosodic Clitic Theory (PCT).

The distinguishing premises of PCT are non-strict layering, an explicit set of syntax-prosody correspondences, and an implementation of prosodic structure-building by Optimality Theoretic constraints. Really, PCT is a theory not just of clitic prosody, but of prosodic structure-building at all levels from the mora to the utterance. However, the name conveys that the framework is largely inspired by clitic phenomena.
Selkirk (1995a) proposes to revise Strict Layering by decomposing it into four separate principles, two of which aren’t absolute. By this revision, prosodic structures must obey the requirements of *Headedness* and *Layeredness*, but can sometimes violate those of *Nonrecursivity* and *Exhaustivity*:

(10) A decomposition of Strict Layering

<table>
<thead>
<tr>
<th>principle</th>
<th>violability</th>
<th>definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headedness</td>
<td>inviolable</td>
<td>a (constituent of level) $p$ has a head $q = p - 1$</td>
</tr>
<tr>
<td>Layeredness</td>
<td>inviolable</td>
<td>$p$ doesn’t parse $q$, $q &gt; p$</td>
</tr>
<tr>
<td>Nonrecursivity</td>
<td>violable</td>
<td>$p$ doesn’t parse $q$, $q = p$</td>
</tr>
<tr>
<td>Exhaustivity</td>
<td>violable</td>
<td>$p$ doesn’t parse $q$, $q &lt; p - 1$</td>
</tr>
</tbody>
</table>

For example, a p-word can parse another p-word, in violation of Nonrecursivity, or a P-phrase can parse a syllable, violating Exhaustivity.

Another goal of PCT is an explicit and restrictive set of correspondences between syntactic and prosodic structures. Selkirk (2005) proposes to limit these to the following one-way correspondences, labeling them the *Syntactic Grounding Hypothesis*:

(11) The Syntactic Grounding Hypothesis

<table>
<thead>
<tr>
<th>syntactic constituent</th>
<th>prosodic constituent</th>
</tr>
</thead>
<tbody>
<tr>
<td>comma phrase (CmmP)</td>
<td>intonational phrase</td>
</tr>
<tr>
<td>lexical maximal projection (lexP)</td>
<td>major phonological phrase</td>
</tr>
<tr>
<td>branching syntactic constituent</td>
<td>minor phonological phrase</td>
</tr>
<tr>
<td>lexical word (lex)</td>
<td>prosodic word</td>
</tr>
</tbody>
</table>

The definitions in (10) are mine. Selkirk’s original formulations are as follows (1995a:443):

(i) Layeredness: No $C^i$ dominates a $C^j$, $j > i$

Headedness: Any $C^i$ must dominate a $C^{i-1}$ (except if $C^i = \sigma$)

Exhaustivity: No $C^i$ immediately dominates a constituent $C^j$, $j < i - 1$

Nonrecursivity: No $C^i$ dominates $C^j$, $j = i$

The abbreviation *lex* for lexical word (that is, lexical $X^\circ$) is taken from Selkirk (1995a). The abbreviations *lexP* for lexical maximal projection, and *CmmP* for comma phrase, are mine.
In short, prosodic structure-building principles that relate syntactic and prosodic constituents can refer only to these pairs. The formalization of the relating principles themselves, on the other hand, is a separate question, on which more below.\footnote{To these correspondences might be added one between morphemes and syllables. The fact that in some languages, marked syllable boundary phenomena like gemination (\textit{lamppost}) and hiatus (BCS \textit{dvook} ‘tw-o-eyed’) are permitted between morphemes, suggests that morphemes are preferentially aligned to syllables. Walker (2002) proposes a stronger correlation with respect to syllabification in Yuhup: that in that language, it’s preferred that every morpheme correspond to exactly one surface syllable.}

Regarding the grounding of I-phrase, the ‘comma phrase’ of (11) replaces Nespor and Vogel’s identification of I-phrases with a heterogeneous set of constituents that includes root clauses, parentheticals, and non-restrictive relatives:

\ldots there are certain types of constructions that seem to form intonation domains on their own. These constructions include parenthetical expressions, nonrestrictive relative clauses, tag questions, vocatives, expletives, and certain moved elements… they all represent strings that are in some way external to the root sentence they are associated with… it seems that we might be able to account for the set of obligatory I-forming constructions on the grounds that they are all elements that, at the level of s-structure, are linearly represented but not structurally attached to the sentence tree… the other syntactic notion that is relevant for I formation is the root sentence, as defined by Emonds (1976). Specifically, the boundaries of a root sentence delimit an I, while those sentences that are not root sentences do not. (Nespor and Vogel 1986:188-189)

The term \textit{comma phrase} is taken from Potts (2005), who introduces it as a cover term for a similar class of I-phrase-determining constituents, proposing that these have in common a semantically significant feature COMMA, which is responsible both for their semantic interpretation, and for their comma intonation.\footnote{Potts (2005:98): ‘the syntactic feature COMMA… is a signal to isolate the subtree it dominates intonationally, accounting for the commas in print and the intonational boundary marks in speech. Semantically, it performs a type shift: it takes at-issue content to [conventional implicature] content.’}

To be precise, Potts is concerned not with comma phrases in general, but with their intersection with another class of expressions (‘supplements’) that include non-restrictive relatives, parentheticals, and appositives. Therefore, Potts doesn’t claim that all
comma phrases share a uniform syntax or semantics. Nevertheless, Potts’s treatment builds support for a unified class of comma phrases, thereby improving on previous, less unified characterizations of I-phrase correspondents.

The grounding of I-phrase is of relevance in the discussion of the prosodification of the clause. Whereas all work that I’m aware of on the prosody of clauses in BCS claims or assumes that all clauses necessarily determine I-phrases, I claim that the necessary correspondence is rather between clauses and P-phrases (see 4.6).

The Grounding Hypothesis also incorporates the idea that prosodic structures are based only on lexical syntactic constituents, ignoring functional ones (Selkirk and Shen 1990). Truckenbrodt articulates this as the Lexical Category Condition:

(12) The Lexical Category Condition (LCC) (Truckenbrodt 1999:226)
Constraints relating syntactic and prosodic categories apply to lexical syntactic elements and their projections, but not to functional elements and their projections, or to empty syntactic elements and their projections.\(^{14}\)

The analysis of P-phrasing in the present study forces a reconsideration of the Grounding Hypothesis and the LCC. With the aim of accounting for parsing differences across function word categories in part by the pattern of P-phrasing, I propose to revise the Grounding Hypothesis to relate P-phrases not to the maximal projections of lexical heads, but to their extended projections (see 4.6.4).

\(^{14}\) Truckenbrodt words this condition so as to ensure that not only functional categories, but also traces of movement and phrases emptied by movement are ignored by prosodic structure-building.
1.3.5 *Constraints on prosodic structures*

The last premise that distinguishes PCT is its implementation of interface conditions on syntax-prosody correspondences, as well as purely prosodic conditions on the well-formedness of prosodic structures, as Optimality Theoretic (OT) constraints (Prince and Smolensky 1993). That is, these conditions are ranked and violable, and are assumed to comply with whatever parameters define well-formed OT constraints.

In addition to Nonrecursivity (NRC) and Exhaustivity (EXH), the ALIGN and WRAP constraint schemata are proposed, which can be specified to apply to various types of prosodic constituents (p-cats) and syntactic categories (s-cats):

\begin{align*}
\text{(13) OT schemata for Prosodic Clitic Theory constraints} \\
\text{a. NRC}(p): \text{a p-cat of level } p \text{ doesn’t parse a p-cat of level } p. \\
\text{b. EXH}(p,q): \text{a p-cat of level } p \text{ doesn’t parse a p-cat of level } q, q < p - 1. \\
\text{c. WRAP}(s,p): \text{every s-cat of category } s \text{ is contained in some p-cat of level } p. \\
\text{d. ALIGN}(x, L/R, y, L/R): \text{the left/right edge of every constituent of type } x \text{ is aligned to the left/right edge of some constituent of type } y.
\end{align*}

The ALIGN schema for prosodic structure determination (Selkirk 1995a) is essentially a renaming, in terms of Generalized Alignment (McCarthy and Prince 1993b), of the non-Optimality Theoretic end-based theory of prosodic structure determination (Selkirk 1986). The WRAP schema is argued by Truckenbrodt (1995, 1999) to be necessary to account for P-phrase construction in several languages.

While Selkirk (1995a) employs Exhaustivity constraints that subcategorize for the superordinate, or dominating constituent—e.g. EXH(P-phrase)—I find it necessary in the course of the analysis of the BCS clitic system to posit several Exhaustivity constraints that subcategorize for both the superordinate and the subordinate constituent:
Some Exhaustivity constraints

a. EXH(w,s): a prosodic word doesn’t directly parse a syllable.

b. EXH(w,m): a prosodic word doesn’t directly parse a mora.

c. EXH(P,s): a phonological phrase doesn’t directly parse a syllable.

d. EXH(P,m): a phonological phrase doesn’t directly parse a mora.

I’ll also draw on the following symbols for significant syntactic and prosodic constituents when formulating constraints from the schemata in (13):

Syntactic and prosodic constituents available in constraint construction

<table>
<thead>
<tr>
<th>Syntactic constituents:</th>
<th>lex, lexP, comma phrase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prosodic constituents:</td>
<td>mora, syllable, foot, p-word, P-phrase, I-phrase</td>
</tr>
<tr>
<td>Prosodic heads:</td>
<td>Δs, Δft, Δw, ΔP, ΔI</td>
</tr>
<tr>
<td>Prosodic non-heads:</td>
<td>-Δs, -Δft, -Δw, -ΔP, -ΔI</td>
</tr>
</tbody>
</table>

The notation Δp is to be read as ‘the head of p’. For example, ΔI is the P-phrase that’s the head of an I-phrase. ΔP is a p-word, Δw is a foot, and so on. Conversely, -Δw is to be understood as ‘all material parsed by w that is not parsed by w’s head foot’. Two situations where reference to heads and non-heads is necessary are in constraints that make prosodic constituents left- or right-headed (see 2.4.3), and in constraints relating tone to prominence (see 2.4.7; compare de Lacy 1999).15

I take the constraint schemata described here to represent a desirably restrictive space of possible constraints. At several points in the analysis, I cite the restrictiveness of the constraint set as support for accounts that are based on them.

---

15 In de Lacy’s notation, Δp is the ultimate terminal element of p; for example, ΔI is the unique mora that’s connected by an unbroken stack of metrical xes to the highest prominence in an I-phrase. However, I find it necessary to refer to immediate, not ultimate heads. See 2.4.7.
1.3.6 *A typology of function word parses*

The combined assumptions of PCT result in a particular conception of prosodic clisis. To begin with, non-strict layering permits several different prosodic analyses of clitic parsing. Selkirk (1995a) proposes three potential analyses, exemplified in (16) with the phrase *na ulicu* ‘onto street’. By this proposal, a clitic (here, *na*) can share a p-word with a host (‘internal clisis’), be parsed with a host in a recursive p-word (‘affixal clisis’), or be parsed directly by a higher constituent like P-phrase (‘free clisis’):

(16) Three kinds of clisis

<table>
<thead>
<tr>
<th></th>
<th>a. internal clisis</th>
<th>b. affixal clisis</th>
<th>c. free clisis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>{P}</td>
<td>{P}</td>
<td>{P}</td>
</tr>
<tr>
<td></td>
<td>(w)</td>
<td>(w (w))</td>
<td>(w)</td>
</tr>
<tr>
<td></td>
<td><em>nà ulicu</em></td>
<td><em>na ̀ulicu</em></td>
<td><em>na ̀ulicu</em></td>
</tr>
</tbody>
</table>

In terms of PCT’s OT implementation, internal, affixal, and free clisis represent different rankings of constraints on prosodic structures. Internal clisis optimizes prosodic well-formedness, but fails to match the left edge of the lexical word *ulicu* to a p-word edge. Affixal clisis solves this problem, but at the expense of Nonrecursivity. Free clisis optimizes word alignment and Nonrecursivity, but violates Exhaustivity.

Speaking somewhat more abstractly, we can envision at least six potential parses for a sequence of a function word (*fnc*) between two lexical words (*lex*):

(17) Six function word parses

<table>
<thead>
<tr>
<th></th>
<th>a. internal proclisis</th>
<th>b. affixal proclisis</th>
<th>c. free clisis</th>
<th>d. internal enclisis</th>
<th>e. affixal enclisis</th>
<th>f. promotion</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(lex)(<em>fnc</em> lex)</td>
<td>(lex)(<em>fnc</em> lex))</td>
<td>(<em>lex</em> <em>fnc</em>)</td>
<td>(lex) (<em>fnc</em>)</td>
<td>((lex) <em>fnc</em>)</td>
<td>(lex)(<em>fnc</em>)</td>
</tr>
</tbody>
</table>
Of these, (a) through (e) are by definition clisis, because the function word in question doesn’t determine a prosodic word. Parse (f) represents the opposite outcome—which I’ll call promotion—where a function word does determine a prosodic word.

This tableau shows how each of these six parses satisfies some interface or prosodic constraints at the expense of others:

(18) The comparative optimality of six function word parses

<table>
<thead>
<tr>
<th>lex fnc lex</th>
<th>L(lex,w)</th>
<th>L(w,lex)</th>
<th>R(lex,w)</th>
<th>R(w,lex)</th>
<th>NRC(w)</th>
<th>ExH(P,s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. (lex)(fnc lex)</td>
<td>*</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. (lex)(fnc (lex))</td>
<td>*</td>
<td></td>
<td>*</td>
<td></td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>c. (lex fnc)(lex)</td>
<td></td>
<td>*</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. ((lex) fnc)(lex)</td>
<td></td>
<td></td>
<td>*</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. (lex) fnc (lex)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>f. (lex)(fnc)(lex)</td>
<td></td>
<td>*</td>
<td></td>
<td>*</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Importantly, none of these parses is absolutely ruled out, because each does better than all other candidates under at least one ranking of these constraints. Then, by the assumption that any ranking of the constraints provided by Universal Grammar is in principle possible, merely adopting this constraint set has the far-reaching consequence that each of these parses is predicted to be optimal in some language.

The evidence that all of these analyses are possible comes from phenomena that show that clitics and their hosts can exhibit phonological properties associated with the insides, outsides, or edges of p-words. Take, for example, claims that clitics are parsed by P-phrase in Hausa (Inkelas 1989, Zec and Inkelas 1990), and in Chamorro (Chung 2003), and by I-phrase in some Mayan languages (Aissen 1992).

In this connection, we may consider another constraint and another candidate. I omitted the constraint WRAP(lex,w) in (18) because it’s satisfied by every candidate in
the tableau, every lexical word being contained in some p-word. But consider a parse in which one or more lexical words are parsed not by p-word, but by P-phrase (d):

(19) A harmonically bounded lexical word parse

<table>
<thead>
<tr>
<th>a. → (lex)(fnc lex)</th>
<th>L(lex,w)</th>
<th>R(lex,w)</th>
<th>EXH(P,s)</th>
<th>WRAP(lex,w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>b. → (lex fnc)(lex)</td>
<td></td>
<td></td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>c. → (lex) fnc (lex)</td>
<td></td>
<td></td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>d. lex fnc lex</td>
<td>**</td>
<td>**</td>
<td>***</td>
<td>**</td>
</tr>
</tbody>
</table>

This tableau shows that candidate (d) is suboptimal under any ranking of these constraints. It is **harmonically bounded**—that is, it incurs a superset of the violations of every other candidate, and is therefore predicted to be attested in no language—although, naturally, further additions to the constraint set could change this.\(^{16}\)

Tableau (19) shows, moreover, that either EXH(P,s) or WRAP(lex,w) is sufficient to get this particular result. Nevertheless, the system-wide analysis of BCS clitic prosody will show that we need all of these constraints in order to capture the full range of patterns in function word parsing (see 2.4.4, 4.4.6).

Thus, the treatment of clitic prosody in PCT reduces clitic prosody not to any special underlying specifications, but to the fact that clitics are function words whose parsing is subordinated to whatever parses are optimal for lexical words and lexical projections. By replacing Strict Layering with OT constraints, PCT aims to account for the crosslinguistic properties of clitics and their hosts without reference to prosodic structures or principles that are specific to clitics.

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\(^{16}\) I’ve excluded the constraints ALIGN-L(w,lex), ALIGN-R(w,lex), and NRC(w) from tableau (19) because they can be evaluated only when a p-word is present, and are uninformative to the present point.
1.3.7 Summary

In 1.3, I defined the notion of clitic that will guide the study, and presented the framework of Prosodic Clitic Theory in which the investigation and analysis of prosodic clisis will be cast. The distinguishing premises of this framework are non-strict layering, an explicit set of syntax-prosody correspondences, and an OT implementation of prosodic and interface constraints. From these premises, the theory predicts several potential function word parses in addition to traditional enclisis and proclisis, which will guide the investigation of clitic prosody in chapters 4 and 5.

1.4 Data sources

1.4.1 Introduction

The data sources on which this study is based were determined by the kinds of data that were needed, by their availability, and by my decisions about what language varieties to focus on. In this section, I’ll explain why and where I obtained the data.

The phenomena that are investigated in this study involve phonological patterns, particularly word accent, that help to discern different kinds of clisis (see 2.3.5, 4.2.5), and aspects of word order relating to the peninitial clitics (see chapter 5). Many important examples, of course, come from the existing literature on BCS and its clitic system. However, I thought it necessary to seek additional data, for several reasons.

For example, some important patterns, such as alternations between clisis and promotion, receive conflicting accounts in the literature, or are reported by vague or isolated examples (these are noted as they arise throughout the dissertation). Moreover,
the evidence provided by these patterns is often indirect and subtle, and discernible only over many examples. Therefore, I needed large amounts of data from consistent sources in order to be able to make confident claims about these patterns.

Further, some other patterns of crucial value to this study, such as accent transfer to proclitics and host splitting by PCs, are unusual or archaic in modern standard BCS. I therefore sought additional data from older and nonstandard sources where such patterns are better attested.

I answered some of these concerns by collecting written and audio data from native speaker consultants, and others by referring to large textual corpora. Naturally, I also relied on several reference works throughout this study.

1.4.2 Native speaker consultants

In an effort to gain a clearer picture of the modern regional standards, I collected some original data from native speakers through interviews, a questionnaire, and audio recordings. There were seventeen consultants, all born in the period from 1952 to 1985. Of these, fifteen responded to the questionnaire, and ten were recorded.

When recruiting consultants, I sought to represent all three standard varieties under investigation—that is, Bosnian, Serbian, and Croatian—as typified by natives of Sarajevo, Belgrade, and Zagreb, respectively. Although all consultants were living in Massachusetts when they participated in this study, nine of the seventeen were born and raised in one of these cities. Of the ten consultants that were recorded, three were raised and educated in Belgrade, two in Zagreb, and one in Sarajevo.
The questionnaire asked for grammaticality judgments on about forty-five items, each consisting of two to six alternate wordings. The items were designed to test possibilities in word order scrambling, peninitial clitic placement, idiomatic expressions likely to exhibit exceptional accent transfer, and use of certain dialectal features.

For example, the item in (20) gives two wordings that differ by whether the peninitial clitic *je* in the second clause follows the clause introducer *jer*, or the subject pronoun *ona*. Consultants rated each wording with a 1 (‘I could say this’), 2 (‘I wouldn’t say this, but someone else might’), or 3 (‘No one would say this’):

(20) A questionnaire item (Q33)

    a. Jana je nominirala Mariju jer je ona njena mama. 1 2 3
    b. Jana je nominirala Mariju jer ona je njena mama. 1 2 3

Nevertheless, for some questionnaire examples, these results didn’t provide a sharp classification into grammatical and ungrammatical wordings. Where such examples appear in the text, I provide a rough grammaticality score (g) by averaging the responses, as well as the number of 1 judgments (ones), to convey some sense of a particular wording’s acceptability. These are the results for the above example:

(21) Grammaticality results (Q33)

    a. Jana je nominirala Mariju jer je ona njena mama.      g: 1.0/3, ones: 8/8
    b. Jana je nominirala Mariju jer ona je njena mama.      g: 1.3/3, ones: 6/8

In other words, of eight speakers who rated this questionnaire item, all found (a) acceptable, but only six accepted (b). The latter’s less than perfect score of 1.3 can be

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17 Gloss: ‘Jana nominated Marija because she’s her mom’. 30
interpreted to show that it’s essentially grammatical, but perhaps requires some particular context, or sounds regional (see 5.5.5 for further discussion).\(^\text{18}\)

The data obtained through audio recording were intended to test several sources of evidence for clitic parsing. These included function word promotion, accent transfer to proclitics, interactions between PC placement and sentence intonation, and consonant assimilations across word boundaries.

I mark data taken from interviews and audio recordings with a two-letter code for the consultant who provided them, e.g. \(AB, DD, DK, DT, HZ, OT, SN, TH\). Questionnaire data are indicated with a \(Q\) plus the item number, as above.

The interviews, questionnaire, and recordings partly answered the need for phonological and syntactic data on modern BCS, as well as the goal to represent Bosnian, Serbian, and Croatian roughly equally. These sources allowed comparisons across regional standards, and gave more weight to grammaticality judgments on some points that have been unclear in the literature.

However, a weakness of these data was their lack of depth. Because they cover several phenomena, the information on each phenomenon was sufficient to reveal broad phonological and syntactic patterns in modern BCS, but too scarce to reveal subtle patterns that are apparent only over many examples.

\(^{18}\) Although there were fifteen questionnaire respondents, most grammaticality scores are calculated over about five to eight speakers. One reason for this is that not all consultants received exactly the same questionnaire. Some spellings and wordings were altered to reflect regional usage, and some items were added or removed during the course of the study in response to consultants’ comments. Some results were excluded when an item turned out to be poorly designed, or was misunderstood by respondents.
1.4.3 Textual corpora

The need for large amounts of consistent data was supplied by textual corpora. The analyses of clitic parsing and PC placement presented here depend largely on three corpora: a modern standard corpus, an older standard corpus, and a corpus based on a nonstandard dialect. Each of these satisfied certain desiderata relating to the data.

In an effort to construct a corpus that would represent each of modern Bosnian, Serbian, and Croatian more or less equally, I collected approximately 154,000 words of journalistic and government text from the worldwide web in February 2005. Each national language is represented by four sources originating from Sarajevo, Belgrade, or Zagreb, respectively, including the website of its respective government, and three online periodicals. I take this corpus to represent the modern written standards.

This is a list of the sources for the modern standard corpus, how I abbreviate them when citing data, and their city of origin (see references for more information):

(22) Sources in the modern standard corpus (J)

<table>
<thead>
<tr>
<th>online source</th>
<th>abbreviation</th>
<th>origin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vlada Republike Srbije</td>
<td>VRS</td>
<td>Belgrade</td>
</tr>
<tr>
<td>Politika</td>
<td>Politika</td>
<td>Belgrade</td>
</tr>
<tr>
<td>Srpske Novine Ogledalo</td>
<td>Ogledalo</td>
<td>Belgrade</td>
</tr>
<tr>
<td>Kurir</td>
<td>Kurir</td>
<td>Belgrade</td>
</tr>
<tr>
<td>Vlada Republike Hrvatske</td>
<td>VRH</td>
<td>Zagreb</td>
</tr>
<tr>
<td>Vjesnik Online</td>
<td>Vjesnik</td>
<td>Zagreb</td>
</tr>
<tr>
<td>Hina News Line</td>
<td>Hina</td>
<td>Zagreb</td>
</tr>
<tr>
<td>Dnevnik</td>
<td>Dnevnik</td>
<td>Zagreb</td>
</tr>
<tr>
<td>Vlada Federacije Bosne i Hercegovine</td>
<td>VBH</td>
<td>Sarajevo</td>
</tr>
<tr>
<td>Svjetlo Riječi</td>
<td>Svjetlo</td>
<td>Sarajevo</td>
</tr>
<tr>
<td>Jutarnje Novine</td>
<td>Jutarnje</td>
<td>Sarajevo</td>
</tr>
<tr>
<td>Dnevni Avaz</td>
<td>Avaz</td>
<td>Sarajevo</td>
</tr>
</tbody>
</table>
I used the modern corpus as a source of syntactic information, both for the analysis, and to construct the questionnaire. It was also an indirect source of phonological information. For example, I took commas to signal intonational phrase breaks (see 4.2.5), and took alternations in whether certain sequences were written as one word, as two words, or hyphenated as clues to their parsing by prosodic words (see 4.4.2).

On the other hand, the modern corpus includes no phonological information as such. In this respect, it was supplemented by recordings of modern speakers, and by two other, phonologically annotated corpora.

The older, or received standard corpus is excerpted from a collection of prose and poetry annotated for accent and nuclear length as a pronunciation guide for those learning BCS (Meyer and Stojićević 1927). The corpus itself consists of all the prose text, comprising six selections that amount to about 13,600 words. These are taken from the following works, in whole or in part:

(23) Works in the received standard corpus (Meyer and Stojićević 1927)

<table>
<thead>
<tr>
<th>author</th>
<th>work</th>
<th>pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laza K. Lazarević (b. 1851)</td>
<td>Prvi put s ocem na jutrenje</td>
<td>40-51</td>
</tr>
<tr>
<td>Simo Matavulj (b. 1852)</td>
<td>Povareta</td>
<td>52-64</td>
</tr>
<tr>
<td>Ksaver Šandor Dalski (b. 1854)</td>
<td>Na badnjak</td>
<td>65-75</td>
</tr>
<tr>
<td>Josip Kozarac (b. 1858)</td>
<td>Mrtvi kapitali</td>
<td>76-84</td>
</tr>
<tr>
<td>Vladimir Nazor (b. 1876)</td>
<td>Divičin grad</td>
<td>111-116</td>
</tr>
<tr>
<td>Borisav Stanković (b. 1876)</td>
<td>Pokojnikova žena</td>
<td>118-126</td>
</tr>
</tbody>
</table>

These page intervals will serve as a guide to corpus citations, which are by page number. I’ve also indicated here each author’s year of birth, as an indication of how far his language may be expected to diverge from modern styles.
The selections in the received corpus follow a Vukovian literary standard, but with some occasional non-Vukovian features, and some nonstandard dialogue. The phonological annotations are also in a Vukovian standard, but are provided by the editors, guided by Stojićević’s native accent:

Regarding accentuation, we follow the modern colloquial speech of educated people. This language, insofar as it is correct, agrees in particulars with the norms established by Vuk and Daničić… we depend on the speech of the one of us (S.), who speaks the literary language natively (in ekavian form). (Meyer and Stojićević 1927:v)

I take the syntactic and the phonological information in this corpus to represent an older version of the standard language, which I refer to as a ‘received standard’. Although it departs somewhat from the Vukovian canons, it’s more conservative than the data from modern consultants. Concerning the phonological annotation, we find a greater incidence of accent transfer to proclitics than in the modern standards (see 4.4, 4.5). On the syntactic side, the text itself supports the attestation of unmarked host splitting by PCs, which is less common in the modern standards (see 5.2.5).

Apart from its age, this corpus also represents a large, consistent, and plainly annotated body of phonological information from a single speaker, namely Stojićević. This makes it possible to state statistical generalizations over parsing patterns.

A third corpus consists of sentences from a study of accent in a nonstandard dialect of the Piva and Drobnjak districts of northwestern Montenegro (Vuković 1940). This is near the core of the Štokavian dialect area, and not far from Vuk’s hometown of

---

19 ‘Bei der Akzentuierung ist der heutigen Umgangssprache der Gebildeten Rechnung getragen. Diese Sprache aber, soweit sie korrekt ist, stimmt zwar im wesentlichen mit der von Vuk und Daničić festgestellten Norm überein… stützen wir uns auf die Sprache des einen von uns (S.), der die Schriftsprache (in ekavischer Form) von Haus aus spricht.’
Tršić. The dialect is therefore close to the Vukovian standard (see 1.2). The data are annotated for accent and nuclear length, and come to about 3,800 words.

The Piva-Drobnjak data support the analysis of clitic parsing by the attestation of marginal parsing patterns that are predicted by the analysis, but which are uncommon or unattested in the data from received and modern standard varieties. These include more productive accent transfer to proclitics, proclisis of complementizers and conjunctions, and occasional failure to promote certain functional and semi-functional categories, such as adverbs, numerals, deictics, and strong pronouns.

I use the following abbreviations when citing corpus data, and with a few other examples from these sources that are not included in the corpora proper:

(24) Abbreviations for references to corpus data

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>J</td>
<td>modern standard corpus (journalistic and government text)</td>
</tr>
<tr>
<td>MS</td>
<td>received standard corpus (Meyer and Stojičević 1927)</td>
</tr>
<tr>
<td>V</td>
<td>Piva-Drobnjak corpus (Vuković 1940)</td>
</tr>
</tbody>
</table>

1.4.4 Other sources

In addition to data from native speakers and corpora, I relied on a few reference sources to such an extent that I frequently abbreviate references to them. These included an overview and regional study of BCS accent (Magner and Matejka 1971), an overview of the history, dialectology, and standard grammar of BCS (Browne 1993), and a concise reference grammar (Kordić 1997).

In addition, my main references for standard accentuation and nuclear length were the compendium of the standard orthography compiled by the Pravopisna komisija (1960), and a BCS-to-English dictionary (Benson 1971, 1979).
References to these sources are abbreviated as follows:

(25) Abbreviations for other sources

Benson (1971, 1979)  B, Benson
Browne (1993)  Browne
Kordić (1997)  Kordić
Magner and Matejka (1971)  MM
Pravopisna komisija (1960)  P, Pravopis

Other two-letter codes in examples refer to native speaker consultants who provided the relevant data (see 1.4.2).

1.5 Summary

In this chapter, I introduced the problems that will concern the dissertation (1.1), which are to establish, by rigorous evidence, the prosodic representations of clitics, and to account for how these representations are determined by the grammar. I also provided overviews of the BCS language and issues related to standardization (1.2), the theoretical framework (1.3), and the sources of data used in the study (1.4).

I proceed now to the analysis of word accent, which will occupy chapters 2 and 3, and will lay the foundation for the investigation of prosodic clisis in chapters 4 and 5.
CHAPTER 2

WORD ACCENT

2.1 Introduction

The study of prosodic clisis begins with identifying clitics’ phonological representations. However, our observation of these abstract representations is indirect, through their interactions with more apparent phenomena like segmental phonology, word order, intonation, and accent. For BCS, the most useful of these is accent. I therefore devote this and the following chapter to an examination and analysis of word accent, and its value and limitations in discovering clitic prosody.

In traditional descriptions, the concept of ‘accent’ (akcenat) comprises not only word prominence, but patterns of tone and syllable weight as well. Here, I’ll use the general term stress for word-level prominence in all its manifestations, reserving accent for pitch accent—that is, prominence with some tonal component. This is both to avoid confusion between language-particular and general theoretical terminology, and to distinguish dialects where word stress is indeed associated with pitch accent—such as the received Vukovian standard—from those where word stress is non-tonal.

I’ll begin in 2.2 by summarizing some of the differences in accent systems across Neo-Štokavian dialects. Of particular relevance are differences between the Vukovian standard on the one hand, and the modern standards on the other. Although all standard varieties are objects of study here, in Vukovian we find well documented patterns that are particularly informative regarding word and clitic prosody, whereas the modern standards are somewhat less codified, supporting less specific conclusions.
I then proceed to develop a formal analysis of word accent. In 2.3, I summarize some of the patterns in accent shape and distribution found in the Vukovian system, and how these are analyzed in previous work. Then in 2.4, I offer an analysis of accent that connects it to the broader analysis of word, clitic, and phrasal prosody to be developed in later chapters, thereby refining the usefulness of accent as a diagnostic for clisis. In 2.5, I review the conclusions of this first of two chapters on accent.

2.2 Neo-Štokavian accent systems

2.2.1 Introduction

I preface the analysis of accent with a discussion of how accent varies across Neo-Štokavian varieties. This is warranted, in part, by the current state of the language, which exists as several emerging national standards beside a traditional literary standard, all with different accent systems. Some background on variation is required also in order to speak to whether we can construct a unified account of accent, based on data from several varieties, that is also of practical use in investigating clitic prosody.

Recall from 1.4 that the data used in this study come almost exclusively from Štokavian varieties, including the modern standards, the traditional Vukovian standard, and the non-standard Piva-Drobnjak dialect. Although these all exhibit variations on what might be called a canonical Neo-Štokavian accent system (on which more below), the Vukovian system is of particular importance here, because it’s complex, well described, and largely standardized. It’s therefore an ideal object of study in its own right, as well as a model of comparison for other Neo-Štokavian systems.
I begin, therefore, by discussing the properties of the Vukovian system. I’ll then summarize some of the important differences between this system and those of the other varieties that inform the study. Significant points of variation include whether a variety has tonal accent or plain stress accent, if it has tonal accent, how many word accents it distinguishes, the incidence of accent transfer to proclitics, and the extent to which syllable nuclei support contrasts in length.

I take the position that the varieties that inform this study are similar enough to warrant a unified account of their word and clitic prosody, despite certain salient differences in how they realize word stress. Moreover, we’ll see in later chapters that variation can also be helpful in distinguishing among different potential analyses.

2.2.2 The Vukovian accent system

By the ‘Vukovian’, ‘received’, or ‘traditional’ standard, I refer to the variety described by Vuk, Daničić, and others that was for many years a de facto standard across the BCS-speaking area (see 1.2). For our purposes, the important features of this variety are that it exhibits four tonal word accents with systematic distribution, accent transfer to proclitics, and a length contrast in accented and post-accentual syllables.

The four word accents of the Vukovian system are represented, when necessary, by the diacritics ”, ^, `, and ‘. These are categorized along two dimensions: whether their pitch falls or rises, and whether the syllable on which they’re perceived has a short or long nucleus (Starcsevics 1812, Karadžić 1818, Daničić 1851, 1925):\(^1\)

---

\(^1\) Ivić (1976) credits Starcevics (Starčević) with the first description of the accents, Karadžić with the creation of the four current diacritics, and Daničić with the first consistent and accurate attribution of accents to particular words, especially regarding the distinction between the two short accents.
The four Vukovian accents

<table>
<thead>
<tr>
<th>Short falling</th>
<th>Mnògo</th>
<th>‘much’</th>
<th>Long falling</th>
<th>Bërzo</th>
<th>‘quickly’</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short rising</td>
<td>Skòro</td>
<td>‘soon’</td>
<td>Long rising</td>
<td>Vâžno</td>
<td>‘important’</td>
</tr>
</tbody>
</table>

The following minimal pairs illustrate the contrasts in this system, both short versus long, and falling versus rising:

(2) Some minimal pairs for accent (Magner and Matejka 1971, Browne 1993)

<table>
<thead>
<tr>
<th>luk</th>
<th>‘onion’</th>
<th>lûka</th>
<th>‘harbor’</th>
</tr>
</thead>
<tbody>
<tr>
<td>lûk</td>
<td>‘arch’</td>
<td>Lûka</td>
<td>‘Luke’</td>
</tr>
<tr>
<td>ùmiti</td>
<td>‘reason’ (verb)</td>
<td>slâgati</td>
<td>‘tell lie’</td>
</tr>
<tr>
<td>ùmiti</td>
<td>‘wash’ (verb)</td>
<td>slâgati</td>
<td>‘stack up’</td>
</tr>
<tr>
<td>bdî</td>
<td>‘wake up!’</td>
<td>grâmdu</td>
<td>‘city (DAT)’</td>
</tr>
<tr>
<td>bdî</td>
<td>‘is awake’</td>
<td>grâmdu</td>
<td>‘city (LOC)’</td>
</tr>
</tbody>
</table>

Although I follow most work on BCS accent in adopting these diacritics, I will draw in later sections on more explicit representations of the tonal component of accent, justifying these as the analysis develops (see 2.3.3). For the present, more descriptive discussion, however, I’ll continue to rely solely on the traditional diacritics.

Descriptively speaking, the accent diacritics convey three kinds of information, which are (i) place: the unique syllable in a word that’s perceived as stressed, (ii) shape: that syllable’s falling or rising pitch contour, and (iii) length: the length of that syllable’s nucleus. However, the question of whether the accents are formally decomposable into these or other more primitive elements remains a point of contention.

The difference between short and long accents, at least, is uncontroversially ascribed to the independent contrast of nuclear length. The reasons for incorporating length into the descriptive accent system probably include that word stress enhances the
length contrast, that the presence or absence of length on an accented syllable significantly alters its perceived pitch contour, and economy of notation.

The more difficult problem is the relation between accent place and shape. It’s commonly observed that these properties don’t vary independently. Briefly, falling accents occur only on word-initial syllables, while rising accents can occur on any but a final syllable. This has led to several proposals for collapsing place and shape into a single phonological contrast. This problem is summarized and discussed in 2.3.

2.2.3 The phonetics of word accent

I won’t say much regarding the phonetics of word accent, focusing instead on its phonological analysis. However, a couple of observations are relevant to our purposes.

Lehiste and Ivić (1963, 1986) report two important discoveries based on instrumental measurements. First, the only consistent correlate of stress across dialects is the greater relative duration of stressed syllables, independently of the nuclear length contrast. This establishes that the syllable on which accent is marked orthographically is in fact the phonologically stressed syllable, contrary to some proposals.

Second, they confirm an observation that Masing (1876) made by ear, that the falling-rising contrast depends on cues that lag into the syllable following the stressed one. In fact, the short falling and short rising accents are indistinguishable from each other within the stressed syllable, though the long accents do have perceivably distinct contours within the stressed syllable. This finding supports the claim that, while the ‘accented’ syllable bears word prominence, the phonological contrasts involved in accent
are carried partly by post-accentual syllables. These findings prove to be important points in the phonological analysis of the falling-rising distinction.

Lehiste and Ivić (1986) also provide a comprehensive review of work on the phonetics of accent up to that time. Other detailed discussions in English of this topic are found in Ivić (1976), Gvozdanović (1980), and Godjevac (2000a, 2000b).

### 2.2.4 Accent transfer to proclitics

Another important feature of some Neo-Štokavian varieties is the attestation of productive accent transfer to proclitics. Accent transfer is important to this study both as a source of evidence for proclisis, and for its connection to the distribution of falling versus rising accent, which inform the analysis of accent in 2.3 and 2.4.

Accent transfer (*prenošenje*)—also ‘jumping’ (*skakanje*), ‘retraction’, or ‘shift’—is a phenomenon whereby a word that normally bears its own accent instead transfers its accent to a proclitic, as in (3). Accent transfer is observed most commonly to the negator *ne* (a), but also to prepositions (b), and the conjunctions *i*, *ni* (c,d), and least commonly to some complementizers (e), numerals (f), pronominals (g), and adjectives (h):

3 Accent can transfer to various categories (Piva-Drobnjak)

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>nè mislïš ‘you don’t think’</td>
<td>e.</td>
<td>dà vidïš ‘that you see’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td>dò pïsa ‘up to waist’</td>
<td>f.</td>
<td>dvijï godïne ‘two years’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td>ì dòçi ‘and to come’</td>
<td>g.</td>
<td>mòj brate ‘my brother! (VOC)’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d.</td>
<td>ni ñuo ‘nor heard’</td>
<td>h.</td>
<td>zlá sreçã ‘bad luck’</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

These examples are from the Piva-Drobnjak dialect, which exhibits regular transfer in several of these contexts. In the Vukovian standard too, transfer is typical to *ne*
and prepositions (a,b), and often to i, ni, and da as well (c,d,e). In the modern city standards, by contrast, we’ll see that transfer is less common.

Although I’ll often speak of transfer as a single phenomenon, in fact we find two kinds, whose patterns motivate distinct formal analyses. Under old transfer, which is inherited from Common Slavic, a proclitic gets initial falling accent from a host that otherwise exhibits mobile accent (see 2.3.4). Under new transfer, found only in Neo-Štokavian dialects, a proclitic receives rising accent on its final syllable:

(4) Two kinds of accent transfer

- old transfer: ću vodu ‘into water’ prȅko mōra ‘across sea’
- new transfer: ću kuću ‘into house’ prekō praga ‘across threshold’

In 2.3 and 2.4, we’ll see that old and new accent transfer reflect more general differences in the behavior of falling and rising accent, respectively. Whereas old transfer is essentially a manifestation of default initial falling accent, both new transfer and the modern rising accents owe their existence to a historical accent shift that is the defining feature of the Neo-Štokavian dialects.

2.2.5 The Neo-Štokavian accent shift

The Neo-Štokavian accent shift is a historical development, dated to around the 1400s, that defines Neo-Štokavian as a sub-group within greater Štokavian. A basic understanding of the shift will help to establish a more complete picture of accent
variation, and bears on the plausibility of the synchronic analysis of accent transfer, which to some extent recapitulates the historical shift.\(^2\)

In dialects where the shift is complete, previously noninitial accents have shifted one syllable leftward and become uniformly rising, while accents that were already initial have become uniformly falling. A few examples illustrate how this shift transformed an older three-accent system (“, , ,”), attested across Štokavian, Kajkavian, and Čakavian alike, into the canonical Neo-Štokavian system of four accents (”, , , ”):

(5) The Neo-Štokavian accent shift (Magner and Matejka 1971, Peco 1971)

<table>
<thead>
<tr>
<th>older BCS</th>
<th>Neo-Štokavian</th>
</tr>
</thead>
<tbody>
<tr>
<td>selô</td>
<td>sêlo</td>
</tr>
<tr>
<td>sêla</td>
<td>sêla</td>
</tr>
<tr>
<td>glävâ</td>
<td>gláva</td>
</tr>
<tr>
<td>glâvu</td>
<td>glâvu</td>
</tr>
<tr>
<td>krâljej</td>
<td>krâlj</td>
</tr>
<tr>
<td>krâljjë</td>
<td>krâlja</td>
</tr>
</tbody>
</table>

‘village (NOM.SG)’
‘village (NOM.PL)’
‘head (NOM)’
‘head (ACC)’
‘king (NOM)’
‘king (GEN)’

This small data set exemplifies the creation of new rising accents (selô, glävâ > sêlo, gláva) as well as the neutralization of all original word-initial accents to falling (krâljej, glâvu > krâlj, glâvu), which resulted in a new system of contrasts.\(^3, 4\)

---

\(^2\) The dating of the shift isn’t precisely established. Magner and Matejka (1971:48): ‘It is assumed that the process of accent retraction had taken place by the fifteenth century though it could have taken place earlier.’ Lehiste and Ivić (1986:1): ‘the so-called Neoštokavian accent shift… is assumed to have started in the fifteenth century.’

\(^3\) According to Alexander (1993), the shift comprised several less drastic shifts that occurred in more restricted environments, and which show various stages of completion across non-standard Štokavian dialects: ‘It is assumed that this shift occurred first from open final syllables, then from closed final syllables, and finally from medial syllables. It also occurred earlier from short syllables than from long ones, and earlier when the original pretonic syllable was long than when it was short.’ (181)

\(^4\) The neo-acute, or old long rising accent (krâlj) came from a still earlier stress retraction in Late Common Slavic, and is preserved best in some modern Čakavian dialects. In canonical Neo-Štokavian dialects, the neo-acute has merged with the historical circumflex, or long falling accent (Magner and Matejka 1971).
These data also illustrate how a number of other patterns in the new accent system result from leftward accent shift. For example, the distributional restrictions that falling accent is only initial, that noninitial accent is always rising, and that final accent is possible only in monosyllabic words (see 2.3). Further, we now see that new accent transfer (e.g. ū kuću; see 2.2.4) is essentially the same phenomenon as word-internal shift: both yield rising accent exactly one syllable to the left of its pre-shift position.

Last, although these data show that, before the shift, long nuclei were attested in pre-accentual syllables (glāvā, krāľjā), and remained long if they became accented (gláva, kráľja), another result of the shift was that all new pre-accentual nuclei became uniformly short. The fact that this neutralization accompanied the leftward shift helps to guide our choice among alternative analyses of length neutralization (see 3.4.3).

This concludes this descriptive introduction to Vukovian accent. In the rest of 2.2, I’ll compare this to the properties of accent in the modern standards.

2.2.6 Word accent in modern standard BCS

The modern standards of Zagreb, Belgrade, and Sarajevo (to the extent that these exist) vary in how closely their accentual systems resemble the Vukovian one. This complicates the reliability of accent as a diagnostic, since I intend to generalize over clitic phonology across BCS, but rely largely on data from more Vukovian sources.

Here, I’ll summarize the accentual properties of the modern standards. Although the accentual properties of city speech are by nature diverse, there are clear trends in the presence or absence of certain Neo-Štokavian features. Generally speaking, central and
rural Štokavian dialects are closest to Vukovian, while the cities exhibit varying degrees of loss of pitch accent, accent transfer, and length contrasts.

Magner and Matejka (1971) present the results of a study of accent and nuclear length contrasts in modern BCS, for which the subjects were approximately 1,600 speakers, mostly high school students, from across the BCS-speaking area. They tested whether modern speakers pronounced and perceived differences in minimal pairs distinguished only by accent or length in Vukovian. For example:

(6) Some minimal pairs investigated by Magner and Matejka

<table>
<thead>
<tr>
<th>pȁra</th>
<th>‘steam’</th>
<th>grȁd</th>
<th>‘hail’</th>
</tr>
</thead>
<tbody>
<tr>
<td>pȁra</td>
<td>‘money’</td>
<td>grȁd</td>
<td>‘city’</td>
</tr>
<tr>
<td>rȁdio</td>
<td>‘radio’</td>
<td>sûprugȍm</td>
<td>‘wife (INST)’</td>
</tr>
<tr>
<td>rȁdio</td>
<td>‘worked’</td>
<td>sûprugom</td>
<td>‘husband (INST)’</td>
</tr>
<tr>
<td>'îmena</td>
<td>‘name (GEN.SG)’</td>
<td>östrva</td>
<td>‘island (GEN.SG)’</td>
</tr>
<tr>
<td>'îménà</td>
<td>‘name (GEN.PL)’</td>
<td>östřvá</td>
<td>‘island (GEN.PL)’</td>
</tr>
</tbody>
</table>

Magner and Matejka’s most general finding was that, while many Vukovian contrasts remained strong in rural and smaller urban areas of Bosnia and Herzegovina (e.g. Mostar, Gacko, Trebinje, Stolac, Travnik), they were weaker in Sarajevo, weaker still in more peripheral Štokavian cities like Belgrade, and weakest of all in cities whose vernaculars are non-Štokavian, notably Zagreb. They ascribed this finding to two factors: that central Štokavian varieties are closer to Vuk’s native dialect (see 1.2), and that dialect mixing in urban areas thwarts the maintenance of such subtle contrasts.

Nevertheless, some contrasts were more persistent than others. Most robustly distinguished in all regions were pairs involving place of accent (e.g. ‘îmena, ‘îménà), or length on stressed syllables (grȁd, grȁd). Further, in both rural and urban Štokavian areas,
including Sarajevo and Belgrade, long nuclei supported the contrast between the long falling and long rising accents (râmio, râmio). On the other hand, contrasts between the short accents (pâra, pâra), and in length on unstressed syllables (òstrva, òstfvā), were vanishingly weak outside rural Štokavian areas.

Among the three major cities, accentuation in Zagreb was the furthest from Vukovian. While subjects in Zagreb perceived the strongest contrasts—place of accent, and length on accented syllables—they generally failed to produce length contrasts. Further, they failed to distinguish falling and rising accents, either in perception or in production, employing instead a non-tonal ‘stress accent’ (tromi).

Smiljanić and Hualde (2000) confirm this finding, based on a study of word and sentence intonation in Belgrade and Zagreb. They report that their Belgrade subjects maintained some contrasts among pitch accents, while their Zagreb subjects didn’t. Like Magner and Matejka, they attribute this to the influence in Zagreb of the Kajkavian vernacular on the Štokavian standard.

In short, modern Štokavian standards represent a continuum with respect to their maintenance of canonical pitch and length contrasts, from strong attestation in central Štokavian areas, to weak or nonexistent in non-Štokavian areas. However, indications are that place of accent, at least, remains fairly regular across the standards.

2.2.7 Accent transfer in modern standard BCS

Like pitch and length contrasts, we find that the incidence of accent transfer to proclitics varies considerably across accent systems. Attestations of transfer, and the lack thereof, are a central issue of chapter 4, because these provide some of the strongest
evidence for and against proclisis, respectively. However, while one finds reports of broad patterns in the incidence of transfer across contexts and dialects, it’s difficult to quantify these to a point where they can contribute to a rigorous analysis.

I approach this problem, first, by focusing on a limited set of potentially proclitic function word categories (see 4.2.2). These are exemplified below in contexts of transfer. Two, negation and complementizers, are proclitic only on verbs. The others, prepositions and the conjunctions $i$ and $ni$, are found preceding a greater range of possible hosts, including nouns, pronouns, and adjectives:

(7) Four categories to which accent transfer is attested (MS, Piva-Drobnjak)

| negation          | complementizers                  
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a. ně vidǐm ‘I don’t see’</td>
<td>c. då vidǐm ‘that I see’</td>
</tr>
<tr>
<td>b. ně znàm ‘I don’t know’</td>
<td>d. štà rečēš ‘what you’re saying’</td>
</tr>
<tr>
<td>prepositions</td>
<td>conjunctions ($i$, $ni$)</td>
</tr>
<tr>
<td>e. ū njū ‘at her’</td>
<td>h. ī tfī ‘you too’</td>
</tr>
<tr>
<td>f. ū grlo ‘into throat’</td>
<td>i. ī kamēn ‘and stone’</td>
</tr>
<tr>
<td>g. ū pūstōj ‘in empty (one)’</td>
<td>j. ī glādan ‘and hungry’</td>
</tr>
</tbody>
</table>

Although such examples are common in the received standard, they’re less so in modern varieties. For example, in an early version of their study, Magner and Matejka included minimal pairs whose similarity depended on the reliability of accent transfer:

(8) A minimal pair that depends on accent transfer to prepositions

a. Kokoš krade otpatke svako jutro.
   chicken steals scraps every morning
   The chicken steals scraps every morning.

b. Kokoš krade od patke svako jutro.
   chicken steals from duck every morning
   The chicken steals from the duck every morning.
The intended contrast here is in the length of the final vowels of *otpatke* and *patke*, which in Vukovian are short and long, respectively. Finding, however, that most of their consultants lacked transfer to prepositions—saying, in this case, *od *patke* instead of *od* *patke*—Magner and Matejka dropped such items from their study.

Magner and Matejka also cite several grammarians (Brabec et al. 1965, Hamm 1967, Stevanović 1970) regarding the observation that accent transfers less often in the modern literary language than in the traditional standard:

One notices a tendency in the literary language for the accent to be shifted more infrequently to the proclitic, especially a polyllabic proclitic, and to connectives: preko mōra instead of prēko mōra, u jezeru instead of ū jezeru, ni brātu instead of ni brātu, kad rēcēm instead of kād rēcēm, da vidīm instead of dā vidīm, dāni i gōdine instead of dāni i godine. The accent is regularly shifted to the prefix or to the negative particle *ne:* pōmīslīti – mīslīt, nē vidīm – vidīm. (Brabec et al. 1965:21, translation Magner and Matejka 1971:10)

Ivić describes modern transfer failure in somewhat more detail:

[Transfer failure] can result from a weaker semantic or syntactic connection, but also from the lesser frequency of a syntagm, or from the greater length of its parts. [Transfer] is most consistently realized with verbs in connection with *ne*... it is very common for pronouns with prepositions (and with the conjunctions *i* and *ni*), with nouns it is almost completely limited to prepositional syntagms... and is least extensive with adjectives. Naturally, the situation varies considerably by geography. The scope of the phenomenon is most limited in large cultural centers of the east and west, in Belgrade and Zagreb, for example, and most extensive in central regions (Bosnia and Herzegovina, Montenegro)... In every regional variant of the standard language there are syntagms... where the phenomenon is obligatory, those where it is optional, and those where it never occurs. (Ivić 1965:139)

---

5 Glosses: *preko mora* ‘across sea’, *u jezeru* ‘at lake’, *ni brātu* ‘nor brother (DAT)’, *kad rēcēm* ‘when I say’, *da vidīm* ‘that I see’, *dāni i gōdine* ‘days and years’, *mīslīti, pōmīslīti* ‘think (IMPF, PF)’, *nē vidīm* ‘I don’t see’.

6 ‘Na ovo [transfer failure] može uticati slabija semantička odr. sintaksička povezanost, a takodje i manja frekvencija sintagme ili veća dužina njenih delova. Obuhvatanje proklitike akcentom je najdoslednije ostvaren kod glagola u vezi sa *ne*... vrlo je obično kod zamenica s predlozima (pa čak i s veznicima *i* i *ni*), kod imenica je gotovo sasvim ograničeno na predloške sintagme... dok je kod prideva relativno najmanje rasprostranjeno. Situacija, uostalom, znatno varira geografski. Obim pojave je najuži u velikim kulturnim centrima na istoku i zapadu, npr. u Beogradu i Zagrebu, a najširi u centralnim krajevima (Bosna i
In other words, the incidence of accent transfer is influenced by the category of the potential proclitic, the category of the host, and the sizes of proclitic and host:

(9) Some trends in the comparative frequency of transfer

<table>
<thead>
<tr>
<th>Category</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>proclitic</td>
<td></td>
</tr>
<tr>
<td>category:</td>
<td></td>
</tr>
<tr>
<td>ne &gt; prepositions</td>
<td></td>
</tr>
<tr>
<td>i, ni,</td>
<td></td>
</tr>
<tr>
<td>complementizers</td>
<td></td>
</tr>
<tr>
<td>host category:</td>
<td></td>
</tr>
<tr>
<td>pronoun &gt; noun &gt;</td>
<td></td>
</tr>
<tr>
<td>adjective</td>
<td></td>
</tr>
<tr>
<td>word size:</td>
<td></td>
</tr>
<tr>
<td>short words &gt;</td>
<td></td>
</tr>
<tr>
<td>long words</td>
<td></td>
</tr>
</tbody>
</table>

See 4.4.5, 4.5.6, 4.5.7 for related findings in the present study.

Regarding geographical differences in the incidence of transfer, Stevanović offers an observation similar to Ivić’s, that failure of accent transfer ‘is an ever more frequent phenomenon, especially in regions and cultural centers of the eastern part of the Serbo-Croatian-speaking territory’ (1970:165).²

In sociological terms, Lehiste and Ivić observe that transfer can seem ‘rustic’:

There are syntagms in which the transfer is very common (u vodu ‘into the water’, nê râdi ‘does not work’, etc.) and syntagms in which the pronunciation of educated people keeps the accent always on the accentogenic word (da vidî ‘that he sees’, i sîn ‘and the son’; forms like dà vidî, i sîn sound rustic). (Lehiste and Ivić 1986:171-172)

Similarly, Magner and Matejka note that to residents of Belgrade and Zagreb, the prescriptive Vukovian standard seems ‘countrified’ (seljački, 1971:191). Although such remarks suggest that transfer is more common in rural varieties, it’s unclear to what extent this is based on fact, as opposed to the attitudes of urban speakers.

² ‘čuvanje akcenta posebnih reči je sve češća pojava, naročito u oblastima i kulturnim centrima istočnog dela srpskohrvatske jezičke teritorije.’
In summary, the phenomenon of accent transfer varies both across contexts and across dialects. The incidence of transfer is observed to depend on the syntactic category of proclitic and host, as well as on their size. It’s also generally agreed that transfer is less frequent in modern standard BCS than in the Vukovian standard.

Further, reports indicate that transfer is more regular in central as opposed to peripheral Štokavian areas, and in rural as opposed to urban dialects. This echoes the findings concerning accent shape and length (see 2.2.6), indicating that the accent systems closest to the Vukovian one are to be found in a central region that includes, roughly, Bosnia and Herzegovina, western Serbia, and northwestern Montenegro.

2.2.8 Consequences for the present study

In 2.2, I’ve summarized some of the variation found across Neo-Štokavian accent systems. Descriptively speaking, the Vukovian standard is characterized by a system of four word accents, productive accent transfer to proclitics, and a nuclear length contrast on post-accentual syllables. In the modern standards, by contrast, one finds fewer contrasts in both accent and length, and less incidence of transfer. Beyond such general observations, however, it proves difficult to quantify variation across the standards. This has some consequences for the methodology of the study.

Most importantly, further insight into these patterns calls for copious, detailed, and consistent data. My analysis of accent is therefore based largely on the received Vukovian standard, because this variety is standardized and well described, and because of the availability of a corpus of text that’s annotated according to this standard (see 1.4).
Data from the modern standards, while equally important, figure less prominently here because they’re more variable and harder to obtain.

Patterns and incidences of accent transfer, in particular, are cornerstones of the description of clitic phonology, yet the available data are vague. I therefore devote a significant portion of chapter 4 to substantiating and quantifying the generalizations over accent transfer that I make in this chapter (see 4.3.2, 4.4.2, 4.5.4, 4.5.6).

Last, another consequence of variation has to do with the representation of accent in examples. Since accent and length are so variable in modern varieties, I mark only the place of accent in data collected from modern speakers, ignoring any contrasts in pitch accent and nuclear length, e.g. 'ne može ‘can’t’, u 'kuću ‘into house’. This is in order to avoid the complications that would be involved in ascertaining this information, and to make data more comparable across varieties.

2.3 Patterns in accent shape and distribution

2.3.1 Introduction

Having described some of the important aspects of Neo-Štokavian accent, I’ll proceed, in the rest of this chapter, to develop a more formal analysis of accent. I’ll focus on the Vukovian, or traditional standard, because it’s established, well described, and rich in phenomena that are revealing of word and clitic prosody.

Apart from the presence or absence of accent on a word, which is perhaps the primary criterion for distinguishing clitics from non-clitics, we find patterns in accent shape, distribution, and determination that provide further clues to prosodic structures at and below the word level. In this section, I’ll summarize some of these patterns and how
they’re analyzed. This provides the basis for further analysis of accent determination in 2.4, as well as some important diagnostics for prosodic clisis.

### 2.3.2 The distribution of the falling and rising accents

It’s long been noticed that the four Neo-Štokavian accents exhibit systematic gaps in their distribution. These are illustrated in (10). While monosyllabic words are attested only with falling accent, polysyllabic words can have falling or rising accent on an initial syllable, but only rising accent noninitially. Polysyllables never get final accent.

(10) Distributional restrictions on the word accents

<table>
<thead>
<tr>
<th></th>
<th>monosyllables</th>
<th>polysyllables</th>
<th>polysyllables</th>
</tr>
</thead>
<tbody>
<tr>
<td>short falling</td>
<td>brȁt ‘brother’</td>
<td>pȍlje ‘field’</td>
<td>—</td>
</tr>
<tr>
<td>long falling</td>
<td>grȁd ‘city’</td>
<td>mȍre ‘sea’</td>
<td>—</td>
</tr>
<tr>
<td>short rising</td>
<td>—</td>
<td>crȉven ‘red’</td>
<td>planina ‘mountain’</td>
</tr>
<tr>
<td>long rising</td>
<td>—</td>
<td>rȕka ‘hand’</td>
<td>čokoláda ‘chocolate’</td>
</tr>
</tbody>
</table>

Put another way, falling accents appear only on initial syllables, and rising accents appear only on nonfinal syllables. Historically, these distributional facts result from the Neo-Štokavian accent shift, whereby all previously initial accents were neutralized to falling, and previously noninitial accents shifted leftward, becoming rising (see 2.2.5). As we’ll see, analyses of the modern accent system vary in the degrees to which they maintain the historical shift as a part of the synchronic grammar.

Although the focus of the following discussion will be the regular patterns in accent shape and distribution summarized in (10), I should point out that these generalizations aren’t exceptionless. While the restriction of rising accents to nonfinal
sylables is absolute, one does encounter some variation in the restriction of falling 
accents to initial syllables. These are of two general types, being found either in words 
borrowed from other languages (a), or in compounds (b):


a. beribêri  ‘beriberi’  
paradâjz, paràdajz  ‘tomato’  
asistënt, asistent  ‘assistant’  
komunîst, komùnist  ‘communist’

b. prvobràtućed  ‘first cousin’

samoȍdbrana  ‘self-defense’

poljoprȉvreda  ‘agriculture (field-economy)’

Jugoslȃvija, Jugòslȃvija  ‘Yugoslavia (south-Slavia)’

The somewhat weaker restriction on the distribution of falling accent underscores 
Lehiste and Ivić’s findings on the phonetics of accent (see 2.2.3). Rising accents are by nature nonfinal, because their realization depends on the pitch of the following syllable. Noninitial falling accents, by contrast, are phonetically possible, merely representing a failure of leftward accent shift.

Regarding the formal analysis of these exceptions, I’ll assume that borrowed 
words with exceptional accent belong to a special stratum of the vocabulary, and are protected by special faithfulness. I’ll call on this strategy again in 4.4.6, to account for idiosyncratic accent transfer in certain preposition-plus-noun sequences.

As for compounds with exceptional accent, it’s clear that this somehow reflects their morphological structure. The most straightforward analysis under the present framework would seem to be that such noninitial falling accents mark word-internal lexical word edges, which are parsed as p-word edges, which block accent shift. This
phenomenon, however, involves further issues of variation and the morphology of compounds, and I therefore leave its analysis to future work.  

2.3.3 Decomposing accent place and shape

The observed patterns in accent distribution bear on proposals to collapse accent place and shape into a single contrast (see 2.2.2). Here, I’ll review some of the approaches to this problem, eventually adopting the representation proposed by Inkelas and Zec (1988) and Zec (1988), according to which all word accents are single high tones, distinguished by their linking to particular syllables and moras. This summary is based in part on the concise review in Ivić (1976) of work to that date, as well as the more comprehensive one in Lehiste and Ivić (1986).

To begin with, some early phonemic analyses treat accent place and shape as independent features (Trager 1940, Hodge 1946, Kuznetsov 1948). The drawback to such approaches is that they don’t explain the abovementioned gaps in the distributions of falling and rising accents, but must assume them to be arbitrary.

---

8 The following data illustrate some of the complexities of accentuation in compound words. To begin with, one finds compounds with accent on the first member (a), shifted accent on a linking vowel (b), unshifted accent on the second member (c), or independent accent on both members (d):

(i) Accentuation in compound words (Pravopis, Benson)

<table>
<thead>
<tr>
<th>Compound</th>
<th>Accent Location</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. jědnostāvan /jedn-o-stāv-an/</td>
<td>‘simple (one-position)’</td>
<td></td>
</tr>
<tr>
<td>protivprāvan /protiv-prāv-an/</td>
<td>‘illegal (against-right)’</td>
<td></td>
</tr>
<tr>
<td>b. jenōstran /jedn-o-stran/</td>
<td>‘one-sided’</td>
<td></td>
</tr>
<tr>
<td>dusōbolja /duš-o-bolj-a/</td>
<td>‘sadness (spirit-disease)’</td>
<td></td>
</tr>
<tr>
<td>c. protivūsluga /protiv-ūslug-a/</td>
<td>‘favor in return (against-favor)’</td>
<td></td>
</tr>
<tr>
<td>austrūgarskā /austr-o-ugar-skā/</td>
<td>‘Austro-Hungarian’</td>
<td></td>
</tr>
<tr>
<td>d. više-mānje /viš-e-mānje/</td>
<td>‘more or less, mainly’</td>
<td></td>
</tr>
<tr>
<td>āustro-ūgarskā /āustro-ūgar-skā/</td>
<td>‘Austrian and Hungarian’</td>
<td></td>
</tr>
</tbody>
</table>

Further, the pair austrougarski, austro-ugarski illustrates that whether a compound is singly or doubly accented can result in a meaning contrast (Magner and Matejka 1971, Godjevac 2000a).
In the accounts of Jakobson (1931) and Trubetzkoy (1939), only rising accents are underlying, while falling accents represent underlying tonelessness. For example, pȍlje, planina come from /polje/, /planina/, where the acute represents rising tone. From this it follows that the distribution of the rising accents is freer, while that of the falling accents is noncontrastive (that is, only initial). However, this still doesn’t explain why rising accents are barred from final syllables. Also, certain accentual alternations indicate that only some, not all, words with falling accent are underlyingly toneless (see 2.3.4).

Based on the disyllabic realization of rising accent, Hodge (1958) proposes that falling accent is the plain alternative, while rising accent represents stress over two consecutive syllables: /pȍlje/, /planiná/. Although this accounts for why rising accents must be nonfinal, it’s contradicted by the findings that only the orthographically accented syllable is perceived as stressed, and that syllables following falling versus rising accents differ in pitch, rather than by duration, the best correlate of stress (see 2.2.3).

Ivić (1958) offers an illuminating restatement of the problem, pointing out that the number of contrastive accentuations of a word of n syllables is n, though accent is realizable on only n–1 of those syllables. Take the following words, each containing four light syllables. These exemplify the four possible accentuations of such a word: initial falling accent (a), or rising accent on any but the final syllable (b,c,d):

(12) Number of accentual contrasts equals number of syllables (Ivić 1965:136)

a. dȅtelina ‘clover’  
   b. piletina ‘chicken meat’
   c. babètina ‘old woman’
   d. veličina ‘size’
This suggests that place and shape are reducible to a single contrast with the same number of realizations as there are syllables in a word. Based on this insight, Ivić proposes a ‘place of accent’ diacritic (Akzentstelle), representing a high tone peak, which can appear at the beginning of any syllable: /detelina/, /pi|letina/, /babe|tina/, /veli|či|na/. A word-initial diacritic results in falling accent, while a diacritic between syllables yields rising accent. Thus, accent shape and distribution are reduced to a single contrast. On the other hand, the diacritic itself is an unusual representational device.

Subsequently, it was proposed that all accents are predictable from a diacritic that appears not preceding, but on any syllable, with the proviso that a noninitial mark is realized as rising accent on the preceding syllable: /dětelina/, /pilétina/, /babetina/, /veličiná/ (Jakobson 1963, Browne and McCawley 1965, 1973, Garde 1966a, 1966b, Stankiewicz 1966). In other words, accentual contrasts reduce to the last syllable with high tone (see 2.3.6). This has the same advantages as Ivić’s proposal, but employs a more conventional representation. Its peculiarity is that it retains the Neo-Štokavian accent shift as a rule of the synchronic grammar.

Based on these developments, Inkelas and Zec (1988) and Zec (1988) propose an autosegmental treatment, according to which a single high tone is linked to any syllable in a word, then spreads leftward if it’s noninitial. Singly linked tone then yields falling accent, and doubly linked tone yields rising accent:

(13) A single-tone decomposition of the word accents (Inkelas and Zec)

```
  H       H         H        H
/ pǒlje \ mőre \ planina \ čokoláda
```
This is the representation that I’ll adopt in this study. It accounts, first, for the distributions of the accents: falling accents are only initial, because only initial tone can’t spread, while rising accents must be nonfinal, because they result from spread. It also accounts for the accents’ phonetic shapes: an early tone peak in falling accents, versus a late peak in rising accents. Last, we’ll see that this approach derives other complex surface properties of accent from simpler properties of tone and prominence.

This can be contrasted with autosegmental representations in which falling and rising accents don’t reduce to the location of a single high tone, but represent different sequences of high and low tones (Godjevac 2000a, 2000b, Smiljanić 2004):

(14) A contour-tone decomposition of the word accents (Godjevac)\(^9\)

\[
\begin{align*}
&H^*+L & | & H^*+L & | & L^*+H & | & L^*+H \\
pòljè & | & mòrè & | & planìna & | & ćòkolàdà
\end{align*}
\]

Although this representation is phonetically more explicit than the single-tone approach, it’s less elegant and explanatory. First, it posits two phonemically distinct accents, instead of a single high tone. Second, it fails to collapse place and shape. Third, the different distributions of falling and rising accents must be stipulated. Nevertheless, Godjevac argues for this analysis based on a detailed examination of the phonetic shapes of the accents. However, I find this less convincing than the unified account of accent shape, distribution, and transfer that’s possible under the single-tone approach.

\(^9\) A tone letter with an asterisk (H\(^*\), L\(^*\)) means that the tone must be linked to a stressed syllable.
Having adopted Inkelas and Zec’s single-tone analysis, I’ll sometimes make use of a more compact representation of autosegmental tone, indicating the extent of tone linking and spreading by underscoring:

(15) A compact representation of tone linking

short falling accent \[mn\theta go\] pȇlje
long falling accent \[b\check{z}o\] môre
short rising accent \[sk\v{o}ro\] planína
long rising accent \[v\acute{a}\v{z}no\] ċokoláda

I’ll also continue in this chapter to speak of tone linking and spreading to syllables, though in fact I eventually conclude, following Inkelas and Zec, that tonal associations are significant down to the level of the mora. For the present, however, the syllable level is sufficiently precise for working out the basic mechanics of accent determination, and I leave the discussion of mora-level tone to chapter 3.\(^\text{10}\)

In the following sections, I’ll present Inkelas and Zec’s analysis of accent determination in more detail, showing that this approach incorporates insights from alternations in accentual paradigms, and from accent transfer to proclitics.

**2.3.4 The Inkelas and Zec analysis of accent determination**

I’ll say some more here about Inkelas and Zec’s analysis of Neo-Štokavian accent (Inkelas and Zec 1988, Zec 1988, 1992, 1993, 1999), which I take as the basis for my own analysis in 2.4. For the present, I establish the main points of the analysis, showing

\(^{10}\) Inkelas and Zec employ a notation that represents every mora with a separate letter, and high tone with an acute. Thus, orthographic pȇlje, môre, planína, ċokoláda become pȇlje, môre, planína, ċokoláda.
that it accounts not only for the shapes and distributions of the accents, but also for certain accent alternations within paradigms, and in proclitic-host sequences.

Inkelas and Zec’s analysis derives a single-tone representation of the falling and rising accents by means of a few principles on tone linking and spreading. First, p-words are underlyingly toneful or toneless. Tone can come from zero, one, or more morphemes in a word, but exactly one tone is pronounced on the surface.

Second, a single high tone is assigned to some syllable. If a word is underlyingly toneful, then its surface tone can in principle be assigned to any syllable, according to complex principles that I’ll return to later (see 2.3.6, 2.4.5, 3.2, 3.3.7). Underlyingly toneless words, on the other hand, necessarily get epenthetic tone, which is always initial. In other words, underlying tone is free, but epenthetic tone is always initial.

Third, tone spreads leftward from its assigned syllable, if possible. Some of the possible outcomes of tone assignment and spreading are depicted below. If tone is initial, then it can’t spread, yielding falling accent (a,b), but if it’s assigned to a noninitial syllable, then it spreads exactly one syllable leftward, yielding rising accent (c):

(16) Accent determination in underlyingly toneless and toneful words

<table>
<thead>
<tr>
<th>tonefulness</th>
<th>underlying</th>
<th>assignment</th>
<th>surface</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. toneless</td>
<td>/reẽe/</td>
<td>/reẽe/</td>
<td>rẽe ‘said’</td>
</tr>
<tr>
<td>b. initial tone</td>
<td>/ceká, H/</td>
<td>/ceká/</td>
<td>čeká ‘waits’</td>
</tr>
<tr>
<td>c. noninitial tone</td>
<td>/citã, H/</td>
<td>/citã/</td>
<td>čitã ‘reads’</td>
</tr>
</tbody>
</table>
These, then, are the important elements of Inkelas and Zec’s analysis:

- Words are underlyingly toneful or toneless, but always have surface high tone.
  
  (i) Underlyingly toneless words get initial tone on the surface.
  
  (ii) Underlyingly toneful words get tone on some syllable on the surface.

- Tone linked to a noninitial syllable spreads exactly one syllable leftward.

- The leftmost syllable linked to tone is the stressed syllable.

- Singly linked tone yields falling accent, doubly linked tone yields rising accent.

Now, since there’s no apparent difference between the surface accentuation of underlyingly toneless words (rẽče) and that of toneful words with initial tone (čěkā), one may ask why these should be treated differently in the formal analysis. In fact, these types are distinguished both by accent alternations in words with toneless roots, and by the different ways that they transfer accent to a proclitic.

Take the accentuation of words with ‘mobile’ accent. These are claimed to have toneless roots, so that their accent is either default, or determined by a toneful ending (Browne and McCawley 1965, Zec 1988). Consider first the uncliticized forms of the toneless roots /vod-/ and /rũk-/ in (17). Whereas in the nominative and locative singular they get tone from an ending, yielding rising accent (vôdi, rûci), their accusative singular forms are completely toneless, yielding default falling accent (vôdu, rûku):

(17) Two words with mobile accent (received)

<table>
<thead>
<tr>
<th></th>
<th>alone</th>
<th>plus clitic</th>
<th>alone</th>
<th>plus clitic</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOM</td>
<td>vōd-ã</td>
<td>‘water’</td>
<td>rŭk-ã</td>
<td>‘hand’</td>
</tr>
<tr>
<td>LOC</td>
<td>vōd-ũ</td>
<td>ŭ vōd-ũ</td>
<td>rŭc-ũ</td>
<td>ŭ rŭc-ũ</td>
</tr>
<tr>
<td>ACC</td>
<td>vōd-ũ</td>
<td>ŭ vōd-ũ</td>
<td>rŭk-ũ</td>
<td>ŭ rŭk-ũ</td>
</tr>
</tbody>
</table>
But these roots’ underlying tonelessness emerges most clearly in their accentuation with a proclitic. While rising accent on their toneful locative forms is unaffected by the presence of a proclitic (u vòdi, u rúci), their toneless accusative forms lose their accent completely to the proclitic (ũ vodu, ũ ruku).

Words with underlying tone assigned to their initial syllable, by contrast, don’t exhibit mobile accent, and if they transfer accent to a proclitic, the accent is rising:

(18) Two words with initial, falling, non-mobile accent (received)

<table>
<thead>
<tr>
<th></th>
<th>alone</th>
<th>plus clitic</th>
<th>alone</th>
<th>plus clitic</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOM</td>
<td>sōb-a</td>
<td>‘room’</td>
<td>kūjn-a</td>
<td>‘kitchen’</td>
</tr>
<tr>
<td>LOC</td>
<td>sōb-i</td>
<td>ũ sob-i</td>
<td>kūjn-i</td>
<td>ũ kūjn-i</td>
</tr>
<tr>
<td>ACC</td>
<td>sōb-u</td>
<td>ũ sob-u</td>
<td>kūjn-u</td>
<td>ũ kūjn-u</td>
</tr>
</tbody>
</table>

In other words, words with mobile accent exhibit old transfer, and those with non-mobile accent exhibit new transfer (see 2.2.4). Thus, the distinction between toneless and toneful stems accounts for several differences between these two types, with respect to accent location (initial versus free), accentual paradigm (mobile versus non-mobile), and accent transfer to proclitics (old versus new).

This comparison of accent transfer from toneless versus toneful stems also makes clear that under the present analysis of accent determination, old and new transfer are in fact different phenomena. Whereas old transfer represents default initial accent, new transfer results from the separate process of tone spreading. Yet both kinds of transfer have in common that they happen within—and therefore help to delineate—the domain of accent determination, which is presumably the prosodic word.
My primary purpose in the rest of chapter 2 will be to support this observation, first by more clearly articulating what transfer reveals about proclisis, and second by offering a more precise, formal analysis of accent determination.

2.3.5 Diagnostics for word and clitic prosody

By this analysis of tonefulness, tone linking, and tone spreading, we may identify at least three types of proclitic hosts, which differ in their tone linking, and consequently in whether and how they transfer their accent. This host typology, in turn, yields several useful rules of thumb for identifying the prosodic representations of clitics.

The data in (19) exemplify the accentuation of proclitics before the three kinds of host. Before a toneless host, a proclitic gets initial falling tone, just as the host does in isolation (a). Before a toneful host with initial tone, a proclitic receives tone spread, and gets rising accent (b). Last, tone linked to a noninitial syllable in the host can’t spread as far as the proclitic, so that the host is accented as in isolation (c):

(19) Accent determination in single words and proclitic-host sequences

<table>
<thead>
<tr>
<th>host type</th>
<th>underlying</th>
<th>alone</th>
<th>plus clitic</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. toneless</td>
<td>/reče/</td>
<td>rěče</td>
<td>ně reče</td>
</tr>
<tr>
<td>b. initial tone</td>
<td>/čekã, H/</td>
<td>čekã</td>
<td>ně čekã</td>
</tr>
<tr>
<td>c. noninitial tone</td>
<td>/čitã, H/</td>
<td>čitã</td>
<td>ne čitã</td>
</tr>
</tbody>
</table>

The data in (20) further demonstrate the accentual behavior of potential hosts for proclisis in isolation, and in combination with ne and prepositions. Underlyingly toneless hosts (a) and hosts with initial tone (b) have in common that they bear falling accent in isolation, but differ in that they undergo old versus new transfer, respectively, with a
proclitic. Hosts with noninitial tone, by contrast, bear the same rising accent both in isolation, and in combination with potential proclitics (c):

(20) Three classes of prosodic hosts (MS)

<table>
<thead>
<tr>
<th>a.</th>
<th>rȅče</th>
<th>‘said (2/3SG)’</th>
<th>nȅ reče</th>
<th>‘didn’t say (2/3SG)’</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>znâ</td>
<td>‘knows’</td>
<td>nȅ znâ</td>
<td>‘doesn’t know’</td>
</tr>
<tr>
<td></td>
<td>vrât</td>
<td>‘neck’</td>
<td>zâ vrâtom</td>
<td>‘behind neck’</td>
</tr>
<tr>
<td></td>
<td>môre</td>
<td>‘sea’</td>
<td>prêko môra</td>
<td>‘across sea’</td>
</tr>
<tr>
<td>b.</td>
<td>čêkâ</td>
<td>‘waits’</td>
<td>nê čêkâ</td>
<td>‘doesn’t wait’</td>
</tr>
<tr>
<td></td>
<td>pîtâ</td>
<td>‘asks’</td>
<td>nê pîtâ</td>
<td>‘doesn’t ask’</td>
</tr>
<tr>
<td></td>
<td>mâjkâ</td>
<td>‘mother’</td>
<td>zâ mâjkôm</td>
<td>‘behind mother’</td>
</tr>
<tr>
<td></td>
<td>präg</td>
<td>‘threshold’</td>
<td>prêko praga</td>
<td>‘across threshold’</td>
</tr>
<tr>
<td>c.</td>
<td>čîtâ</td>
<td>‘reads’</td>
<td>ne čîtâ</td>
<td>‘doesn’t read’</td>
</tr>
<tr>
<td></td>
<td>gôvôrî</td>
<td>‘speaks’</td>
<td>ne gôvôrî</td>
<td>‘doesn’t speak’</td>
</tr>
<tr>
<td></td>
<td>jêdno</td>
<td>‘one’</td>
<td>za jêdno</td>
<td>‘for one’</td>
</tr>
<tr>
<td></td>
<td>ôcijû</td>
<td>‘eyes (GEN.PL)’</td>
<td>preko ôcijû</td>
<td>‘across eyes’</td>
</tr>
</tbody>
</table>

Thus, the distinction between toneless and toneful hosts casts in more formal terms the descriptive distinction between old and new accent transfer (see 2.2.4).

Transfer to disyllabic proclitics further emphasizes this distinction among hosts. With a toneless host, the proclitic gets initial tone (prêko môra), but with an initial-toned host, tone spreads one syllable leftward (prekô praga), just as in single words.

A distillation of this discussion of the phonology of accent yields some specific diagnostic tools for analyzing the prosodic representations of clitics. For example, falling accent on a clitic shows that it’s initial in its p-word (a,c), whereas rising accent on a clitic’s final syllable shows that it’s nonfinal in its p-word (b,d):

(21) Transferred falling and rising accents convey different kinds of information

<table>
<thead>
<tr>
<th>a.</th>
<th>(nȅ pohrlî)</th>
<th>‘didn’t hurry’</th>
<th>c.</th>
<th>(û môre)</th>
<th>‘into sea’</th>
</tr>
</thead>
<tbody>
<tr>
<td>b.</td>
<td>(nȅ mičê)</td>
<td>‘doesn’t move’</td>
<td>d.</td>
<td>(û snu)</td>
<td>‘in sleep’</td>
</tr>
</tbody>
</table>
From this, I’ll conclude that these are not only proclitics, but *internal* proclitics. That is, no prosodic word edge separates proclitic from host. This depends on the premise that tone can’t spread across a p-word edge, which depends in turn on the claim that tone spreads only within the head foot of a p-word. Then, since a foot can’t straddle a p-word edge, neither can tone (see 2.4.8).

By the same token, then, an unaccented function word that precedes a syllable with falling accent signals a failure of accent transfer, which I’ll take to show that the function word precedes a p-word edge that blocks transfer:

(22) Transfer failure indicates the presence of a p-word edge\(^{11}\)

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a. i (čūjš)</td>
<td>‘and you hear’</td>
<td>c. da (nǐtko)</td>
</tr>
<tr>
<td>b. i (mājka)</td>
<td>‘and mother’</td>
<td>d. da (nēmā)</td>
</tr>
</tbody>
</table>

In short, accent is expected to transfer to a p-word-internal proclitic—and only to an internal proclitic—from a host that otherwise bears falling accent. On the other hand, hosts with rising accent, whether initial or noninitial, don’t transfer their accent, and are therefore uninformative as to whether or not a preceding word is proclitic:

(23) Potential hosts with rising accent are uninformative regarding proclisis

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a. ne pītažu</td>
<td>‘they don’t ask’</td>
<td>c. i sëstra</td>
</tr>
<tr>
<td>b. pod ikonōm</td>
<td>‘under icon’</td>
<td>d. da prələzi</td>
</tr>
</tbody>
</table>

These tests for prosodic clisis will be refined and extended in the analysis of word prosody and accent that follows in the rest of chapters 2 and 3.

---

\(^{11}\) Although I’ve analyzed *i* and *da* in these examples as free clitics, absence of transfer here doesn’t rule out affixal clisis: (da (nǐtko)), (i (čūjš)). See 4.4.5 for arguments against the affixal clitic analysis.
2.3.6 Underlying tone is right-aligned in some domain

An aspect of the analysis that I have so far set aside is how toneful stems get tone assigned to one of their surface syllables. While Inkelas and Zec (1988) treat the surface location of underlying tone as unpredictable, Zec (1988) proposes that underlying tone is assigned to a mora at the right edge of some morphological domain, later reinterpreting this as Optimality Theoretic right alignment (Zec 1999).

Here, I’ll review some of the basic arguments for the right-alignment approach to the assignment of underlying tone, which are that certain accent alternations are described most concisely in terms of a word’s last tone-linked syllable.

First, recall Browne and McCawley’s insight that all contrasts in accent shape and distribution are reducible to the last syllable bearing high tone, other patterns in accent then following from the analysis (see 2.3.3). Inkelas and Zec’s representation also incorporates this insight, in that it’s the last tone-linked syllable that carries the relevant contrast, although this is obscured somewhat by regular leftward tone spread.

This point is bolstered by an examination of some common accent paradigms, whose description is simplified by reference to the last tone-linked syllable in the word (Browne and McCawley 1965, Ivić 1965, Zec 1988). This is illustrated below with two classes of toneful nouns, the so-called barytones and oxytones.

Barytones exhibit the following accentual patterns, as determined by the number of syllables in their stem. While monosyllabic stems have falling accent (přста), polysyllabic stems have rising accent on the penult of the stem (kukůruza):
Some nouns with barytonic accent (Zec 1988:182-183)

<table>
<thead>
<tr>
<th>NOM</th>
<th>GEN</th>
<th>NOM</th>
</tr>
</thead>
<tbody>
<tr>
<td>pȑst</td>
<td>pȑst-a</td>
<td>‘finger’</td>
</tr>
<tr>
<td>jęlen</td>
<td>jęlen-a</td>
<td>‘deer’</td>
</tr>
<tr>
<td>prózor</td>
<td>prózor-a</td>
<td>‘window’</td>
</tr>
<tr>
<td>kukûruz</td>
<td>kukûruz-a</td>
<td>‘corn’</td>
</tr>
<tr>
<td>krȁv-a</td>
<td>‘cow’</td>
<td>prîrod-a</td>
</tr>
<tr>
<td>bùndev-a</td>
<td>‘pumpkin’</td>
<td>harmônik-a</td>
</tr>
</tbody>
</table>

However, if one looks not at the location of accent, but at the extent of tone linking, we see that a simpler description of barytonic accent is that the last tone-linked syllable is the last syllable of the stem. These fuller representations make this plainer:

A single-tone representation of barytonic accent

\[
\begin{align*}
\text{H} & \quad \text{H} & \quad \text{H} & \quad \text{H} \\
\text{a. pȑst} & \quad \text{b. pȑst-a} & \quad \text{c. kukûruz} & \quad \text{d. kukûruz-a}
\end{align*}
\]

The correlation between stem size and accent shape is then due to the fact that tone can’t spread leftward in a monosyllabic stem, necessarily yielding falling accent (pȑsta). Thus, the single-tone representation of the pitch accents enables us to identify a single accentual class rather than two.

Oxytones exhibit somewhat more complex alternations, both within and across paradigms. Monosyllabic stems with no ending get falling accent (könj), but with an ending get rising accent (könja). Polysyllabic stems with no ending get penultimate rising accent (jùnäk), and with an ending get stem-final rising accent (junáka):
(26) Some nouns with oxytonic accent (Zec 1988:183-187)\(^{12}\)

<table>
<thead>
<tr>
<th>NOM</th>
<th>GEN</th>
<th>NOM</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>grč</td>
<td>grč-a</td>
<td>žen-a</td>
</tr>
<tr>
<td>kônj</td>
<td>kônj-a</td>
<td>káľ-a, káv-a</td>
</tr>
<tr>
<td>život</td>
<td>život-a</td>
<td>aždaj-a</td>
</tr>
<tr>
<td>jąglac</td>
<td>jąglac-a</td>
<td>paralēl-a</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>kráľj</td>
<td>kráľ-j-a</td>
<td>lík-a</td>
</tr>
<tr>
<td>dvôr</td>
<td>dvôr-a</td>
<td>tém-a</td>
</tr>
<tr>
<td>júnäk</td>
<td>júnäk-a</td>
<td>violín-a</td>
</tr>
<tr>
<td>hąjdůk</td>
<td>hąjdůk-a</td>
<td>apoték-a</td>
</tr>
</tbody>
</table>

As with barytones, reference to the last tone-linked syllable simplifies the description of the oxytonic paradigm. The last tone-linked syllable is the first syllable of an inflectional ending if there is one, and otherwise the stem-final syllable:

(27) A single-tone representation of oxytonic accent

\[
\begin{array}{cccc}
\text{H} & \text{H} & \text{H} & \text{H} \\
\end{array}
\]

\[
\begin{array}{cccc}
a. \text{kônj} & b. \text{kônj-a} & c. \text{júnäk} & d. \text{júnäk-a} \\
\end{array}
\]

That tone is located with respect to the boundary between stem and ending, rather than the end of the word, is shown by the fact that accent placement is identical across monosyllabic and disyllabic endings (Becker 2006, see 3.2.2):

(28) DAT.SG kônj-u júnäk-u žen-i violín-i

DAT.PL kônj-ima júnäc-ima žen-ama violín-ama

---

\(^{12}\) These data are divided into those with light stem-final syllables (a), and those with heavy stem-final syllables (b). In fact, there’s a correlation between stem shape and accent paradigm. Light-final stems are typically barytones, while heavy-final stems are typically oxytones. Light-final oxytones (život, živôta) are a small, closed class (Zec 1988). I’ll revisit this correlation in chapter 3, offering a reanalysis of rightward tone shift, which applies regularly to make heavy-final stems oxytones (see 3.3.6, 3.3.7).
This dissection of some common accentual paradigms, then, supports the claim that it is not the stressed syllable, but the last tone-linked syllable in surface forms that is most significant with respect to principles of accent determination. I will therefore adopt the essentials of Zec’s proposal that underlying tone is right-aligned in its stem. On the other hand, I don’t attempt to account for the deeper question of why underlying tone should be treated differently from default tone. For further analysis, and associated formal issues, see 2.4.5, 3.2.2, and 3.3.7.

2.3.7 Summary

In 2.3, I built on the broad description of Neo-Štokavian accent that was begun in 2.2, looking in more detail at the relationship between accent shape and distribution, and at what this could tell us about the more primitive representation of accent. I adopted Inkelas and Zec’s autosegmental, single-tone representation of accent, and their analysis of accent determination, showing that these account not only for the distribution of the falling and rising accents, but also for certain patterns in accentual paradigms, and in the accentuation of proclitic-host sequences. This analysis, in turn, provides the basis for my own analysis of accent determination in 2.4.

Last, this discussion yielded several useful diagnostics for proclisis. The analysis of accent determination that is developed in the rest of chapters 2 and 3 will serve to make these tests more explicit and useful. Subsequently, these and other generalizations over word prosody and accent are of central importance in chapters 4 and 5, which are largely concerned with discovering the prosodic representations of clitics.
2.4 An analysis of accent determination

2.4.1 Introduction

In this section, I establish the first part of an explicit, Optimality Theoretic (OT) account of accent determination. I’ll be concerned here with the more regular aspects of accent, in particular with default accent, tone spreading, and the shapes and locations of head feet. Some more complex issues are set aside until chapter 3. The resulting account refines the usefulness of accent as a diagnostic for clisis by embedding it within the broader analysis of word, phrase, and clitic prosody.

One of the first issues to be dealt with is the implementation of Inkelas and Zec’s derivational account in the non-derivational, OT framework used here. I approach this, first, by dividing the account into several generalizations, each of which is phrased in a non-derivational fashion. These generalizations concern default initial accent, leftward tone spread, and the relation between tone and prominence.

Then, following Zec (1999), I advance an account in which word prominence tends toward the left edge of the word, yielding default initial falling accent, while tone, when underlying, tends toward the right edges of morphological domains. The result is a tension between the prominence and tonal systems, mediated by constraints on their cooccurrence, that gives rise to leftward tone spread and rising accent.

Throughout, I compare this to the OT accounts of Zec (1999) and Becker (2006). While my analysis follows theirs on many points, I propose different treatments of some phenomena—in particular, of the foot inventory (2.4.4), of tone spread (2.4.6), and of the relation between tone and prominence (2.4.7), arguing for approaches that rely on more standard representations, or on more general constraint schemata.
The analysis in this chapter is simplified in part by the assumption that the tone-bearing unit is the syllable, though in fact I’ll eventually conclude, following Zec and Becker, that it’s best characterized as the mora. However, this emerges from the analysis in such a way that the proposals of this chapter don’t conflict with the larger analysis of accent that’s concluded in chapter 3. For the present, I avoid further discussion of this point by looking only at words with all light—that is, monomoraic—syllables.\textsuperscript{13}

2.4.2 A non-derivational approach to accent determination

The main issue confronting an OT approach to this problem is how to capture effects that the derivational approach models by rule ordering. The derivational account depends, first, on ordering tone linking before tone spreading and tone epenthesis. Second, its formalization of spreading includes reference to forms with unspread tone, which are intermediate between underlying and surface forms.

The Inkelas and Zec analysis is given OT treatments by Zec (1999) and Becker (2006). In Zec’s approach, the account’s derivational character is preserved in the form of a two-level grammar: a lexical grammar where underlying tone is linked, and a post-lexical grammar where tone spreads, or default tone is epenthesized.

By contrast, Becker proposes an OT account that refers only to underlying and surface forms, in part by restating spreading in terms of output conditions. I also favor such an account, though I differ from both Zec and Becker on several points that, I will argue, yield a better overall account of word accent and prosody.

\textsuperscript{13} Compare Langston (1997), who argues that the tone-bearing unit is the syllable.
I’ll begin by restating the analysis in terms of generalizations over surface and underlying forms. Some patterns are fairly simple and regular:

- **The tone-stress relation:** every prosodic word contains exactly one high tone, and the leftmost tone-linked syllable in the word is the main stressed syllable.

- **Default initial accent:** a prosodic word that contains only underlyingly toneless morphemes is pronounced with initial falling accent.

- **Leftward tone spread:** if tone is linked to a noninitial syllable in a prosodic word, then it’s also linked to exactly one other, adjacent syllable, yielding rising accent.

I’ll be most interested in these patterns—first, because they define clear criteria for identifying p-word edges, and second, because they’re regular, phonological patterns that make no reference to morphosyntactic constituents.

By contrast, the surface assignment of underlying tone is not obviously regular, and does interact with morphological structure. As I indicated in 2.3.6, some patterns suggest that underlying tone is right-aligned in some surface domain, based on which Zec (1988, 1999) develops a deterministic account that derives the complex array of surface accentual patterns from a few principles of tone-to-morpheme alignment.

Fortunately, surface tone assignment is less relevant to questions of clitic prosody, and is therefore not a focus here. For one thing, tone assignment has a morphological component in which prosodic clitics play no role, since clitics aren’t part of the morphological word. For another, tone that links to a noninitial syllable is, in any case, uninformative as to whether a preceding word is proclitic (see 2.3.5).
In this chapter, therefore, I adopt a provisional version of tone assignment in the form of a constraint that right-aligns underlying tone to a morphological stem, which suffices for the basic analysis of accent determination (see 2.4.5). However, I’ll revisit this problem and its attendant issues in chapter 3 (see 3.2.2, 3.3.7).

2.4.3 Default initial accent

I’ll address first the pattern of default initial accent, because this is explicable entirely in terms of well motivated constraints on words and feet, with a minimal role for constraints on tone. Following Zec and Becker, I deduce that default initial accent indicates that both p-words and feet are left-headed, and moreover, that feet are ideally binary trochees. I’ll express these generalizations by the following constraints:

(29) Prosodic words and feet are left-headed
   a. ALIGN-L(w,∆w): a prosodic word is left-aligned to its head foot.
   b. ALIGN-L(ft,∆ft): a foot is left-aligned to its head syllable.
   c. BIN(ft): a foot contains two syllables or two moras.

These alignment constraints draw on constraint schemata adopted in 1.3.5. I adapt the general BIN schema from McCarthy and Prince’s (1993a) FTBIN.

Taking the toneless word plȁninu ‘mountain (ACC)’ as an example, the following tableau shows that these constraints prefer a head foot that’s binary, trochaic, and left-aligned in its p-word (a). Candidates whose head feet are non-binary (b), iambic (c), or not left-aligned (d) are sub-optimal:
Constraints on word and foot prosody prefer initial accent

<table>
<thead>
<tr>
<th>planinu</th>
<th>BIN(ft)</th>
<th>ALIGN-L(ft, Δft)</th>
<th>ALIGN-L(w, Δw)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. → (plâni)nu</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. (plâninu)</td>
<td></td>
<td>*!</td>
<td></td>
</tr>
<tr>
<td>H</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. (plan)nu</td>
<td></td>
<td>*!</td>
<td></td>
</tr>
<tr>
<td>H</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. pla(ninu)</td>
<td></td>
<td></td>
<td>*!</td>
</tr>
</tbody>
</table>

I’ve also indicated here the linking of tone to stress. By the assumptions that the main stressed syllable must be linked to high tone, and that tone doesn’t spread rightward from a word-initial syllable, default word stress yields initial, falling accent. I’ll return to the relation between tone and prominence in 2.4.7.

2.4.4 Issues in footing

Several questions arise in connection to footing. These include whether syllables are ever unfooted, what foot shapes are attested, and among those, which are favored. I’ll propose, first, that feet conform to fairly standard trochaic shapes, being ideally two light syllables (’LL) or a single heavy syllable (’H), though they’re attested also in the shapes ’L and ’HL in some contexts (see below, 3.3.2). Second, footing is non-exhaustive. That is, p-words contain a single foot, and any remaining syllables are left unfooted.

The arguments for these claims are that they provide the most efficient account of several interrelated patterns in the structures of words, feet, syllables, moras, and tone,

---

14 Planina can have mobile accent: planina (NOM), plâninu (ACC), ü planinu ‘to mountain’—or oxytonic accent: planina, planinu (Benson; see 2.3.4). I treat it here as toneless, according to its mobile paradigm.
some of which aren’t fully explored until chapter 3. In the present chapter, I’ll focus on
the role of LL head feet in shaping the basic Neo-Štokavian accent system, leaving most
discussion of other foot shapes, and unfooted syllables, to the next chapter.

Nevertheless, I’ll introduce a couple of arguments at this point. The phenomena of
tone spread (see 2.4.6, 3.3) and function word promotion (see 4.4, 4.5) will indicate that
feet are strongly binary. This obtains, partly, from ranking $\text{BIN$(ft)$}$ over $\text{EXH(w,s)}$:

(31) $\text{EXH(w,s)}$: a prosodic word doesn’t directly parse a syllable.

By the ranking $\text{BIN$(ft)$}$ over $\text{EXH(w,s)}$, failing to foot a light syllable (a) is
preferred to building a ternary (b) or degenerate foot (c):

(32) Ternary and degenerate feet are generally banned

\[
\begin{array}{ccc}
\text{plȁni\acute{n}u} & \text{BIN$(ft)$} & \text{EXH(w,s)} \\
a. & \rightarrow \langle\text{plȁni\acute{n}u}\rangle & * \\
b. & \langle\text{plȁni\acute{n}u}\rangle & *! \\
c. & \langle\text{plȁni\acute{n}i}\rangle\langle\text{nu}\rangle & *!
\end{array}
\]

This is the first of several Exhaustivity constraints that play a role in the overall
analysis of word, phrase, and clitic prosody. A general finding of this study is that foot
binarity is prioritized over Exhaustivity at several levels, causing syllables to be parsed
not only by prosodic word, but also by phonological phrase (see 4.4.6).

One kind of non-canonical foot, that consisting of a single light syllable (L), is
found only in monomoraic words. That is, words containing a single, short nucleus, e.g.
sȁn ‘sleep’, čist ‘clean’, vȑt ‘garden’. Following Zec (1988), I assume that syllable nuclei,
but not codas, contribute to syllable weight. I propose to capture the fact that such words
still determine prosodic words by the constraint \( \text{WRAP}(\text{lex},w) \), which requires that every lexical word be contained inside some p-word (see 1.3.5):

\[
\begin{array}{c|c|c|c}
\text{san, H} & \text{WRAP}(\text{lex},w) & \text{BIN(ft)} \\
a. & (\langle \text{sān} \rangle) & * \\
b. & \text{san} & *!
\end{array}
\]

Although \( \text{ALIGN-L}(\text{lex},w) \), \( \text{ALIGN-R}(\text{lex},w) \), or \( \text{EXH}(P,s) \) would also get this result for this particular example, the analysis of function word promotion will indicate that \( \text{BIN(ft)} \) outranks each of these in one dialect or another (see 1.3.6, 4.4.6). Therefore, by my assumption that grammars are identical across dialects, except where there’s positive evidence that they differ, I conclude that \( \text{WRAP} \) is the right constraint here.

Contrary to my treatment of degenerate feet, Zec and Becker posit L feet where LL feet are possible, e.g. \( \langle \text{lā} \rangle \text{na ‘flax (GEN)} \rangle \), \( \text{ti}(\text{rā})(\text{ni}) \text{ja ‘tyranny} \rangle \) (Zec 1999:234, 254), \( \text{har}(\text{mō})(\text{ni}) \text{ka ‘accordion} \rangle \) (Becker 2006:8). For Zec, this is because a light syllable linked to tone is argued to constitute a well formed foot. For Becker, high tone can link only to head syllables, so that rising accent necessarily spans two feet.\(^{15,16}\)

These differences in footing across accounts come, ultimately, from different treatments of tone spread. Although I share the general assumption that spreading is motivated and constrained by a combination of constraints on footing and tone linking, I

\(^{15}\) Zec’s evidence for the claim that ‘L feet are well formed if toneful comes from two patterns in which toneless, monosyllabic stems are lengthened or shortened (1999:238-247). However, neither pattern is productive in the modern standards, and it’s unclear whether they are to be considered productive in Vukovian. See also 3.3.4-3.3.5 in this study for an alternative analysis of toneless stem shortening.

\(^{16}\) Becker’s assumption is expressed in the following constraint on high tone linking (2006:7):

(i) \( H: \Delta \text{F}: \) if there is a mora \( m \) such that \( m \) is a part of a High tone span, then \( m \) is dominated by the head syllable of a foot.
offer accounts of spreading (2.4.6) and tone-prominence relations (2.4.7) that, I argue, efficiently capture the mechanics of spreading without positing degenerate feet.

Last, regarding the non-exhaustivity of footing, the evidence for this comes from three points, which are discussed more fully in 3.4.5. First, there’s no secondary word stress. Second, the analysis of tone-prominence relations provides an explanation for why non-head feet are avoided, which is in order to avoid feet whose head syllables aren’t linked to high tone. Third, some observations on the licensing of nuclear length across dialects are most easily explained if words contain only a single foot.

2.4.5 Tone-to-stem alignment

Having addressed default accent in underlyingly toneless words, let’s now consider the more complex accentuation of underlyingly toneful words. In contrast to toneless words, toneful words can get accent on any but their final syllable. A full analysis of accent determination must therefore account for the principles that control the surface distribution of underlying tone.

I took the discussion of accent paradigms in 2.3.6 to indicate that, though noninitial tone is linked to two syllables, it’s the last tone-linked syllable that’s significant with respect to principles of tone assignment. Furthermore, these principles can refer both to a word’s morphological structure, and to its membership in particular accent paradigms. For the present, I’ll summarize these by the following, preliminary constraint:

(34) ALIGN-R(H,stem_H): high tone is right-aligned to an underlyingly toneful stem.
This constraint, adapted from Zec (1999), is intended to subsume whatever principles select the last surface syllable linked to high tone. As defined here, it’s active in toneful words, but is vacuously satisfied, and therefore inactive, in toneless words.

In fact, there’s somewhat more to this. I’ll therefore return to a discussion of the nature of this constraint in 3.2, after establishing the basic analysis of how it interacts with other aspects of accent determination.

An aspect of this approach that won’t be revised, however, is the abbreviation $stem_H$ for a toneful stem. The present constraint could be criticized on formal grounds, as mixing properties of markedness and faithfulness. It refers to underlying tonefulness, which is a privilege of faithfulness, but also expresses a condition on surface forms, which is a property of markedness. I won’t pursue this problem further, but see Becker (2006:15) for an account of this effect in terms of local constraint conjunction.

### 2.4.6 Leftward tone spread

Assuming that ALIGN-R($H, stem_H$) targets some surface syllable to be linked to tone, then other aspects of accent in underlyingly toneful words result from the more regular, and apparently entirely phonological phenomenon of leftward tone spread. We saw in 2.3 that spreading is responsible for the observations that noninitial accents are necessarily rising, and that rising accents can’t be final. Here, I’ll argue that spreading is, moreover, motivated by independently needed phonological constraints.

I’ll adopt roughly the same insight into tone spread as Zec and Becker. Assuming, first, that word stress is necessarily linked to high tone, the idea is that spreading is a
compromise between the anchoring of tone to some syllable, and some force that pulls word stress leftward. As a result, tone is stretched across two syllables.

I’ve proposed to represent the anchoring of tone by \textsc{Align-R}(H,stem_H). As for the leftward tendency of word stress, I follow Zec in attributing this to \textsc{Align-L}(w,\Delta w), which is also responsible for the pattern of default initial accent (see 2.4.3).

The following tableau illustrates how these constraints interact to yield spreading. Default accent (a) in mȁlina ‘raspberry’ is ruled out by \textsc{Align-R}(H,stem_H), which assigns tone to its stem-final syllable (\textipa{li}), whereas linking tone only to this syllable violates head foot alignment (b). Tone spreading, by contrast, satisfies both constraints (c):

\begin{align*}
\text{Leftward tone spread is motivated by head foot alignment} \\
\begin{array}{c|c|c}
\text{malin-a, } H & \text{ALIGN-R}(H,\text{stem}_H) & \text{ALIGN-L}(w,\Delta w) \\
\downarrow & \uparrow & \uparrow \\
\text{a. } \langle \text{mȁli} \rangle \text{na} & \text{H} & \!*! \\
\downarrow & \uparrow & \uparrow \\
\text{b. } \text{ma(li)na} & \text{H} & \!*! \\
\downarrow & \uparrow & \uparrow \\
\text{c. } \rightarrow \langle \text{mȁli} \rangle \text{na} & \end{array}
\end{align*}

An additional complication is introduced by words in which tone links to a third or later syllable, e.g. bâbètina, veličina. In such cases, tone still spreads by exactly one syllable, failing to reach the left edge of the word. This indicates, first, that some other principle restricts spreading to just one syllable, and second, that head foot alignment is able to motivate spreading even if it isn’t perfectly satisfied.
Regarding the first point, what restricts spreading to a single syllable? Or, to put this in non-derivational terms, why is surface tone linked to at most two adjacent syllables? Suppose that the disyllabic tone window derives from the premise that *high tone is permitted only inside the head foot*. Then since feet are restricted to two syllables by \( \text{BIN}(\text{ft}) \), high tone spans are similarly limited to two syllables.

Under this approach, tone assignment and foot binarity must outrank head foot alignment, as depicted in (36), so that head foot alignment can motivate tone spread only as far as allowed by these higher-ranked constraints. That is, spreading improves head foot alignment (a,b), but can’t spread tone over more than two syllables (c), or fail to link tone where designated by tone assignment (d):

### (36) Tone spread is restricted by tone assignment and foot binarity

<table>
<thead>
<tr>
<th>babetin-a, H</th>
<th>ALIGN-R(H,stem(_H))</th>
<th>BIN(\text{ft})</th>
<th>ALIGN-L(w,\Delta w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>a.</strong></td>
<td>babe〈tina〉</td>
<td></td>
<td></td>
</tr>
<tr>
<td>H</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>b.</strong></td>
<td>ba〈bēti〉na</td>
<td></td>
<td></td>
</tr>
<tr>
<td>H</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c.〈bābeti〉na</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>d.</strong></td>
<td>〈bābe〉tina</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

I’ve assumed that violations of head foot alignment are counted gradiently, in order to account for the fact that (b) beats (a). This is discussed further below.

This is the essence of my analysis of tone spread. Although in most aspects it’s adapted from previous accounts, I differ from others in supposing that tone is restricted to
the head foot, thereby connecting the disyllabic tone window to foot binarity. By way of comparison, Zec and Becker capture the restriction with additional constraints that apply specifically to tone, which in this account are unnecessary (see 2.4.7).

Now, an important feature of this account is that it relies on the premise that head foot alignment—ALIGN-L(w, Δw)—marks violations gradiently. That is, candidate outputs incur different numbers of violations based on how many syllables separate a head foot from the beginning of the word. This is a more explicit definition:

(37) ALIGN-L(w, Δw)/s: mark a violation for every syllable between the left edge of a prosodic word and the left edge of its head foot.

Head foot alignment must be gradient to account for the fact that noninitial tone always spreads leftward, no matter how late in the word it originates:

(38) Gradient alignment motivates spreading from any noninitial syllable

| a. → baðetina | ‘old woman’ | ALIGN-L(w, Δw)/s |
| b. babeðina | | **! |
| c. → satisfakcija | ‘satisfaction’ | ** |
| d. satisfakcija | | ***! |
| e. → onesposobiti | ‘incapacitate’ | *** |
| f. onesposobiti | | ****! |

Whereas these winning candidates spread tone leftward, yielding rising accent, the losers leave tone linked only to its assigned syllable, yielding falling accent. Crucially, while both winners and losers violate head foot alignment, the winners violate it less.

I therefore treat head foot alignment as a gradient constraint. Alternatively, we might posit a suite of categorical constraints like ALIGN-L(w, Δw)/s, ALIGN-L(w, Δw)/ss,
and so on, which mark at most one violation, based on misalignments of one syllable, two
syllables, etc. However, since these would presumably be infinite in number, yet ranked
identically, it seems expedient just to assume a single gradient constraint. But see
McCarthy (2003) for categorical alternatives to gradient alignment.\textsuperscript{17}

\textbf{2.4.7 The relation between tone and prominence}

My account of spreading also relies on the assumption that high tone is licensed
only in the head foot. Now I’ll cast this in terms of more precise constraints on the
relation between tone and prominence. Although I adapt ideas from previous approaches,
the present analysis and framework compel somewhat different constraints.

The premise that tone is bounded by the head foot amounts to three simpler
generalizations: that high tone is (i) necessarily linked to a main stressed syllable, and (ii)
tolerated on the weak syllable of a head foot, but (iii) barred outside the head foot.

I’ll articulate these generalizations with two kinds of constraints: positive
constraints that require that prosodic heads be linked to tone (a,b), and negative
constraints that forbid linking non-heads to tone (c,d):

\begin{enumerate}
  \item \(\Delta ft\text{-TO-H}\): the head syllable of a foot is linked to high tone.
  \item \(\Delta w\text{-TO-H}\): the head foot of a prosodic word is linked to high tone.
  \item *\(\Delta ft\text{-TO-H}\): an element that is contained in a foot, but is not contained in
    the foot’s head syllable, is not linked to high tone.
  \item *\(\Delta w\text{-TO-H}\): an element that is contained in a prosodic word, but is not contained
    in the prosodic word’s head foot, is not linked to high tone.
\end{enumerate}

\textsuperscript{17} McCarthy discusses categorical approaches to the one-foot-per-word effect, and to the prominence of the
leftmost or rightmost foot (2003:111-116). As far as I can tell, however, these don’t help with the present
problem, which is that the head foot isn’t just prominent, but is actively pulled leftward.
The role of the positive constraints $\Delta f_{\text{-TO-H}}$ and $\Delta w_{\text{-TO-H}}$ is to ensure that every p-word bears high tone on its stressed syllable, while the negative constraints $^*\Delta f_{\text{-TO-H}}$ and $^*\Delta w_{\text{-TO-H}}$ serve to restrict the distribution of tone within the word. In what follows, I’ll first show how these constraints get the desired effects, and then discuss their format and underlying assumptions.\(^{18}\)

One of the first problems confronting us is that, given these constraints, it isn’t immediately apparent whether the necessary association between high tone and word stress is driven by $\Delta f_{\text{-TO-H}}$ or $\Delta w_{\text{-TO-H}}$. At first, $\Delta w_{\text{-TO-H}}$ seems the right constraint, because it motivates exactly one high tone per word, which is what we find. $\Delta f_{\text{-TO-H}}$, by contrast, calls for tone on the head syllable of every foot in a word.\(^{19}\)

Nevertheless, I’ll argue that a couple of considerations eliminate this problem. One is that there are no non-head feet. That is, every prosodic word contains a single foot, which is also, by necessity, its head foot (see 3.4.5). The other is that, if there were non-head feet, the independently motivated $^*\Delta w_{\text{-TO-H}}$, appropriately ranked, would ensure that $\Delta f_{\text{-TO-H}}$ didn’t compel tone on their head syllables.

Even so, $\Delta f_{\text{-TO-H}}$ and $\Delta w_{\text{-TO-H}}$ still do roughly the same work. The deciding factor, in my view, is that $\Delta f_{\text{-TO-H}}$ is needed to motivate non-exhaustive footing, whereas no other phenomenon requires $\Delta w_{\text{-TO-H}}$. I therefore prefer $\Delta f_{\text{-TO-H}}$ on grounds of analytical economy, and $\Delta w_{\text{-TO-H}}$ plays no role in the account.

\(^{18}\) Alternatively, versions of Ito and Mester’s (1999) CRISP\textsuperscript{EDGE} schema could be used to capture the effects of $^*\Delta f_{\text{-TO-H}}$ and $^*\Delta w_{\text{-TO-H}}$.

\(^{19}\) A third alternative is a constraint that requires high tone on the most prominent syllable or mora in a p-word. In fact, Zec and Becker do just that. However, I seek here to adopt constraint schemata that are as restrictive as possible, favoring constraints that refer to only two prosodic levels. See below.
To begin with the role of tone-prominence constraints in default accent, I rank $\Delta ft$-TO-H over DEP(tone), which forbids epenthetic tone. This ensures that the main stressed syllable of every p-word bears high tone, even if tone must be epenthized:

\[(40)\] Underlyingly toneless words get epenthetic tone

<table>
<thead>
<tr>
<th>planinu</th>
<th>$\Delta ft$-TO-H</th>
<th>DEP(tone)</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>a.</td>
<td>$\langle$plâni$\rangle$nu</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>*!</td>
</tr>
<tr>
<td>b.</td>
<td>$\langle$plani$\rangle$nu</td>
<td></td>
</tr>
</tbody>
</table>

I know of no argument for ranking $\Delta ft$-TO-H and $^*$-$\Delta ft$-TO-H directly with each other, because they don’t conflict. Nevertheless, the next tableau shows that the negative constraint $^*$-$\Delta ft$-TO-H is active in preventing high tone on non-head syllables:

\[(41)\] High tone is avoided on unstressed syllables

<table>
<thead>
<tr>
<th>planinu</th>
<th>$\Delta ft$-TO-H</th>
<th>$^*$-$\Delta ft$-TO-H</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a.</td>
<td>$\langle$plâni$\rangle$nu</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>*!</td>
</tr>
<tr>
<td>b.</td>
<td>$\langle$plani$\rangle$nu</td>
<td></td>
</tr>
</tbody>
</table>

Yet $^*$-$\Delta ft$-TO-H is overruled when tone is noninitial. In this case, tone alignment and head foot alignment together force tone to spread across both syllables of the head foot. Otherwise, we get sub-optimal alignment of feet (b), or of tone (c):
(42) Tone on an unstressed syllable is tolerated in tone spreading

<table>
<thead>
<tr>
<th>babetin-a, H</th>
<th>ALIGN-R(H, stemH)</th>
<th>ALIGN-L(w, Δw)</th>
<th>*-Δft-TO-H</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>a. → ba(beti)na</td>
<td>*!</td>
<td></td>
<td></td>
</tr>
<tr>
<td>H</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>b. babe(tina)</td>
<td>*!</td>
<td></td>
<td></td>
</tr>
<tr>
<td>H</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>c. ⟨babe⟩tina</td>
<td>*</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The last generalization on the distribution of tone, that tone is forbidden outside the head foot, is enforced by *-Δw-TO-H. This constraint helps to restrict spreading, because spreading too far leftward results in tone outside the head foot:

(43) *-Δw-TO-H contains spreading within the head foot

<table>
<thead>
<tr>
<th>babetina, H</th>
<th>*-Δw-TO-H</th>
<th>ALIGN-L(w, Δw)</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>a. → ba(beti)na</td>
<td>*!</td>
<td></td>
</tr>
<tr>
<td>H</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>b. ⟨babe⟩tina</td>
<td>*!</td>
<td></td>
</tr>
</tbody>
</table>

Tableaux (41) through (43) show that we require both *-Δft-TO-H and *-Δw-TO-H in order to capture tonal behavior in falling and rising accent. First, these are ranked differently with respect to head foot alignment, representing the different markedness of two tone-prominence configurations. While tone is dispreferred but tolerated on the weak syllable of a foot, it’s completely forbidden outside the head foot.

Second, this interaction captures the contextual grammaticality of doubly linked tone—that is, that it’s grammatical only when tone must be noninitial in a prosodic word.
While singly linked (falling) accent is the unmarked case, doubly linked (rising) accent is an optimal resolution of tone alignment, foot alignment, and tone-prominence relations, compelled by the rightward alignment of underlying tone.

Nevertheless, some further words are in order regarding the forms of the tone-prominence constraints proposed here. These are motivated by two considerations, which are the analysis of accent determination on the one hand, and the goal of maintaining restrictive assumptions on the forms of constraints on the other. I’ll therefore defend the proposed constraint schemata according to both of these considerations.

Regarding the roles of the constraints in the analysis, the present account takes the view that the distribution of tone is determined by highly general principles on the linking of tone to prosodic heads, and by its subjugation to the size, shape, and location of head feet. This contrasts with the approaches of Zec and Becker, in which tone has more of a life of its own, being governed by more specific constraints on its distribution.

As in the present approach, Zec and Becker assume constraints that relate tone to the main stressed syllable of a prosodic word:

\[(44) \text{Constraints relating tone to word prominence} \]
\[a. \text{SF}O\text{OT}\text{SALIENCE: Head}_{Pr\text{wd}} \text{has to be associated with a High tone. (Zec 1999:251)} \]
\[b. \Delta_{mPWd:H}: \text{if there is a mora } m \text{ such that } m \text{ is dominated by the head syllable of a Prosodic word, then } m \text{ is part of a High tone span. (Becker 2006:13)} \]

On the other hand, they control spreading in part by constraints specific to tone:
(45) Constraints on the distribution of tone\textsuperscript{20}
  a. HLINK: a High may not be linked to more than two moras. (Zec 1999:252)
  b. SPANBIN: a High tone span must not be mono-moraic. (Becker 2006:7)

I favor the approach taken here for its greater generality. First, the system of constraints defined in (39) aren’t unique, but rely on reusable schemata. Second, these specify prosodic heads by reference to only two prosodic levels, those of a head itself (syllable, foot), and of its superordinate constituent (foot, word). Third, since spreading is delimited by feet, no further constraints on the extent of tone linking are necessary. Last, \( \Delta \text{ft-TO-H} \) will be shown to be active not only in compelling high tone on main stressed syllables, but also in prohibiting non-head feet (see 3.4.5).

As for the particular schemata proposed here, these adopt elements from de Lacy’s (1999, 2002) theory of tone-prominence relations, especially the premises that high tone is favored on prosodic heads, and disfavored on non-heads. However, I depart from de Lacy’s schemata in a couple of ways.

First, I employ the positive constraint \( \Delta \text{ft-TO-H} \). By contrast, de Lacy offers some typological arguments that tone-prominence constraints are only negative, forbidding, but not requiring, particular tonal configurations (1999:17-19, 59-60). However, an important difference between BCS and the languages that de Lacy surveys, which weakens those arguments, is that in BCS, not every syllable or mora is toneful.

Godjevac argues, based on measurements of the pitch slopes between pitch accents, and contra Inkelas and Zec (1988), that tones in BCS are sparsely specified (2000a:149-153). That is, syllables and moras not linked to accentual tone are simply

\textsuperscript{20} A difference is that, in Zec’s analysis, spreading is motivated by head foot alignment, as in the present account, but is restricted by HLINK. For Becker, it’s SPANBIN that motivates spreading.
toneless. Simply forbidding low tone, then, would have the effect of rendering words toneless, if no other constraint actively forced the presence of high tone.

My second departure from de Lacy’s theory is that my constraints refer to heads and non-heads of various levels, including head syllables and head feet, whereas de Lacy’s schemata are more constrained, designating only moras (1999) or only head syllables and non-head syllables of feet (2002).²¹

One support for tone-prominence constraints that refer to heads of various levels is that this uses the same notation for heads as in alignment constraints like ALIGN-L(\(w, \Delta w\)). Another argument comes from the requirements of the analysis itself, which shows that we require reference both to head syllables and to head feet, in order to differentiate the restriction on tone on weak syllables (*-\(\Delta ft\)-TO-H), from the stronger restriction on tone outside head feet (*-\(\Delta w\)-TO-H).

I conclude that the schemata for constraints on tone-prominence relations used here are supported both on analytical grounds, by the efficiency of the OT analysis, and on theoretical grounds, by the generality of the proposed relations.

2.4.8 Only internal proclitics get accent transfer

Now to return to the diagnostics for clisis that I proposed in 2.3.5, I claimed there that accent transfer differentiates internal proclitics (a) from all other prosodic clitics, including affixal proclitics (b), and free clitics (c):

---

²¹ De Lacy (1999:5-6): ‘For tone, the relevant unit of structure is the “Designated Terminal Element” (DTE), symbolized as \(\Delta\) (Liberman 1975, Liberman & Prince 1977):

\[
\text{DTE} = \text{def} \text{ The DTE of prosodic category } \alpha \text{ (i.e. } \Delta_\alpha\text{) is the terminal prosodic node that is: (i) a prosodic head and (ii) is associated to } \alpha \text{ by an unbroken chain of prosodic heads.}
\]

... A non-DTE of \(\alpha\) (\(-\Delta_\alpha\)) is every terminal node in \(\alpha\) that is not the DTE of \(\alpha\).’
(46) Accent transfers only to internal proclitics

a. internal proclitic   b. affixal proclitic   c. free clitic

\[
\begin{align*}
\text{H} & \quad \text{H} & \quad \text{H} \\
(\text{nà u})\text{licu} & \quad \text{na} \ (\text{ũl}i)\text{cu} & \quad \text{na} \ (\text{ũl}i)\text{cu}
\end{align*}
\]

 onto street

This depends on the premise—contrary to some proposals (Zec 1993, Selkirk 1995a, Schütze 1997)—that tone can’t spread across a p-word edge. This follows from my analyses of tone spread and tone-prominence relations, according to which tone is carried leftward by the head foot, and contained within it (see 2.4.6, 2.4.7). Then, by the basic principle that a foot can’t straddle a p-word edge, tone can’t spread across it either.

Those analyses are supported, in turn, by their reliance on more typical foot structures, and on more restrictive tone-prominence constraints, than in other accounts of Vukovian accent. I therefore take the present account of Vukovian accent determination to substantiate the claim that only internal proclitics get accent transfer, and will assume this in my investigations of clitic prosody in chapters 4 and 5.

The present account takes what we might call a variable structures approach, ascribing different accentuations to different p-structures, following Selkirk (1995a, 1996). Others take a variable processes approach, assuming similar p-structures across dialects, and ascribing different accentuations to differences in the rules or constraints that assign accent to these structures (Zec 1993, 1997, 2005, Schütze 1997).

For example, Zec proposes that prepositions are affixal proclitics across dialects, but that dialects differ with respect to whether accent can transfer to the outer word. In
transferring dialects, the constraint ALIGNPA aligns a pitch accent to the outer word, thus depriving the inner word of a prosodic head, in violation of HEADEDNESS:

(47) A variable processes approach to transfer (adapted from Zec 2005:100)

<table>
<thead>
<tr>
<th></th>
<th>ALIGNPA</th>
<th>HEADEDNESS</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>(û (kuči))</td>
<td>*</td>
</tr>
<tr>
<td>b.</td>
<td>(u (kuči))</td>
<td>*!</td>
</tr>
</tbody>
</table>

As for non-transferring dialects—that is, those where candidate (b) is optimal, as in standard Serbian—are derived in this approach from the opposite ranking.\(^{22}\)

The variable structures approach has the advantage that it relies on less theoretical machinery than variable processes approaches. I’ve accounted for spreading and transfer by drawing on general families of constraints on feet and words, and on the relation of prominent positions to tone. Variable processes accounts, by contrast, posit additional conditions specific to tone or accent (e.g. Schütze’s NOCROSSING), or must resort to undesirable assumptions, such as that head feet are degenerate, as in ((û)(kuči)).\(^{23}\)

On grounds of simplicity, then, the variable structures approach is to be preferred, to the extent that it can explain dialectal variation in function word phonology. This is in addition to the other merits of the analysis—in particular, that it unifies the distributions

\(^{22}\)The idea that Headedness might be a violable constraint is potentially problematic (see 1.2). From an analytical standpoint, this would force us to entertain a much broader range of possible p-structures. Typologically, it seems to predict the existence of languages without word prominence. For example, if both $\Delta w$-TO-H and $^*H$ outrank HEADEDNESS, then p-words could be headless to avoid high tone.

\(^{23}\)Zec’s constraint ALIGNPA is actually leftward head foot alignment, analogous to my ALIGN-L($w, \Delta w$):


In Zec’s analysis, ((û)(kuči)) is well formed both on foot form (see 2.4.4), and on head foot alignment, even though its head foot is degenerate, and fails to align with the inner prosodic word. I maintain that these assumptions on foot form and alignment are undesirable and unnecessary.

2.4.9 Summary

Building on several previous accounts, I’ve proposed a non-derivational analysis of accent determination in the Vukovian standard, according to which complex patterns in accent shape and distribution result from the interaction of general constraints on the linking of high tone, and on the structure of feet and prosodic words.

The constraint-based analysis is summarized in the following diagram:

(48) Ranking summary for the account of accent determination

According to the analysis, default initial accent in underlyingly toneless words is determined by the unmarked left-headedness of words and feet. With underlyingly toneful words, ALIGN-R(H,stem_H) assigns tone to some syllable in the word. If tone is noninitial, then head foot alignment pulls it leftward, but is constrained by tone alignment, foot binarity, and a prohibition on tone outside head feet.
This yields the complex surface properties of falling and rising accent. Falling accent is only initial because only initial tone can’t spread, while rising accent, which results from tone spread, is necessarily nonfinal. The disyllabic window that constrains tone spread derives from foot binarity, and the tying of tone to the head foot.

In chapter 3, I’ll propose arguments for ranking the constraints on head syllables \( L(\ft, \Delta \ft) \) and \( \Delta \ft-\to-H \) with the main constraint complex. Other, further issues to be dealt with in the next chapter are the nature of tone-to-stem alignment, the shape of the head foot in words with heavy syllables, and whether footing is exhaustive.

### 2.5 Conclusions

In this chapter, I described and analyzed the basic pattern of Neo-Štokavian accent. In spite of the variation attested across Neo-Štokavian varieties, I proposed that the received and modern standards are similar enough to warrant a unified analysis of their basic systems of word prosody and prominence, in service of the investigation of prosodic clisis undertaken in this dissertation. To this end, I offered a formal account of accent determination in the Vukovian standard, which will serve as a standard of comparison for prosodic phenomena across Neo-Štokavian.

Among the properties that I take to hold across Neo-Štokavian are that prosodic words tend toward left-headedness, and that feet are left-headed and binary. This common system of word prosody is supported by the significance of binary, trochaic feet in the analysis of rising accent (2.4.6), and by regularities across dialects in place of accent (2.2.6) and in function word promotion by size (see 4.4, 4.5).
On the other hand, we find considerable dialectal variation in how stress interacts with tone. Following Zec, I see the pitch accent systems of Vukovian and other conservative dialects as piggybacking on the more general system of word prominence, though I formalize the relevant tone-prominence relations somewhat differently.

Of more direct relevance to the goals of the dissertation is the explicit picture of word prosody developed here, based ultimately on the surface properties of accent. This supports the claim, for example, that accent transfer shows unambiguously that a function word is an internal proclitic (2.4.8). This and other such probes into clisis structures are the intended outcomes of this study of word accent.

Before proceeding to the more detailed discussion of prosodic clisis, however, I address in chapter 3 some further issues pertaining to the model of word prosody and accent proposed here. The application of this model to the investigation of clitic prosody is then taken up in chapter 4.
CHAPTER 3
FURTHER ISSUES IN WORD PROSODY AND ACCENT

3.1 Introduction

In chapter 2, I offered an account of accent determination in the Vukovian standard, as a step in achieving a general model of word prosody in BCS. However, some issues remain unresolved, yet are relevant either to substantiating that account, or to the investigation of prosodic clisis. These concern the surface assignment of underlying tone, foot shapes and exhaustivity of footing, and the distribution of nuclear length. In this chapter, I’ll attempt to resolve these issues.

I’ll begin in 3.2 by clarifying some of the issues connected to tone assignment. In contrast to epenthetic tone, which is always word-initial, we’ve seen that underlying tone tends toward the right edges of morphological domains. A more detailed look at Zec’s (1988, 1999) analysis of tone assignment across different classes of suffixes provides a framework for my own analysis of tonal phenomena in subsequent sections.

In 3.3, I seek to substantiate the inventory of foot shapes, which I claimed as an advantage of my account of accent. Based on several alternations involving accent and syllable weight, I advance a couple of proposals with significant consequences for foot shapes, tone assignment, and nuclear length contrasts. One is that the shape of the head foot is sometimes optimized by leaving a stem-final mora unsyllabified, and parsing it directly by prosodic word. This depends, in turn, on a reanalysis of tone assignment in terms of Becker’s (2006) proposal that high tone forms headed spans.
Then in 3.4, I take up the distribution and neutralization of nuclear length. In Vukovian, length is contrastive in accented and post-accentual nuclei, but pre-accentual nuclei are always short. I discuss a couple of approaches to this, and their consequences for the model of footing. I propose that pre-accentual syllables are shortened to improve the alignment of the head foot, and furthermore, that footing is non-exhaustive—that is, outside the head foot, syllables are unfooted and parsed directly by prosodic word. This analysis is supported by a comparison of length conditions in two dialects.

Last, in 3.5, I summarize the analysis of accent developed through chapters 2 and 3, highlighting those aspects that play a role in the analysis of clisis in later chapters.

3.2 Tone assignment

3.2.1 Introduction

In the account so far, I’ve represented the surface assignment of underlying tone by the constraint ALIGN-R(H,stem_H), which right-aligns tone with word stems. However, this is a less than satisfactory solution to this problem, both because the patterns in tone assignment identified by Zec (1988, 1999) reveal more complex interactions between morphological structure and the surface location of tone, and for formal reasons having to do with the question of what sorts of elements are being aligned.¹

I’ll begin by summarizing these problems in tone assignment, though they won’t be resolved in 3.2. Rather, these are bound up with the other issues to be discussed in this

chapter, including foot shapes and nuclear length, and the solution that I’ll eventually propose relies on this bigger picture.

### 3.2.2 Tone in morphological domains

In Zec (1999), surface tone is positioned by a set of constraints that right-align underlying tone within any of three morphological domains. The most deeply embedded domain, M1, contains the root and some derivational suffixes. M2 contains M1 plus other derivational suffixes. Last, the morphological word, or MW, adds inflection:

(1) \[ [[[\text{ROOT-DERIVATION}]_{M1} - \text{DERIVATION}]_{M2} - \text{INFLECTION}]_{MW} \]

Although there are also derivational prefixes, these aren’t addressed in the account.

Zec’s central claim is that underlying tone is right-aligned in the morphological constituent—M1, M2, or MW—where it originates. In words with multiple underlying tones, tone in M1 takes precedence, and all others are deleted. If there’s no M1 tone, then an M2 tone is pronounced if there is one, and otherwise an MW tone. If there’s no underlying tone, the word gets default (initial falling) accent.

The data in (2) illustrate the alignment of tone in M1, in words containing either the (underlyingly) toneless root /led-/ ‘ice’ or the toneful root /lan_H/- ‘flax’. I indicate underlying tone by a subscript H, and the right edges of M1, M2, and MW with brackets. I omit left brackets and domain labels to simplify these representations.

Example (a), with no underlying tone, gets default accent. By contrast, words that get tone from one or more M1 morphemes are pronounced with tone right-aligned in M1, regardless of whether tone comes from the root (b), an M1 suffix (c), or both (d):
(2) M1 tone is right-aligned within M1 (Zec 1999:231-232)

<table>
<thead>
<tr>
<th>toneless root</th>
<th>toneful root</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>H</td>
</tr>
<tr>
<td>a. lêd-en]a]</td>
<td>‘icy (FEM)’</td>
</tr>
<tr>
<td>b. lânH-en]a]</td>
<td>‘flaxen (FEM)’</td>
</tr>
<tr>
<td>H</td>
<td>H</td>
</tr>
<tr>
<td>c. led-ên-ijH]a]</td>
<td>‘icier (FEM)’</td>
</tr>
<tr>
<td>d. lanH-ên-ijH]a]</td>
<td>‘more flaxen (FEM)’</td>
</tr>
</tbody>
</table>

(In these examples, M1 and M2 are coextensive because these contain no M2 suffixes.)

Previously, I cited the observation that accent shape and placement are concisely described in terms of the last tone-linked syllable (see 2.3.6). In Zec’s account, this syllable is special by being rightmost in some morphological domain.

Other data support the precedence relation M1 over M2 over MW. A comparison among the examples in (3) shows that tone right-aligns with M2 only if it originates on an M2 suffix, and all M1 morphemes are toneless, as in (c). Furthermore, while M2 tone wins over MW tone (c), M1 tone wins over both M2 and MW tone (d):

(3) M1 over M2 over MW (Zec 1988:197, 204-205)

<table>
<thead>
<tr>
<th>toneless roots</th>
<th>toneful roots</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>H</td>
</tr>
<tr>
<td>a. dêver-ov]</td>
<td>‘brother-in-law’s’</td>
</tr>
<tr>
<td>b. jêlenH-ov]</td>
<td>‘deer’s’</td>
</tr>
<tr>
<td>H</td>
<td>H</td>
</tr>
<tr>
<td>c. vód-iH]aH]</td>
<td>‘water (DIM)’</td>
</tr>
<tr>
<td>d. màramH-iH]aH]</td>
<td>‘scarf (DIM)’</td>
</tr>
</tbody>
</table>

2 Benson reports a long second vowel in djêvêr, dêvêr, but Zec gives dêver, presumably reflecting a post-accidental shortening in her native variety. See 2.2.6, 3.4.6.
3 A better comparison might involve a disyllabic toneless root in place of vod- (c), both to emphasize the right-aligning of tone, and to provide a better analogy with other examples. However, I don’t know any such root that also occurs with the suffixes -ic-a, which derive feminine and diminutive feminine nouns.
Last, compare (c), where M2 takes precedence over MW, to vòda, vòdu ‘water (NOM, ACC)’, where the MW tone of the nominative ending -a surfaces because M2 is toneless: \textit{vòd}[[M2-a]]_{MW}. This is an example of ‘mobile accent’, where accent in toneless stems is controlled by the tonefulness of the ending (see 2.3.4).

Becker (2006:13) amends the account of MW tone, observing that, while surface tone can come from an MW suffix, such tone isn’t positioned with respect to MW, but to M2. That M2 is the pivot for MW tone is shown by the fact that the surface location of MW tone is identical across forms with monosyllabic and disyllabic MW endings—compare \textit{nòg}[^-a], \textit{nòg}[^-ama] ‘foot (NOM.SG, DAT.PL)’ (see 2.3.6).

### 3.2.3 What is aligned to what?

One problem in the implementation of this analysis is what to align to what. Is tone aligned directly to a morphological constituent, or is tone-morphology alignment mediated through other prosodic constituents? In Zec’s analysis, tone is linked to a mora, and the mora is aligned to M1, M2, or MW. However, it may be that this undesirably enriches the set of correspondences between prosodic and morphosyntactic elements.\(^4\)

In Becker’s analysis, high tone is interpreted as a tone span (McCarthy 2004) right-aligned to p-word, and p-word is right-aligned to M1. However, this has the possibly undesirable result of positing a p-word edge inside the M2 and MW constituents. In Becker’s view, MW corresponds to a minor phonological phrase (see 1.3).

\(^4\) Zec (1999): ‘ALIGN(M1-R,M1-R): the right edge of a mora associated with high tone introduced by an M1 element is aligned with the right edge of the M1 constituent.’
Although I’ll present yet another version of tone-to-stem alignment, I offer a solution to only half the problem. Following Becker, I’ll adopt the representation of tones as headed spans, proposing further that it’s tone heads, rather than the edges of spans, that are aligned to stems (see 3.3.7). However, I’m unable to improve on the claim that a phonological element (a tone head) is aligned to a morphological one (a stem).

As for the distinction among M1, M2, and MW, having addressed the relevance of these different morphological domains, I’ll return to referring to the stem to which tone is aligned simply as the ‘stem’, ignoring this distinction.

### 3.2.4 The representation of underlying tone

Apart from demonstrating that there’s a morphological component to accent place, Zec’s analysis of tone assignment also has consequences for the representation of underlying tone. This is that any putative linkings of tone to elements smaller than the morpheme are neutralized in surface forms. For example, the surface tone of $\text{lan}\text{-en-ija}$, underlyingly/[lan$_H$-en-ij$_H$$_M^1$-a]/ (see above), is plausibly the one introduced by the root $lan$-, or that of the suffix -$ij$, or a fusion of the two.

For this reason, Zec represents underlying tones as associated with some morpheme, but floating, as in (4)a. I’ll adopt the equivalent representations (b) and (c):

\[
\begin{align*}
\text{(4) Representations of floating underlying tone} \\
&\text{H} \\
&\text{a. } /jelen/ \quad \text{b. } /jelen, H/ \quad \text{c. } /jelen_H/ \quad \text{'deer'}
\end{align*}
\]

That is, underlyingly toneful morphemes seem, in a sense, to come with tone, but this tone can’t be shown to be linked underlyingly to any particular syllable or mora, its
surface linking being determined by reference to output structures. In other words, surface constraints neutralize any morpheme-internal tone linking.

3.2.5 Summary

In the preceding sections, I’ve identified some of the more complex issues in how underlying tone gets assigned to particular syllables or moras in surface forms. Although these issues won’t be resolved in this study, this discussion provides some context for understanding the role of tone assignment in my analyses of some other patterns in the interaction of tone and accent in 3.3, and of the licensing of nuclear length in 3.4.

3.3 Tone, feet, syllables, and moras

3.3.1 Introduction

A second outstanding problem has to do with foot shapes. In 2.4.4, I proposed that feet are limited to the shapes L, H, LL, and HL, with L only in monomoraic words. I claimed that the compliance of this foot inventory with general constraints on trochaic feet represents an advantage over the accounts of Zec (1999) and Becker (2006), which require that some polysyllabic words be parsed by L feet.

However, my analysis of spreading raises a problem for the proposed inventory. I’ve claimed that tone spreading is motivated and delimited by its relation to head feet. While ALIGN-R(H,stem_H) anchors tone at the right edge of some stem, ALIGN-L(w,Δw), pulls the head foot—and consequently tone as well—leftward by one syllable, regardless of whether the resulting disyllabic foot is a well formed trochee (see 2.4.6).
In words with only light syllables, this is unproblematic: spreading coincides with well formed LL feet. In words with heavy syllables, however, the analysis so far predicts the existence of trochaic head feet of the less plausible shapes HL, LH, and HH:

(5) The analysis of spreading predicts head feet of various shapes (to be revised)

<table>
<thead>
<tr>
<th></th>
<th>LL</th>
<th>HL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>⟨dôru⟩čak</td>
<td>‘breakfast’</td>
</tr>
<tr>
<td></td>
<td>go⟨vôri⟩ti</td>
<td>‘speak’</td>
</tr>
<tr>
<td>LH</td>
<td>⟨mlâdô⟩jka</td>
<td>‘young woman’</td>
</tr>
<tr>
<td>vi⟨šedne⟩vni</td>
<td>‘lasting several days’</td>
<td></td>
</tr>
<tr>
<td>HH</td>
<td>⟨pîtä⟩nje</td>
<td>‘question’</td>
</tr>
<tr>
<td>za⟨hvâlnost⟩</td>
<td>‘gratitude’</td>
<td></td>
</tr>
</tbody>
</table>

While HL at least preserves the relative prominence of the two parts of the trochee, LH goes against it, and the quadrimoraic sequence HH might be better parsed as two feet. Last, none of these is a canonical trochee—that is, either LL or H.

I’ll consider several solutions to this problem, which lead to an extensive discussion of the structures of feet, syllables, moras, and tone.

### 3.3.2 Moras can be unsyllabified to optimize foot shapes

One possibility is that footing is based on—in Hayes’s (1995) terms—syllabic trochees rather than moraic trochees. That is, trochees are optimally disyllabic, satisfying binarity at the syllable level regardless of syllable weight. According to this analysis, HL, LH, and HH feet are acceptable means of satisfying both rightward tone alignment and leftward head foot alignment. However, the phenomena to be discussed below will show that syllable weight is relevant to foot construction.
Another possibility is that, contrary to the present analysis, tone isn’t confined to the head foot, but can cross feet, as in Zec’s and Becker’s accounts. Then we might posit forms like \( (\text{pi}) (\text{ta}) \text{anje} \), with two well formed H trochees, as opposed to a single HH foot. A disadvantage of this approach is that it requires an additional, arbitrary constraint that specifies the extent of tone spread (see 2.4.7).

I support a third possibility, which maintains the premises that footing and accent are influenced by syllable weight, that tone is restricted to the head foot, and that feet are only of the shapes L (in monosyllables), H, LL, or HL. I claim that a disyllabic foot’s second syllable is always light, and that this is achieved, when necessary, by syllabifying only the first mora of a heavy nucleus, leaving the second mora to be parsed by p-word.

By this proposal, apparent *LH, *HH are really LL (a) and HL (b), respectively:

\[
\begin{array}{c}
\text{(6) Heavy nuclei are split to make a foot’s second syllable light} \\

\begin{array}{c}
\text{H} \\
\begin{array}{c}
\langle \text{s} \text{s} \rangle \\
\text{m m m m m}
\end{array}
\end{array}
\quad
\begin{array}{c}
\text{H} \\
\begin{array}{c}
\langle \text{s} \text{s} \rangle \\
\text{m m m m m}
\end{array}
\end{array}
\end{array}
\]

a. mlā dōj ka 

b. pi tā nje

In other words, I propose to distinguish between moras’ role in contributing to syllable weight, and their role in segment weight. In these representations, the unsyllabified moras are irrelevant to syllable weight, but still contribute to the heaviness of the nuclei with which they’re associated. As a result, the second syllables of the feet in these examples are light, so that foot well-formedness, and faithfulness to segment weight, are maintained at the expense of Exhaustivity.
Although this may seem a rather marked p-structure, on a broader view this is just another example of the violability of Exhaustivity, for which I find evidence at several prosodic levels (see 2.4, 3.4, 4.4). The idea that moras may be unsyllabified, and parsed directly by p-word, isn’t much different from the fairly standard view that syllables can be unfooted and parsed by p-word.\(^5\)

In fact, the non-syllabification hypothesis not only assumes more canonical foot shapes, it also provides explanations for some complex interactions between length and tone, in connection to the processes of toneless stem shortening, rightward tone shift, and pre-sonorant lengthening. In the discussion that follows, I’ll show that non-syllabification simplifies the analysis of these processes.

This account also calls into question the domains within which phonotactic constraints on onsets, nuclei, and codas are stated. I’ll assume that onsets and codas, like nuclei, are generally parsed by moras, and that it’s at this level where conditions on sonority sequencing, for example, apply. However, since this doesn’t seem to be crucial to the account, I’ll continue to indicate moraic associations to nuclei only.

### 3.3.3 An account of non-syllabification

Although the split-nucleus account isn’t yet corroborated, I anticipate the evidence by first discussing how split nuclei are derived by the grammar. This provides a framework in which to situate the arguments in favor of the account.

\(^5\) Mora extrametricality is also contemplated, though controversial, for the analysis of stress in Cairene Arabic (Hayes 1995:69). Another kind of nuclear splitting is reported for Tongan, where an LL trochee is achieved in V:CV-final words by dividing a vowel across two syllables: V⟨/V.CV.⟩ (Hayes 1995:148). Whereas in the present proposal I claim that BCS improves feet by failing to syllabify a mora, in violation of Exhaustivity, Tongan apparently prefers to improve feet by building a marked ambisyllabic segment.
I’ve proposed that apparent *LH, *HH feet are LL and HL, respectively, because the heavy nucleus that provides the foot’s second syllable is split. The first mora of the split nucleus is syllabified and footed normally, while its second mora is free—that is, unsyllabified, and parsed directly by p-word.

The analysis of nuclear splitting involves the following constraints:

(7) Constraints involved in nuclear splitting
   a. EXH(w,m): a prosodic word doesn’t directly parse a mora.
   b. MAX(mora): A mora in the input corresponds to a mora in the output.
   c. WEIGHT-TO-STRESS PRINCIPLE (WSP): heavy syllables are stressed.

The first two constraints are members of the EXHAUSTIVITY and MAX families. EXH(w,m) forbids free moras, while MAX(mora) forbids mora deletion—that is, shortening. WSP (Prince 1990) forbids heavy syllables that are unstressed, whether because they’re unfooted, or because they’re non-heads of feet.

Let’s start by considering the motivation for failing to syllabify a mora. The simplest condition that sets the avoided foot shapes *LH and *HH apart from L, H, LL, and HL is WSP: only the ungrammatical feet contain heavy, unstressed syllables. Ranking WSP over EXH(w,m), then, gets the result that footing only one mora of a heavy nucleus is preferred to building an *LH or *HH foot.

I illustrate this and some subsequent ranking arguments with comparative tableaus (Prince 2003). This tableau format indicates competition within pairs of candidates, rating them not by constraint violations (*), but by whether the relevant constraint favors the winner (W) or the loser (L) in each pairwise comparison. Here, for example, the
partially unsyllabified candidate wins because the constraint that favors it, WSP, outranks EXH(w,m), which favors the fully syllabified loser:

(8) An unsyllabified mora is preferred to a heavy non-head syllable

<table>
<thead>
<tr>
<th>jünäk, H ‘hero’</th>
<th>WSP</th>
<th>EXH(w,m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(s s)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>m m m</td>
<td></td>
<td></td>
</tr>
<tr>
<td>jü näk</td>
<td>jü näk</td>
<td></td>
</tr>
</tbody>
</table>

| H               |     |          |
| (s s)           |     |          |
| m m m           |     |          |
| jü näk          | jü näk |       |

A couple of other possibilities for satisfying WSP are ruled out by the constraints ALIGN-L(w,Δw)/s and MAX(mora). Ranking these above EXH(w,m) ensures that building a free mora is more harmonic than either deleting the troublesome mora (a), or failing to spread tone leftward as an alternative strategy for satisfying WSP (b):

(9) A free mora is preferred to shortening or poor head foot alignment

<table>
<thead>
<tr>
<th>jünäk, H</th>
<th>L(w,Δw)/s</th>
<th>MAX(mora)</th>
<th>EXH(w,m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(s s)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>m m m</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>jü näk</td>
<td>jü näk</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| H        |           |           |          |
| (s s)    |           |           |          |
| m m m    |           |           |          |
| jü näk   | jü näk    |           |          |

---

6 Actually, length in the second syllable of jünak is preserved, ultimately, by another faithfulness constraint (see 3.4.4). Nevertheless, other phenomena support the ranking of MAX(mora) over EXH(w,s) as well.
I now turn to some arguments in support of the nuclear splitting analysis. These come from certain complications in the interaction between nuclear length and tone.

### 3.3.4 Toneless stem shortening

Zec (1988, 1999) discusses several complications to the basic analysis of tone assignment and spreading. I'll address three of these here—toneless stem shortening, rightward tone shift, and pre-sonorant lengthening—showing that the split-nucleus model of footing provides a natural account of some interactions between length and tone that are associated with these processes. This, in turn, will favor an account of tone-to-stem alignment that answers some of the issues identified above. As this suggests, I interpret these patterns somewhat differently from Zec, though much of the data are taken from her work, supplemented by annotations for accent and length from Benson.⁷

One process that provides support for nuclear splitting is toneless stem shortening, whereby a toneless, monosyllabic, bimoraic stem becomes monomoraic when followed by a toneless M2 suffix (Zec 1999:238-240). The data in (a) are examples of toneless stem shortening preceding the suffixes -āsk and -ost, while other examples show that toneful (b) and polysyllabic (c) stems don’t shorten in this context:

(10) Toneless monosyllabic stems shorten before -āsk, -ost

<table>
<thead>
<tr>
<th>A. /mūž-/</th>
<th>mūž</th>
<th>‘man’</th>
<th>mūškī</th>
<th>(adj)</th>
</tr>
</thead>
<tbody>
<tr>
<td>/vrāg-/</td>
<td>vrāg</td>
<td>‘devil’</td>
<td>vrāškī</td>
<td>(adj)</td>
</tr>
<tr>
<td>/žīv-/</td>
<td>žīv</td>
<td>‘lively’</td>
<td>žīvōst</td>
<td>‘liveliness’</td>
</tr>
<tr>
<td>/mlād-/</td>
<td>mlād</td>
<td>‘young’</td>
<td>mlādōst</td>
<td>‘youth’</td>
</tr>
<tr>
<td>B. /vīn̥-/</td>
<td>víno</td>
<td>‘wine’</td>
<td>vīnskī</td>
<td>(adj)</td>
</tr>
<tr>
<td>/tājn̥-/</td>
<td>tājna</td>
<td>‘secret’</td>
<td>tājnōst</td>
<td>‘secrecy’</td>
</tr>
</tbody>
</table>

⁷ I take the term pre-sonorant lengthening from Zec (1988). The terms toneless stem shortening and rightward tone shift are coined here for ease of reference.
c. /kurjåk-/
kürijåk ‘wolf’
kürijåckå (adj)
/pospå-/
pöspåni ‘sleepy’
pöspåniost ‘sleepiness’

The short vowel of the suffix -ăsk is a jer. That is, a historically attested—and presumably still underlying—vowel that’s pronounced in surface forms only when followed by another jer in the same word. Zec’s account of shortening depends on the assumption that this jer is underlyingly present. Also crucial to Zec’s account, as we’ll see, is that the surface long vowels of -skå and -ost reflect nominative singular inflection, and are not properly part of the derivational suffixes -ăsk, -ost.³⁻⁸

3.3.5 An account of toneless stem shortening

Zec proposes that shortening is forced by a constraint that requires that M2 be a foot, and which applies at an intermediate, lexical level of the derivation, preceding inflection, jer deletion, and default accent. On this premise, together with a theory of footing, toneless stems like /mûž-/ and /žîv-/ can serve as the first halves of LL trochees by shortening (a), whereas toneful stems like /vînH-/ and /tåjnH-/ can’t, because their tonefulness at this level imposes a particular footing that precludes any other (b):

(11) Zec (1999): toneless stems are more freely footed at the lexical level

a. \([mûž]_{M1-}âsk\) \(\rightarrow\) \([mûž-âsk]\)_{M2} \quad [žîv]_{M1-}ost\) \(\rightarrow\) \([žîv-ost]\)_{M2}

b. \([vînH]_{M1-}âsk\) \(\rightarrow\) \([vî/n-âsk]\)_{M2} \quad [tåjnH]_{M1-}ost\) \(\rightarrow\) \([tåj/n-ost]\)_{M2}

³ In paradigms like müșkå, müșkåga ‘masculine (NOM, GEN)’, -î is the entire nominative singular ending. But in žîvöst, žîvosti ‘liveliness (NOM, GEN)’, the nominative singular is marked only by length on the o.
The footings in (b) are dictated by the claims that tone is final in M2 at this level, and that a light syllable can form an L foot on its own if it’s linked to tone (Zec 1999:237).

Alternatively, suppose that one mora of the second heavy nucleus in words like /mūš-kī/, /žīv-ōst/ is left unsyllabified in order to avoid an unstressed heavy syllable. Then shortening of the root vowel can be seen as enabling the building of a single, well formed LL head foot, leaving no unfooted syllables:

(12) Shortening eliminates unfooted syllables

Thus, the non-syllabification analysis makes it possible to state this requirement over surface forms, and without the premise that L is a well formed foot.

On the other hand, a potential problem with this analysis is that there are other non-syllabifications that can achieve an LL trochee, and without deleting a mora. Why not avoid shortening altogether by splitting both nuclei of muški, creating two free moras either at both edges of the word (a), or at the right edges of both syllables (b)?

(13) Some problematic non-syllabifications
In fact, these alternatives are favored over the shortened winner mūškī by the proposed ranking $\text{MAX}(\text{mora}) \gg \text{EXH}(w,m)$, which prefers mora non-syllabification to deletion (see 3.3.3). However, they can be ruled out by other principles. Parse (a), for example, is marked according to proposals that both onset and nucleus are parsed by the same, initial mora in a syllable (Hyman 1985, Zec 1988, Ito 1989, Katada 1990).

As for (b), this is deprecated by the poorly formed internal structure of the foot itself, which directly parses a medial free mora, violating $\text{EXH}(\text{foot,mora})$. Alternatively, the relevant principle might be some version of the Peripherality Condition (Harris 1983), which allows extrametrical elements only at the edges of higher constituents.

Yet another strategy that we might consider to improve the surface footing of toneless HH words, without resorting to shortening, is to parse both nuclei as heavy syllables, and each of these as a well formed H foot, e.g. $\langle \text{mūš} \rangle \langle \text{kī} \rangle$. This analysis is ruled out by the discussion in 3.4.5, where I argue that there are no non-head feet.

Last, this still leaves the question of why toneful stems like vīnskī, tájnōst don’t shorten (see Zec 1999 for further discussion). However, while this question is important, it doesn’t affect the point that the split-nucleus model of footing provides a plausible, surface-oriented account of the motivation for shortening in toneless stems.

### 3.3.6 Rightward tone shift

Another pattern that provides support for nuclear splitting is rightward tone shift, which is a principled exception to normal tone assignment. We’ve seen that in toneful stems, the last tone-linked syllable is regularly the stem-final syllable. I’ll call this
‘normal’ tone assignment. In stems whose final syllable is heavy, by contrast, tone regularly shifts one syllable further to the right than in normal assignment.

The following examples illustrate this effect by comparing the accentuation of light-final versus heavy-final stems, in both the M1 and M2 domains. First, although tone from an M1 stem is normally right-aligned in M1 (a), it appears further to the right when the M1-final syllable is heavy (b). Likewise, when M1 is toneless, M2 tone is normally right-aligned in M2 (c), but shifts rightward if the M2-final syllable is heavy (d):

(14) Rightward tone shift (Zec 1988:199-204, Benson)\(^9\)

<table>
<thead>
<tr>
<th>M1 tone</th>
<th>M2 tone</th>
</tr>
</thead>
<tbody>
<tr>
<td>H [\hH{\hH_1\hH_{-\hH\hH}}] [\hH_{\hH_1\hH_{-\hH\hH}}] [\hH_{\hH_1\hH_{-\hH\hH}}]</td>
<td>H</td>
</tr>
<tr>
<td>a. \hH_{\hH_1\hH_{-\hH\hH}}] ‘deer’s’</td>
<td>c. \hH_{\hH_1\hH_{-\hH\hH}}] ‘little boat (NOM)’</td>
</tr>
<tr>
<td>H [\hH_{\hH_1\hH_{-\hH\hH}}] [\hH_{\hH_1\hH_{-\hH\hH}}] [\hH_{\hH_1\hH_{-\hH\hH}}]</td>
<td>H</td>
</tr>
<tr>
<td>b. \hH_{\hH_1\hH_{-\hH\hH}}] ‘general’s’</td>
<td>d. \hH_{\hH_1\hH_{-\hH\hH}}] ‘sailor (GEN)’</td>
</tr>
</tbody>
</table>

The shifted examples (b,d) also show that tone shifts rightward even if this right-aligns tone with an underlyingly toneless morpheme (\(-ov ‘POSS’, -a ‘MASC.GEN.SG’\)).

Zec observes that this effect also explains a gap in the inventory of barytonic and oxytonic stems—that is, stems whose last tone-linked syllable is their stem-final syllable, versus an ending-initial syllable, respectively (see 2.3). Although one finds both oxytones whose stem-final syllable is light (c), and those whose stem-final syllable is heavy (d), barytones only have light stem-final syllables (a,b):

\(^9\) I’ve added \textit{brodica} from Benson to round out the comparison; the other examples are from Zec. However, the words \textit{brodica} and \textit{brodara} aren’t a perfect minimal pair, because their final \textit{as} are different: toneful \textit{-a ‘FEM.NOM.SG’} versus toneless \textit{-a ‘MASC.GEN.SG’}, respectively.
(15) Rightward tone shift eliminates heavy-final barytones

<table>
<thead>
<tr>
<th>barytones</th>
<th>oxytones</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>H</td>
</tr>
<tr>
<td>a. livad-a ‘meadow’</td>
<td>c. teras-a ‘terrace’</td>
</tr>
<tr>
<td>H</td>
<td>H</td>
</tr>
<tr>
<td>b. *galam-a</td>
<td>d. galam-a ‘noise’</td>
</tr>
</tbody>
</table>

The absence of heavy-final barytones is explained by tone shift: any potential barytone with a heavy stem-final syllable is pronounced instead as an oxytone.

In monosyllabic stems, tone shift has the effect of turning long falling accent into long rising. Whereas light monosyllabic stems can have falling or rising accent (a,c), tone can’t right-align in heavy monosyllabic stems, but shifts, becoming rising accent (b,d):

(16) Rightward tone shift eliminates barytones with long falling accent

<table>
<thead>
<tr>
<th>barytones</th>
<th>oxytones</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>H</td>
</tr>
<tr>
<td>a. sum-a ‘forest’</td>
<td>c. par-a ‘coin’</td>
</tr>
<tr>
<td>H</td>
<td>H</td>
</tr>
<tr>
<td>b. *rek-a</td>
<td>d. rek-a ‘river’</td>
</tr>
</tbody>
</table>

It’s for this reason that I refer to this alternation as tone shift, as opposed to accent shift. The neutralization to rising accent in heavy monosyllabic stems (b,d) affects not the location of accent, but rather the extent of tone linking. This fact, moreover, is made apparent by the single tone representation of accent adopted in 2.3.3.

To summarize, rightward shift is conditioned by a stem-final heavy syllable, overrules normal tone assignment, and has neutralizing effects on both place and shape of
accent. Also, it bears repeating that both normal tone assignment and rightward tone shift apply only in toneful words. Toneless words get default accent regardless of the weight of their stem-final syllables, or of their morphological structure (see 2.3, 2.4):

(17) Only toneful words undergo tone-to-stem alignment and rightward tone shift

<table>
<thead>
<tr>
<th>toneful words</th>
<th>toneless words</th>
</tr>
</thead>
<tbody>
<tr>
<td>rék-a</td>
<td>mór-e</td>
</tr>
<tr>
<td>galárn-a</td>
<td>mēs-o</td>
</tr>
<tr>
<td>rük-a</td>
<td>rük-u</td>
</tr>
<tr>
<td>grád-u</td>
<td>grād-a</td>
</tr>
<tr>
<td>junák-a</td>
<td>mrāk-a</td>
</tr>
<tr>
<td>‘river’</td>
<td>‘sea’</td>
</tr>
<tr>
<td>‘noise’</td>
<td>‘meat’</td>
</tr>
<tr>
<td>‘hand’</td>
<td>‘hand (ACC)’</td>
</tr>
<tr>
<td>‘city (LOC)’</td>
<td>‘city (GEN)’</td>
</tr>
<tr>
<td>‘hero (GEN)’</td>
<td>‘gloom (GEN)’</td>
</tr>
</tbody>
</table>

3.3.7 An account of rightward tone shift

I’ll argue that rightward tone shift both supports the existence of unsyllabified moras, and provides further insights into tone alignment. The proposal, in brief, is that tone shifts rightward in order to improve the alignment of tone with morphological stems. Besides free moras, the key premise of the proposal is that high tone forms headed spans, and that it’s tone heads, rather than tone spans, that are aligned to stems.

The following paradigm will serve as a useful tool for discussion. The nouns jelen and junak differ prosodically only in that their second syllables are light and heavy, respectively. As a result, the tone of jelen is consistently right-aligned with its stem, while junak undergoes rightward tone shift when it takes an ending,

(18) jelen ‘deer’   júnák ‘hero’
    jelen-a ‘deer (GEN)’  júnák-a ‘hero (GEN)’
Why does tone shift rightward in junaka, violating normal tone assignment? One possibility is that this avoids a free mora. In my analysis of splitting, I claimed that the final mora of jünāk is left unsyllabified in order to eliminate a heavy unstressed syllable. That is: \( \langle jùnā \rangle ^a k > ^* \langle jùnāk \rangle \) (writing unsyllabified moras as superscripts). Perhaps tone shifts in ju(nāka) as a way of avoiding this fate—that is: \(^* \langle jùnā \rangle ^a k a\).

However, I also argued that EXH \((w,m)\) is ranked below head foot alignment, since free moras are created by leftward tone spread, e.g. \( \langle jùnā \rangle ^a k > ^* jù\langle nāk \rangle \) (see above). Avoidance of free moras, then, isn’t sufficient motivation to shift tone rightward.

Another possibility is that rightward shift improves tone-to-stem alignment, which does outrank head foot alignment (see 2.4). The idea is that, while Exhaustivity alone can’t motivate rightward shift, the free mora that would result from the failure to shift prevents the proper alignment of tone to its stem, as in the following loser. Then high-ranked ALIGN-R \((H,\text{stem}_h)\) intervenes to favor rightward shift:

(19) Does rightward tone shift improve tone-to-stem alignment? (to be revised)

\[
\begin{array}{cccc}
\text{junāk}_h-a & \text{R}(H,\text{stem}) & \text{L}(w,\Delta w) & \text{EXH}(w,m) \\
\text{H} & \text{H} & \text{s} & \text{s} & \text{s} & \text{s} & \text{m} & \text{m} & \text{m} & \text{m} \\
\text{m} & \text{m} & \text{m} & \text{m} & \text{m} & \text{m} & \text{m} & \text{m} & \text{m} & \text{m} \\
\text{ju} & \text{nā} & \text{k-a} & \text{> ju} & \text{nā} & \text{k-a} & \text{W (?)} & \text{L} & \text{W}
\end{array}
\]

The problem with this explanation is that, at first appearances, rightward shift doesn’t clearly improve tone-to-stem alignment. Whereas the losing candidate fails to get
tone on the final mora of its stem, the winner has tone on a non-stem mora. Both candidates seem to be off by a mora.

I propose that the solution is to redefine tone-to-stem alignment, in part by revising some of my assumptions. First, I adopt the view that degrees of tone alignment are significant at the level of the mora (Inkelas and Zec 1988, Zec 1988). Second, I adopt an insight from Becker (2006), that high tone isn’t a homogeneous autosegment, but forms internally headed spans. Combining these notions, I claim that tone alignment consists in aligning some mora, which is the head of a tone span, to a stem.

This proposal involves a constraint on the identity of tone heads (a), as well as a redefinition of tone-to-stem alignment (b):

(20) Constraints on high tone span heads

a. \( \Delta H=\Delta s \): the head of a high tone span is the head mora of a syllable.

b. ALIGN-R(\( \Delta H, stem_H \))/m: mark a violation for every mora between the right edge of the head of a high tone span and the right edge of an underlyingly toneful stem.

The idea that tones have the structure of headed spans is one example of a more general proposal embodied in Span Theory (McCarthy 2004): that all processes involving spreading across segments, whether of segmental features or of tone, form headed spans. However, I depart from that framework in taking the head of a high tone span to be, not a segment, but a prosodic constituent—specifically, the head mora of some syllable. I justify this by the fact that it’s crucial to the account of tone shift (see below).

\footnote{These two constraints essentially recapitulate Becker’s constraints \( \Delta H: \Delta \sigma G \) and \( \text{ALIGNR}_R(H, PWd) \), respectively (2006:7-8). In contrast to my approach, however, Becker proposes that tone spans are always right-headed, and that tone heads are aligned to p-words, as opposed to stems.}
The latter constraint in (20), ALIGN-R(ΔH,stem_H)/m, differs from the earlier ALIGN-R(H,stem_H) in two ways. First, it cares only about the alignment of the head of a tone span, rather than the entire span. Second, it’s gradient, assigning a violation for every mora that intervenes between the right edges of its two arguments. Actually, while it’s necessary to specify a violation index for this constraint, it need not be gradient, because it’s never violated by more than a single mora (see below). I employ a gradient constraint for the sake of brevity, rather than introduce an additional constraint to rule out misalignments of more than one mora (see 2.4.7).

The following tableaus show how these constraints account for rightward tone shift. Here and below, I indicate tone heads both by circling them, and by placing the \( H \) that represents high tone directly over them. First, consider normal tone assignment in the final-light stem /jelen-/ Here, there’s no reason to shift tone further right than the edge of the stem, because tone-to-stem alignment is perfectly satisfied. Lower-ranking head foot alignment is therefore permitted to spread tone leftward:

(21) Normal tone assignment in a final-light stem

<table>
<thead>
<tr>
<th>jelen_H-a</th>
<th>R(ΔH,stem)/m</th>
<th>L(w,Δw)</th>
</tr>
</thead>
</table>
| \( \begin{array}{cc}
H & H \\
(\{s\} \ s) & (\{s\} \ s) \\
m & m \\
jë \ le n-a > jë \ le n-a \\
\end{array} \) |

Recall that the ranking of tone alignment over head foot alignment was established in 2.4. Although tone alignment has been redefined, we’ll see that that argument holds.
Some further remarks are in order regarding these representations. For one, as the preceding tableau indicates, I assume that tone spans can be left-headed or right-headed, as required by tone head alignment. Or, in OT terms, any constraints concerned with the headedness of tone spans are ranked below \( R(\Delta H,\text{stem}) \).

This also recalls one of several difficult issues in tone assignment, which is: what’s aligned to what? Although I’m now counting tone alignment in terms of moras, rather than syllables, I maintain the assumption that tones aren’t aligned directly to stems, but to prosodic constituents linked to segments (see 2.4). With respect to /jelen-a/, then, \( R(\Delta H,\text{stem})/m \) requires that the head of tone be aligned to the mora linked to the second /e/. In other words, non-moraic segments like /n/ don’t count. We’ll see that this is borne out by the interaction between tone shift and pre-sonorant lengthening.

Now consider tone alignment in the heavy-final stem /junāk-/. In this case, it isn’t possible to satisfy both rightward tone alignment and leftward foot alignment. If tone spreads leftward, making the stem-final syllable unstressed, then the stem-final mora is necessarily unsyllabified, and can’t be a tone head. To make the stem-final mora a viable tone head, the entire tone span must shift rightward:

(22) Rightward tone shift preserves tone-to-stem alignment

\[
\begin{array}{c|c|c}
\text{junāk}_H-a & \text{H} & \text{H} \\
\text{s s s} & \text{s} & \text{s} \\
\text{m m m} & \text{m} & \text{m} \\
\text{ju nā k-a} & \text{ju nā k-a} & \text{W!} & \text{L} \\
\end{array}
\]
It’s here that the non-syllabification of moras plays a crucial role. If free moras weren’t allowed, then both tone and foot alignment could be satisfied in heavy-final stems, at the expense of WSP. The fact that this is ruled out shows that WSP, which motivates splitting by outranking ExH(w,m), outranks L(w,Δw) too:

(23) Rightward tone shift can’t be avoided by creating a heavy unstressed syllable

\[
\begin{array}{c|c|c|c}
\text{junāk}_H-a & \text{WSP} & R(\Delta H,\text{stem})/m & L(w,\Delta w) \\
H & W! & \text{L} \\
\text{s} & \text{s} & \text{s} & \text{s} \\
\text{m} & \text{m} & \text{m} & \text{m} \\
\text{ju} & \text{nā} & \text{k-a} & \text{jū} & \text{nā} & \text{k-a}
\end{array}
\]

The only contexts in which tone alignment is violated are those where there’s no post-stem syllable for tone to shift to, as in unsuffixed /junāk-∅/. This prevents perfect tone alignment because preserving the second mora of a heavy nucleus requires stressing that nucleus, and if the stem-final nucleus is stressed, then it forms a monosyllabic foot, and feet are left-headed, so that this syllable must be left-headed too, with the result that making the stem-final mora a tone head violates high-ranking ΔH=Δs:

(24) Tone is misaligned only when a stem is word-final

\[
\begin{array}{c|c|c|c}
\text{junāk}_H & \Delta H=\Delta s & R(\Delta H,\text{stem})/m \\
H & W! & \text{L} \\
\text{s} & \text{s} & \text{s} & \text{s} \\
\text{m} & \text{m} & \text{m} & \text{m} \\
\text{ju} & \text{nāk} & \text{jū} & \text{nāk}
\end{array}
\]
Put another way, tone can’t be perfectly aligned because there’s no available post-stem syllable for tone to shift to. As a result, head foot alignment is permitted to spread tone leftward instead, just as in final-light stems.

From this we may also conclude that the requirement that feet be left-headed also outranks tone alignment:

(25) Foot left-headedness outranks tone head alignment

\[
\begin{array}{c|c|c}
\text{junāk}_H & \text{L(ft,Δft)} & \text{R(ΔH,stem)/m} \\
H & H & \\
\langle s \ s \rangle & \langle s \ s \rangle & \\
mm & mm & m \\
junāk & junāk & \\
\end{array}
\]

To summarize the analysis, a stem-final heavy nucleus causes tone and accent to appear one syllable further to the right than in final-light stems, in order to achieve perfect alignment of a word’s high tone head with its stem. This is because tone is perfectly aligned in the stem only if the stem-final mora is syllabified, which is possible only if the syllable is stressed, which is possible only if the whole tone-accent-foot complex ‘shifts’ rightward. This result obtains from the interaction of constraints on foot shapes, tone-to-stem alignment, and tone-prominence relations.

Relevant to our purposes, the analysis of rightward tone shift has refined our definition of tone-to-stem alignment, and supports my contention that some moras are left unsyllabified in order to optimize foot shapes.\(^{11}\)

\(^{11}\) In Zec’s analysis, by comparison, rightward shift is an elsewhere effect: tone shifts rightward because it \textit{can’t} right align within its stem, so it aligns with the next stem instead. There are two objections to this
3.3.8 Pre-sonorant lengthening

The last alternation that I’ll discuss in connection with footing is pre-sonorant lengthening. Its relevance to footing, and to the other prosodic issues that concern this chapter, is that it supports the preceding analysis of rightward tone shift, which, in turn, supports my claims concerning unsyllabified moras, foot shapes, and tone-to-stem alignment. In this way, the details and analysis of pre-sonorant lengthening substantiate the larger picture of word prosody and accent being developed here.

There’s a class of words with heavy-final stems that, at first glance, seem to represent counterexamples to rightward tone shift. The words maslinka and mladojka, for example, bear initial rising accent, which shows both that they’re underlyingly toneful, and that the stem within which tone is assigned includes their second syllable. Yet their heavy stem-final syllables don’t condition rightward shift:

(26) Some exceptions to rightward tone shift

\[
\begin{align*}
\text{maslinka} & \quad *\text{maslínka} \quad \text{‘olive’} \\
\text{mladójka} & \quad *\text{mladójka} \quad \text{‘young woman’}
\end{align*}
\]


Such exceptions aren’t random. Rather, all such cases that I’m aware of have in common that the length in their stem-final nucleus isn’t underlying, but derived by pre-sonorant lengthening. The question is why such lengthening fails to trigger tone shift. I’ll argue that the analysis of tone shift proposed above predicts this result.

---

approach. First, tone only shifts one mora rightward, even with disyllabic endings (see 3.2.2). Second, in Zec’s analysis, this aligns tone with a monomoraic foot, an undesirable structure (see 2.4.4).
To see this, let’s take a further look at pre-sonorant lengthening. Like toneless stem shortening, this alternation involves jer vowels, and is partly morphologically conditioned. As described and analyzed by Zec (1988:151-160), pre-sonorant lengthening is triggered by certain jer-ful derivational suffixes:

(27) Some suffixes that trigger pre-sonorant lengthening

<table>
<thead>
<tr>
<th>Suffix</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>/-ǎn/</td>
<td>forms adjectives</td>
</tr>
<tr>
<td>/-āč/</td>
<td>forms masculine nouns</td>
</tr>
<tr>
<td>/-āk-a/</td>
<td>forms feminine nouns</td>
</tr>
<tr>
<td>/-āstv-o/</td>
<td>forms neuter nouns</td>
</tr>
</tbody>
</table>

As elsewhere, I follow Zec in writing underlying jers as ā. The endings -a and -o are inflectional suffixes that follow the derivational suffixes in question.

The following data exemplify lengthening with -ǎn and -āk-a, showing that these suffixes have the effect of lengthening the final syllable of their stem:

(28) Pre-sonorant lengthening with -ǎn and -āk-a (Zec 1988:152-154, Benson)

<table>
<thead>
<tr>
<th>Stems</th>
<th>Lengthened Stems</th>
</tr>
</thead>
<tbody>
<tr>
<td>sīl-a</td>
<td>sīl-an ‘power’</td>
</tr>
<tr>
<td>ētrrov</td>
<td>ētrōv-an ‘poison’</td>
</tr>
<tr>
<td>ēdmor</td>
<td>ēdmōr-an ‘rest’</td>
</tr>
<tr>
<td>žēn-a</td>
<td>žēn-ka ‘woman’</td>
</tr>
<tr>
<td>slȁm-a</td>
<td>slȁm-ka ‘straw’</td>
</tr>
<tr>
<td>ělov-o</td>
<td>ělov-ka ‘lead’</td>
</tr>
<tr>
<td>ołōv-ka</td>
<td>‘pencil’</td>
</tr>
</tbody>
</table>

Significantly, none of these lengthened stems undergoes rightward tone shift. For example, ołōv-ka, *ołōv-ka exhibits unshifted rising accent in spite of its heavy stem-final syllable, mirroring młądōj-ka, màślın-ka in (26). Other lengthened stems bear falling accent as if they were underlingly toneless (ōtrōv-an, žēnka), yet the rising

---

12 The examples in this section on pre-sonorant lengthening are mostly from Zec, with a few from Benson. All notations for accent and length are from Benson.
accents on their underived forms show that their stems are toneful (otrov, žena), based on which we might expect shifted accent in their derived forms (*otróvan, *žénka).

Pre-sonorant lengthening is so called because it applies only to stems that end in sonorant consonants—that is, any of /m, n, nj, l, lj, r, j, v/ (see 1.2). While the above sonorant-final stems meet this condition, obstruent-final stems don’t lengthen:

(29) No lengthening with obstruent-final stems

<table>
<thead>
<tr>
<th>a.</th>
<th>ĵād</th>
<th>‘misery’</th>
<th>ĵād-an</th>
<th>‘miserable’</th>
</tr>
</thead>
<tbody>
<tr>
<td>čūdo</td>
<td>‘miracle’</td>
<td>čūd-an</td>
<td>‘strange’</td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td>vōče, vōče</td>
<td>‘fruit’</td>
<td>vōč-ka</td>
<td>‘(piece of) fruit’</td>
</tr>
<tr>
<td>bīti</td>
<td>‘beat’</td>
<td>bīt-ka</td>
<td>‘battle’</td>
<td></td>
</tr>
</tbody>
</table>

Before proceeding to the analysis of these facts, however, I should point out that neither pre-sonorant lengthening itself, nor its blocking effect on rightward tone shift, is exceptionless. This is seen by comparing the examples in (28), where lengthening was conditioned by the suffixes -ān and -āk-a, with some examples where it’s conditioned by -āc and -āstv-o:

(30) Pre-sonorant lengthening with -āc and -āstv-o

<table>
<thead>
<tr>
<th>a.</th>
<th>tvōr-iti</th>
<th>‘create’</th>
<th>tvōr-ac</th>
<th>‘creator’</th>
</tr>
</thead>
<tbody>
<tr>
<td>bōr-iti</td>
<td>‘fight’</td>
<td>bōr-ac, bōr-ac</td>
<td>‘fighter’</td>
<td></td>
</tr>
<tr>
<td>strān</td>
<td>‘foreign’</td>
<td>strān-ac, strān-ac</td>
<td>‘foreigner’</td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td>įzdaj-a</td>
<td>‘treachery’</td>
<td>įzdāj-stvo</td>
<td>‘treachery’</td>
</tr>
<tr>
<td>lūkav</td>
<td>‘sly’</td>
<td>lūkāv-stvo</td>
<td>‘trick’</td>
<td></td>
</tr>
<tr>
<td>prijatelj</td>
<td>‘friend’</td>
<td>prijatēlji-stvo</td>
<td>‘friendship’</td>
<td></td>
</tr>
</tbody>
</table>

We see, first, that some words have alternate forms without lengthening (bōr-ac, strān-ac). Further, when lengthening does apply, rightward tone shift appears to apply
regularly as well, yielding stem-final rising accent (bôr-ac, izdâj-stvo). Apparently, then, suffixes vary with respect to how productively they trigger pre-sonorant lengthening, and whether such lengthening blocks rightward shift.

Nevertheless, examples of -ać and -ästv-o after obstruent-final stems show that the restriction of lengthening to sonorant-final stems, at least, is robust:

(31) No lengthening with obstruent-final stems (Zec 1988:152-154, Benson)
   a. kôsìti ‘mow’ kôs-ć ‘mower’
      prôsìti ‘beg’ prôs-ć ‘suitor’
   b. brât ‘brother’ brât-stvo ‘brotherhood’
      vôda ‘leader’ vôd-stvo ‘leadership’

From this, I conclude that pre-sonorant lengthening, including its interaction with rightward shift, isn’t an entirely regular phonological alternation, but is morphologized to some extent. Nevertheless, I’ll argue that to the degree that lengthening interferes with the more regular pattern of rightward shift, it lends support to my account of that phenomenon, and to the account of mora non-syllabification on which it depends.

To show this, I’ll first say some more about the formal analysis of pre-sonorant lengthening. In Zec’s analysis, lengthening reflects a mora contributed by a suffixal jer, which must either transfer to a preceding segment, or delete. After stems ending in a sonorant consonant, the mora links temporarily to the consonant, then to the preceding nucleus: /žen-āka/, žēnka. After obstruent-final stems, by contrast, mora tranference is blocked because obstruents are never moraic in the language: /voć-āka/, vōćka.13

---
13 Complicating matters, jers are regularly pronounced in certain contexts, even when they’ve transferred their underlying mora, e.g. /sil-ān/, silan. The analysis requires that such jers get a new, epenthetic mora.
I’ll adopt Zec’s analysis without further exploration. Although there are issues related to adapting it to a non-derivational framework, we’ve seen that this phenomenon is partly morphologized, and most aspects of its formalization aren’t directly relevant to our present purpose. What is relevant here, I contend, is that lengthening reflects a mora that originates outside the stem, but is pronounced inside the stem. This, in turn, provides an explanation for why lengthening sometimes blocks rightward tone shift.

First, recall that according to my analysis, rightward tone shift serves to align a high tone head to the right edge of a toneful stem:

(32) An underlyingly heavy-final stem undergoes rightward tone shift

\[
\begin{array}{c|c|c}
gal\text{äm}_{H-a} & R(\Delta H,\text{stem})/m & L(w,\Delta w) \\
\hline 
\text{H} & \text{H} & \\
\langle s s \rangle & \langle s s \rangle & s \\
\text{m m (m) m} & \text{m m (m) m} & \\
g\text{a} \text{â m-a} & g\text{a} \text{â m-a} & W! \\
\end{array}
\]

In the losing candidate, which fails to undergo shift, tone and stem are misaligned by a mora—specifically, by the second mora of the final syllable of the stem.

Significantly, this is the very mora that, in lengthening contexts, originates from outside the stem. If we assume that this mora therefore counts as stem-external for the purposes of tone-to-stem alignment, then the first mora of the stem-final syllable makes the better tone head, and tone alignment is satisfied better by unshifted tone:
A morphologically lengthened stem doesn’t undergo rightward tone shift

<table>
<thead>
<tr>
<th>mladoj</th>
<th>āk-a</th>
<th>R(ΔH,stem)/m</th>
<th>L(w,Δw)</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>⟨s s⟩</td>
<td>s</td>
<td>W</td>
<td>W</td>
</tr>
<tr>
<td>m m m</td>
<td>m</td>
<td></td>
<td></td>
</tr>
<tr>
<td>mlā dōj āk-a</td>
<td>mla dōj āk-a</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Thus, the account of rightward tone shift predicts this result without modification.\(^{14}\)

This, in turn, provides further support for mora non-syllabification. Just as tone shifts rightward in order to include the final mora of plain heavy-final stems (galām-a), it fails to shift, in order to exclude this mora, when the mora would make an undesirable tone head. In this way, both regular rightward shift, and its failure in lengthening contexts, depend on the claim that the second mora of a heavy nucleus is unsyllabified when that nucleus is parsed by the weak (unstressed) syllable of a foot.

On the other hand, there are examples like tvōr-ac, izdāj-stvo, where lengthening doesn’t block rightward tone shift (*tvōr-ac, *izdāj-stvo). For such cases, I must assume that lengthening is morphologized to the extent that the extra mora is treated as belonging not to the suffix, but to the stem, perhaps reflecting a condition on stem shapes imposed by the suffix. This is plausible because the incidence of blocking seems to vary by suffix, and because Zec also identifies other suffixes that impose templatic conditions on their stems’ prosodic shapes (1988:160-162).

---

\(^{14}\) This unification of the analyses of rightward tone shift and pre-sonorant lengthening entails that lengthening suffixes belong to the M2 stem, since the extra mora is treated as external to M1 (see 3.2.2). This contradicts Zec’s conclusion that these are M1, her purpose being to distinguish them from non-lengthening jer-ful suffixes, such as adjective-forming /-āsk/, which she classifies as M2 (1988:159). Nevertheless, I maintain that tone-to-stem alignment provides a better basis for stem classification than the less regular pattern of pre-sonorant lengthening.
To summarize, Zec’s analysis of pre-sonorant lengthening, together with my analysis of tone head alignment, make possible a succinct analysis of the blocking effect of lengthening on rightward tone shift. I conclude that the pattern of pre-sonorant lengthening supports my claims that moras can be unsyllabified in order to make unstressed syllables light, and that tone-to-stem alignment is counted by moras.

3.3.9 Summary

In 3.3, I addressed a problem regarding foot shapes, proposing that foot shapes are optimized at the expense of Exhaustivity, by failing to syllabify some stem-final moras. This depends on the following constraint rankings:

(34) Ranking summary for the account of mora non-syllabification

\[
\text{WSP} \rightarrow \text{Align-L}(w,\Delta w) \rightarrow \text{Max(mora)} \rightarrow \text{Exh}(w,m)
\]

Non-syllabification is motivated by WSP, which forbids unstressed heavy syllables. The ranking of Exh below Max has the effect of preferring non-syllabification to shortening, and its ranking below Align means that leftward tone spread happens even when it results in non-syllabification of a stem-final mora.

Then, I defended the non-syllabification hypothesis by showing that it simplified the analyses of three processes: toneless stem shortening, rightward tone shift, and pre-sonorant lengthening. The analysis of rightward tone shift added these rankings:
(35) Ranking summary for the account of rightward tone shift

\[ \Delta H = \Delta s \quad \text{Align-L}(ft, \Delta ft) \]
\[ \text{Align-R}(\Delta H, \text{stem}_H)/m \quad \text{WSF} \]
\[ \text{Align-L}(w, \Delta w) \]

Tone shift is motivated by the ranking of tone-to-stem alignment over head foot alignment, so that tone shift improves the alignment of tone heads at the expense of blocking leftward tone spread.

Last, a further result of the analysis of rightward tone shift was that it indicated that high tone spans have heads, and that tone-to-stem alignment consists in right-aligning tone heads to toneful stems. This claim is supported by the analysis of nuclear length to follow, which also requires reference to tone heads.

3.4 The distribution of nuclear length

3.4.1 Introduction

The last problem that I’ll address in connection with the analysis of word accent concerns the distribution of nuclear length. We find that the licensing of contrasts between light (monomoraic) and heavy (bimoraic) syllables is governed to a great extent by the location of accent in the word, and, at a less obvious level, by the pattern of footing in a word. Such rich interactions among accent, length, and footing serve as further probes into word and clitic prosody.
Based on an examination of the different conditions on length contrasts in two Neo-Štokavian varieties, I argue that the most elegant analysis involves the claim that footing is non-exhaustive—that is, a prosodic word contains only a single foot. The proposed analysis accounts for the different length conditions across varieties with minimal reranking of a small and well motivated constraint set.

3.4.2 Length in Vukovian

The Vukovian standard exhibits a patterned restriction on nuclear length that I’ll call the Vukovian length condition: length contrasts are licensed in accented and post-accentual syllables, but not in pre-accentual syllables. In fact, an accented syllable can be followed by multiple long nuclei, but is preceded only by short nuclei:

(36) Length is contrastive only in accented and post-accentual syllables (Vukovian)

<table>
<thead>
<tr>
<th>Vukovian Word</th>
<th>English Equivalent</th>
</tr>
</thead>
<tbody>
<tr>
<td>ȕgovõrnõš</td>
<td>‘contractual’</td>
</tr>
<tr>
<td>põvëžanõšt</td>
<td>‘connection’</td>
</tr>
<tr>
<td>něopřeznõšt</td>
<td>‘carelessness’</td>
</tr>
<tr>
<td>râžbojõništvo</td>
<td>‘banditry’</td>
</tr>
<tr>
<td>prêdštâvištvo</td>
<td>‘representation’</td>
</tr>
<tr>
<td>univerzištët</td>
<td>‘university’</td>
</tr>
<tr>
<td>ravnoprâvnõšt</td>
<td>‘equality’</td>
</tr>
<tr>
<td>nedisciplinõrân</td>
<td>‘undisciplined’</td>
</tr>
<tr>
<td>multikulturaližam</td>
<td>‘multiculturalism’</td>
</tr>
<tr>
<td>internacionalizirati</td>
<td>‘internationalize’</td>
</tr>
</tbody>
</table>

As stated earlier, I assume that nuclear segments are moraic, but codas aren’t. By that assumption, we may generalize that pre-accentual nuclei are strictly monomoraic.

The length condition isn’t only a generalization over surface distribution, it’s also a source of alternations. Zec (1999:250) offers the examples /dõboš/ and /mâjstor/, which contain underlyingly long nuclei that shorten when accent occurs later in the word.\(^{15}\)

---

\(^{15}\) I have few examples of pre-accentual length neutralization. As we’ve seen, various morphological lengthenings and shortenings can make it difficult to determine whether a nucleus is shortened because it precedes the word accent, or for some other reason.
(37) Length is neutralized in pre-accentual syllables (Vukovian)

\[
\begin{array}{ll}
\text{dôboš} & \text{‘drum’} \\
\text{do}bôšâr & \text{‘drummer’}
\end{array}
\quad \begin{array}{ll}
\text{mâjstor} & \text{‘master’} \\
\text{majstôrija} & \text{‘masterpiece’}
\end{array}
\]

In some Neo-Štokavian varieties, length is still more restricted (see 2.2.6, 3.4.6).

### 3.4.3 An account of length in Vukovian

In the analysis of word accent determination proposed in 2.4, both default initial accent and leftward tone spread result from the general tendency to left-align the word with its head foot, represented by the gradient constraint \( \text{ALIGN-L}(w,\Delta w)/s \). Following a suggestion from John McCarthy (p.c.), I propose that this accounts for pre-accentual shortening too, if it’s revised to count violations not by syllables, but by moras:

(38) \( \text{ALIGN-L}(w,\Delta w)/m \): mark a violation for every mora between the left edge of a prosodic word and the left edge of its head foot.

This new, mora-counting version of head foot alignment does the same work for which the earlier, syllable-counting version was proposed: since every syllable contains at least one mora, both versions favor leftward alignment of head feet. With this revision, moreover, this independently needed constraint also motivates pre-accentual shortening, because shortening further improves head foot alignment, if only by a mora:

(39) Mora-counting head foot alignment motivates pre-accentual shortening

\[
\begin{array}{|c|c|c|c|}
\hline
\text{majstori}ja, H & \text{L}(w,\Delta w)/m & \text{MAX(mora)} & \text{EXH}(w,m) \\
\hline
\text{a.} & \text{màj } \text{(stôr)j}a & * & * \\
\text{b.} & \text{ma}^\text{`j} \text{(stôr)j}a & **! & * \\
\hline
\end{array}
\]
(As in 3.3.7, I write superscript vowels to represent unsyllabified moras.)

Thus, a single constraint motivates three apparently separate phenomena: default initial accent (2.4.3), leftward tone spread (2.4.6), and pre-accentual shortening. Key to this result is that $L(w, \Delta w)/m$ evaluates misalignments of the head foot gradiently, and by moras. Apart from its formal efficiency, empirical support for this proposal is that shortening arose concomitantly with spreading during the Neo-Štokavian accent shift, indicating that shortening and spreading had a single cause (see 2.2.5).

This account of pre-accentual shortening also has some implications for the broader analysis of word prosody. First, although I’ve argued that $L(w, \Delta w)/m$ motivates mora deletion, it must be outranked in turn by a constraint that forbids deleting segments, in order to prevent gratuitous deletion:

\[
\begin{array}{c|c|c}
\text{mājstorija, H} & \text{MAX(segment)} & L(w, \Delta w)/m \\
\hline
\text{a.} & \text{māj(stōri)ja} & \ast \\
\text{b.} & \text{māj(stōri)ja} & \ast \ddagger \ddagger
\end{array}
\]

Next, deletion of pre-accentual moras stands in contrast to non-syllabification of post-accentual moras. In my analysis of foot shapes, I proposed that heavy unstressed syllables are avoided by failing to syllabify some moras, which optimizes foot shapes by making all unstressed syllables light (see 3.3.3). This involved ranking $\text{MAX(mora)}$ over $\text{EXH}(w,m)$, to account for the generalization that moras are preserved undeleted, but at the expense of leaving them unsyllabified. But if non-syllabification is preferred to deletion, then why are unwanted pre-accentual moras deleted?
The diagrams in (41) clarify how this emerges from the analysis. A pre-accentual heavy nucleus, as in /mājstoria/ (a), can shorten only by mora deletion—simply leaving one mora unsyllabified doesn’t improve head foot alignment, because this mora still intervenes between the foot and edge of the word. By contrast, a post-accentual heavy nucleus, as in /junāk/ (b), can be resolved by mora non-syllabification, and is:

(41) Moras are deleted preceding the stress, but unsyllabified following the stress

\[
\begin{align*}
  &s \quad (s \ s) \ s \quad s \quad (s \ s) \ s \quad (s \ s) \quad (s \ s) \\
  &\quad m \quad m \quad m \quad m \quad m \quad m \quad m \quad m \quad m
\end{align*}
\]

\[a. \quad \text{māj} \quad \text{sto} \quad \text{ri} \quad \text{ja} \quad > \quad *\text{māj} \quad \text{sto} \quad \text{ri} \quad \text{ja} \quad b. \quad \text{ju} \quad \text{nāk} \quad > \quad *\text{ju} \quad \text{nāk}\]

In summary, mora deletion and non-syllabification happen for different reasons, but are captured by the same overall constraint ranking. Preceding the word stress, moras delete to improve head foot alignment (\textsc{align} >> \textsc{max}), but following the stress, some moras are left unsyllabified to avoid heavy unstressed syllables (\textsc{wsp} >> \textsc{exh}). Whereas in the former case only deletion suffices, in the latter either deletion or non-syllabification would do, and non-syllabification is preferred (\textsc{max} >> \textsc{exh}):
We may compare this account of shortening to those of Zec (1999:258-361) and Becker (2006:10-11, 16-18). Although their implementations differ, their proposals share the same general idea, comprising two key premises. First, that long nuclei are licensed only inside feet, and second, that pre-accentual syllables aren’t footed. From this, it follows that pre-accentual nuclei can only be short.

Let’s set aside for the moment whether pre-accentual syllables are footed, and ask why bimoraic syllables should be licensed only inside feet. For Zec, this follows from the assumption that heavy syllables must either be footed, or shorten. This is more or less equivalent to WSP, which requires that heavy syllables be heads of feet.

While this approach itself is straightforward, it contradicts my analysis of foot shapes, rightward tone shift, and other phenomena discussed in 3.3, which posits that violations of WSP are resolved by mora non-syllabification rather than mora deletion. I maintain that shortening isn’t motivated by WSP, because this would abandon the advantages of the non-syllabification approach, for which I’ve argued at length.

For Becker, length is generally banned by a constraint *VV, but is protected by a positional faithfulness constraint IDENT(μ)_F, which enforces faithfulness to underlying length only inside feet. Thus, that proposal depends on two additional constraints, while the present account motivates shortening by an independently needed constraint on head foot alignment. Moreover, it requires that syllables following the head foot be footed as well, in order to explain why they don’t shorten. By contrast, I’ll argue below that syllables outside the head foot aren’t footed, but parsed directly by word.\textsuperscript{16}

\textsuperscript{16} Becker (2006:10) defines these constraints as follows:

(i) a. *VV: no long vowels.
Last, that approach seems to go against the spirit of positional faithfulness, which is proposed to preserve contrasts in prosodically or psycholinguistically prominent positions, like stressed and word-initial syllables (Beckman 1998). Yet feet themselves aren’t by nature prominent. We might revise the proposal to protect length in head feet, but this wouldn’t preserve length in syllables following the head foot. I therefore maintain that pre-accentual shortening is compelled by head foot alignment.

3.4.4 Positional faithfulness to length

Nevertheless, despite my criticisms of the positional faithfulness approach to shortening, I find that a full account of length in BCS does require a version of positional faithfulness, but relativized to tone heads, rather than to feet. I’ll show that such a constraint can avoid the formal problems discussed above, and is needed in order to account for the typology of length contrasts across Neo-Štokavian dialects.

The tableau in (43) illustrates the problem. I’ve proposed that R(∆H,stem), or tone-to-stem alignment, outranks L(w,∆w), or head foot alignment (see 2.4.6). Now, since L(w,∆w), in turn, outranks MAX(mora), this entails that R(∆H,stem) outranks it too, by transitivity. This predicts, incorrectly, that perfect tone head alignment in toneful, unsuffixed, heavy-final stems, which I argued earlier to be impossible, can be accomplished after all by shortening the stem-final nucleus:

b. IDENT(mora): if a segment \( x \) is parsed into a foot in the output, and there exists some \( x' \) in the input such that \( x \) and \( x' \) correspond, then \( x \) and \( x' \) are linked to the same number of moras.
Tone-to-stem alignment could sometimes be improved by mora deletion

\[
\begin{array}{c|c|c|c}
\text{jū nāk}_H & R(\Delta H, \text{stem})/m & L(w, \Delta w)/m & \text{MAX}(\text{mora}) \\
\hline
\text{H} & \text{H} & \text{L} & \text{W} \\
(\text{s} \; \text{s}) & (\text{s} \; \text{s}) & & \\
m \; m & m \; m & & \\
\text{jū nāk} & \text{jū nāk} & & \\
\end{array}
\]

I’ll try to show that the winner’s long nucleus is protected, in spite of tone head alignment, by positional faithfulness. For reasons to be given below, I propose that the relevant constraint is a member of the \textsc{Ident} family that enforces moraic faithfulness in segments linked to the head of a high tone span (b):

(44) Plain and positional faithfulness to moraic associations

a. \textsc{Ident}(mora): if segment \(x\) and mora \(m\) in the input correspond to segment \(y\) and mora \(n\) in the output, respectively, and \(x\) is linked to \(m\), then \(y\) is linked to \(n\).

b. \textsc{Ident}(mora)/\(\Delta H\): if segment \(x\) and mora \(m\) in the input correspond to segment \(y\) and mora \(n\) in the output, respectively, and \(x\) is linked to \(m\), and \(y\) is linked to the head of a high tone span, then \(y\) is linked to \(n\).

I contend that the latter constraint respects the positional faithfulness schema by relativizing a standard faithfulness constraint to a prosodically prominent element. The prominence of high tone in the language is demonstrated, first, by its association with word-level prominence (see 2.4.7), and second, by the alignment of tone heads to morphological stems, and to head moras of syllables (see 3.3.7).

By ranking this positional \textsc{Ident} constraint above tone head alignment, we get the result that both moras of a heavy nucleus are protected, as long as at least one of them is linked to a high tone head. For example, the second nucleus of jūnāk is linked to high
tone through its first mora, which brings its second mora under the protection of IDENT(mora)/ΔH as well, thus preferring non-syllabification to deletion:

(45) Positional faithfulness protects length in nuclei linked to tone heads

<table>
<thead>
<tr>
<th>junākH</th>
<th>IDENT(mora)/ΔH</th>
<th>R(ΔH,stem)/m</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>H</td>
<td>W!</td>
</tr>
<tr>
<td>⟨s s⟩</td>
<td>⟨s s⟩</td>
<td>L</td>
</tr>
<tr>
<td>m m m</td>
<td>m m m</td>
<td></td>
</tr>
<tr>
<td>jū nāk</td>
<td>jū nāk</td>
<td></td>
</tr>
</tbody>
</table>

I use IDENT, rather than MAX, because the mora in question isn’t saved by virtue of its own association with tone—in fact, it isn’t linked to tone at all. Rather, it’s saved by its association with a segment that’s linked to tone. Faithfulness to properties of segments is the defining characteristic of IDENT constraints (McCarthy and Prince 1995).

In short, I propose that we require IDENT(mora)/ΔH in order to prevent shortening as a means of satisfying tone-to-stem alignment. Now, from the perspective of Vukovian alone, this may seem like a stopgap, an unintended consequence of other aspects of the analysis. However, I’ll show in the remainder of 3.4 that a comparison with the licensing of length contrasts in another Neo-Štokavian variety supports both the need for such a constraint, and the claim that it’s relativized to tone heads.

3.4.5 Footing is non-exhaustive

Before proceeding to length conditions in other dialects, I’ll address one other topic in footing. That is, are syllables outside the head foot parsed by non-head feet, or is
the head foot the only foot in the word? I’ll argue for the latter possibility, claiming that material outside the head foot is parsed directly by prosodic word.

Let’s first consider why we might think that prosodic words are exhaustively footed. According to the OT implementation of prosodic layering adopted here, syllables that are parsed directly by word violate $\text{EXH}(w,s)$. This constraint, then, encourages exhaustive footing. Moreover, under Zec’s and Becker’s accounts of the Vukovian length condition, all heavy syllables, at least, must be footed (see 3.4.3).

On the other hand, there’s no phonetic evidence for non-head feet in the form of secondary stress. It’s possible that non-head feet are present, but simply have no phonetic realization, as is argued for Cairene Arabic, based on phonological evidence (McCarthy 1979, Hayes 1995). The question is whether such evidence is found in BCS.

On the contrary, there are arguments against non-head feet. One applies only to syllables preceding the head foot. Since the word is left-headed, a word with multiple feet would be headed by the leftmost one—in other words, no foot precedes the head foot (Zec 1999:259). This deduction relies on the End Rule, according to which a word’s head foot is either its leftmost or its rightmost foot (Prince 1983).\textsuperscript{17}

Another argument for non-exhaustive footing is that it supports the one-to-one relation between stress and tone. The (secondarily) stressed syllables of non-head feet might attract tone, reducing the distinctiveness of the main stressed syllable. Accordingly, the constraints $\ast-\Delta w-\text{TO-H}$ and $\Delta ft-\text{TO-H}$, active in word accent determination (see 2.4.7),

\textsuperscript{17} Then again, this deduction doesn’t hold in languages where stress isn’t assigned by the End Rule, but is attracted to heavy syllables. However, since this isn’t the case in BCS, we may discount this possibility.
also block the building of non-head feet if ranked above EXH(w,s). Any non-head feet, if
toneless, violate Δft-TO-H (b), and if toneful, violate *-Δw-TO-H (c): 18

(46) Tone-prominence constraints rule out non-head feet

<table>
<thead>
<tr>
<th>detelina</th>
<th>*-Δw-TO-H</th>
<th>Δft-TO-H</th>
<th>EXH(w,s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. → 〈dêте〉 lina</td>
<td>**</td>
<td>*!</td>
<td></td>
</tr>
<tr>
<td>b. 〈dêте〉(lina)</td>
<td>*!</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. 〈dêте〉(lîna)</td>
<td>*!</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Thus, non-exhaustive footing can be seen as a strategy for ensuring that only the most
prominent foot (or syllable, or mora) of a word is endowed with high tone.

But the strongest argument against non-head feet, in my view, comes from the
typology of length conditions across dialects. Based on a comparison of length contrasts
across several Neo-Štokavian dialects (see 3.4.6, 5.3.5), I’ll argue that the observed
variation is modeled most simply if we assume that these Neo-Štokavian dialects have in
common that they fail to build non-head feet.

This is the analysis in a nutshell. Non-exhaustive footing is common across
dialects, with different length conditions representing different resolutions of unstressed
heavy nuclei. In terms of the OT analysis, variation comes down to the relative rankings
of Exhaustivity constraints, which favor shortening, and MAX(mora), which favors mora
non-syllabification. I find this simpler than the alternative that length is preserved only in
feet, since that requires at least one additional and rather arbitrary constraint (see 3.4.3),
and entails that dialects differ in whether they build non-head feet.

18 Admittedly, the main reason that I favored Δft-TO-H over the alternative Δw-TO-H was for this very
reason, that Δft-TO-H helps to rule out non-head feet (see 2.4.7). Therefore, that argument for non-
exhaustive footing from tone-prominence relations isn’t formal, but conceptual.
The canonical Vukovian system, which maintains post-accentual length contrasts, is analyzed as preferring to resolve heavy nuclei by non-syllabification, over shortening. In fact, the following tableau shows that the grammar as it stands predicts this result, illustrated with respect to ügovorni ‘contractual’. High-ranking WSP compels resolution of unfooted heavies (c), while Max(mora) blocks shortening (b) in favor of partial non-syllabification of the offending nuclei (a):

(47) Heavy nuclei following the head foot are partially unsyllabified (Vukovian)

<table>
<thead>
<tr>
<th>ugovorni</th>
<th>WSP</th>
<th>Max(mora)</th>
<th>EXH(w,m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.  → ⟨.ũ.go.⟩voₐⁿ.orₐⁿ.miⁱ</td>
<td></td>
<td></td>
<td>**</td>
</tr>
<tr>
<td>b.  ⟨.ũ.go.⟩vör.ni.</td>
<td></td>
<td><em>!</em></td>
<td></td>
</tr>
<tr>
<td>c.  ⟨.ũ.go.⟩vōr.ni.</td>
<td><em>!</em></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Minimally different dialects that don’t maintain such contrasts are modeled with the reverse ranking of Max(mora) and EXH(w,m) (see 3.4.6).

Although such partial non-syllabification mirrors that argued for stem-final heavy nuclei (see 3.3), it might be argued that post-accentual length is resolved more simply by uniform non-syllabification of all unfooted material. These alternatives, partial (a) and uniform (b) non-syllabification, are evaluated differently by EXH(w,m) and EXH(w,s):

(48) Partial and uniform non-syllabification (Vukovian)

<table>
<thead>
<tr>
<th>ugovorni</th>
<th>EXH(w,m)</th>
<th>EXH(w,s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.  ⟨.ũ.go.⟩voₐⁿ.orₐⁿ.miⁱ</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>b.  ⟨.ũ.go⟩ vōr nį</td>
<td>****</td>
<td></td>
</tr>
</tbody>
</table>

Whereas the complex structure created by partial syllabification violates both constraints (a), uniform non-syllabification creates only free moras (b).
Nevertheless, I’ll assume that partial non-syllabification is the preferred parse. Aside from the fact that partial non-syllabification is needed elsewhere, I find the ranking for uniform non-syllabification to be conceptually problematic. If Strict Layering is an ideal (though violable), then it seems suitably cautious to assume, in the absence of evidence to the contrary, that parsing syllables by p-word, bypassing one prosodic level, is not more marked than parsing moras by p-word, bypassing two prosodic levels.

To put it another way, consider a word like ⟨dēte⟩lina, with all light nuclei. The uniform analysis would leave its unfooted material unsyllabified for no good reason, whereas non-syllabification in ⟨ūgo⟩vōrnī, at least, serves a purpose. I therefore assume, on conceptual grounds, that EXH(w,m) outranks EXH(w,s), favoring non-syllabification only where necessary to satisfy WSP.

In the following subsection, I’ll extend this approach to length conditions in a Neo-Štokavian dialect of Belgrade, then in chapter 5, to length conditions in the received and Piva-Drobnjak corpora.

### 3.4.6 Length in a Belgrade variety

Ivić (1965) describes the pronunciation predominant in Belgrade as permitting at most one long nucleus per word, and that only immediately adjacent to the accent. Accordingly, though it exhibits contrasts in pitch accent and nuclear length similar to the Vukovian standard (a), it exhibits what we may characterize as shortening in some contexts where Vukovian maintains a length contrast (b):
Shortening in a Belgrade variety

<table>
<thead>
<tr>
<th>Vukovian</th>
<th>Belgrade</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. no shortening</td>
<td>júnāk</td>
</tr>
<tr>
<td></td>
<td>gláva</td>
</tr>
<tr>
<td></td>
<td>prȃvda</td>
</tr>
<tr>
<td></td>
<td>‘hero’</td>
</tr>
<tr>
<td>b. shortening</td>
<td>kȁměn</td>
</tr>
<tr>
<td></td>
<td>gláṿóm</td>
</tr>
<tr>
<td></td>
<td>prȃvdōm</td>
</tr>
<tr>
<td></td>
<td>‘stone’</td>
</tr>
<tr>
<td></td>
<td>‘justice (NOM)’</td>
</tr>
</tbody>
</table>

This pattern can be summarized as follows. First, accented nuclei unconditionally support contrasts in length. Second, if the accented nucleus is heavy, then all others are short (gláṿóm, prȃvdōm). Last, unaccented nuclei support a length contrast following short rising accent (júnāk), but not after short falling accent (kȁměn).¹⁹ ²⁰

In fact, the examples in (49) are the only ones that Ivič provides. Still, we may draw some conclusions from them, since this is, apparently, a case of the general loss of length contrasts observed in a continuum across Neo-Štokavian dialects (see 2.2.6). Accordingly, though Ivič offers no examples of shortening of long nuclei later than the immediately post-accentual syllable, we may assume that this variety has, for example, ūgovōrnī, pȕvēzānōst corresponding to Vukovian ūgovōrnī, pȕvēzānōst.

To begin with, the general pattern of post-accentual shortening is captured under the account of footing and length proposed above for Vukovian simply by reranking

¹⁹ Ivič’s description was based on his contemporary analysis of the Neo-Štokavian pitch accents, according to which the tonal component of accent consists of a single high tone peak (|) immediately preceding what in the present analysis is the last tone-linked syllable, e.g. lkȁměn, jùlnāk (see 2.3.3). Hence his observation that length is licensed only ‘immediately adjacent to the accent’ (‘u izgovoru koji dominira u Beogradu dužina u reči može biti samo jedna i uvek stoji (neposredno) uz akcenat’) (1965:137).

²⁰ Peco (1971) cites several similar shortening patterns, from both standard and non-standard dialects. For example, ‘In our standard language, length is found exclusively on post-accentual syllables, and most often, only the first post-accentual length is preserved; others may also shorten. (U standardnom našem jeziku dužina se javlja isključivo u postakcenatskim slogovima i čuva se najčešće samo prva postakcenatska dužina, druge mogu i da se skraćuju)’ (21). In reference to the non-standard pronunciation of Srem, he observes that ‘length is better preserved after rising than after falling accents (dužine se bolje čuvaju iza uzlaznih nego iza silaznih akcenta)’ (156).
MAX(mora) and EXH(w,m). Then WSP, which in Vukovian motivates non-syllabification (violating Exhaustivity), is satisfied in Belgrade by shortening (violating MAX):

(50) WSP is satisfied by shortening (Belgrade)

<table>
<thead>
<tr>
<th>word</th>
<th>WSP</th>
<th>EXH(w,m)</th>
<th>MAX(mora)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ugovorni</td>
<td></td>
<td></td>
<td>**</td>
</tr>
<tr>
<td>(ugo)vorni</td>
<td></td>
<td><em>!</em></td>
<td></td>
</tr>
<tr>
<td>(ugo)vorni</td>
<td><em>!</em></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Long nuclei in stressed syllables, by contrast, don’t violate WSP, and don’t shorten.

Thus, the claim that there are no non-head feet either in Vukovian or in Belgrade makes possible a single account of length conditions in both varieties, by a minimal difference in constraint ranking. If, on the other hand, we suppose that post-accentual syllables are footed, then there’s no obvious explanation for why these syllables should shorten in Belgrade, apart from some general prohibition on long nuclei, which I find less elegant and explanatory than the present solution, based on WSP.

The more difficult problem is that post-accentual length is preserved in words with short rising accent (jūnāk). In fact, the analysis predicts this with no modification. The positional faithfulness constraint IDENT(mora)/ΔH, which was proposed in 3.4.4 to account for the preservation of length in just this context, does the same here:

(51) Positional IDENT protects length in nuclei linked to tone heads (Belgrade)

<table>
<thead>
<tr>
<th>word</th>
<th>IDENT(mora)/ΔH</th>
<th>WSP</th>
<th>EXH(w,m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>jūnāk, H</td>
<td>IDENT(mora)/ΔH</td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>(jūnāk)</td>
<td>*!</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(jūnāk)</td>
<td>*!</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Underlying length in the second nucleus of *junak* is protected by IDENT because this nucleus is linked to the head of a high tone span, as proposed in 3.3.7.

I conclude that this positional IDENT constraint is well motivated, based on its applicability in both Vukovian and Belgrade. Interestingly, whereas in the analysis of Vukovian the need for IDENT was apparent only from the formal analysis, its effects are clearer in Belgrade, where it’s the only force that preserves post-accentual length.

A comparison across the prosodic and tonal structures of /junākH/, /kamēn/, and /glāv-ōmH/ clarifies why IDENT protects length in *junak*, but not in the others. The important difference is the location of the head of high tone, which is linked to the second syllable of *junak* (a), but to the first syllables of *kamen* (b) and *glavom* (c):

(52) Faithfulness to length in nuclei linked to high tone heads (Belgrade)

These different structures result in a regular fashion from the principles of tone assignment. Whereas *junak* is a toneful stem, so that its tone head is aligned as close as possible to its right edge, *kamen* is underlyingly toneless, so tone alignment doesn’t apply, and its tone is default and initial. Last, *glav-* is a toneful, heavy-final, suffixed stem, whose tone undergoes regular rightward shift. This right-aligns its tone head with its stem, leaving its second, non-stem syllable without length protection.
This comparison also makes it clear that, for positional IDENT to distinguish the second syllable length in *junak* from those in in *kamen* and *glavom*, the constraint must be relativized to tone heads. Special faithfulness to nuclei that are linked to tone in general, or that are parsed by head feet, wouldn’t distinguish *junak*.

3.4.7 Summary

I’ve proposed an analysis of patterns in the distribution of nuclear length in two Neo-Štokavian varieties: the Vukovian standard, and the Belgrade vernacular of forty years ago. Despite the different licensing conditions on length in the two varieties, I argued that both give evidence for the claims that prosodic words contain a single foot, and that there’s special faithfulness to length in nuclei linked to high tone heads.

This diagram summarizes the constraint rankings proposed for Vukovian:

(53) Ranking summary for the account of length in Vukovian
Of these constraints, MAX(mora) and IDENT are active in preserving underlying length. Inimical to length, but for various reasons, are ALIGN-L(w,Δw), WSP, and EXH(w,m). The essence of the Vukovian length condition is the ranking ALIGN-L over MAX, which shortens pre-accentual nuclei to improve head foot alignment.

Other interactions in length are more subtle. Of minor effect, but confirmed by its action in both varieties, is IDENT, which prevents immediately post-accentual length in words like júnāk from shortening to improve rightward tone head alignment.

Length conditions also provide clues to footing. First, the ranking of constraints on tone linking over EXH(w,s) forbids the building of non-head feet (3.4.5). As a result, WSP requires some resolution of unfooted heavy nuclei. The relative ranking of MAX and EXH(w,m) determines that these are resolved, in Vukovian, by non-syllabification of some moras, yielding light syllables, but preserving post-accentual length.

This contrasts with the treatment of post-accentual length in Belgrade, where the relative rankings of MAX and EXH(w,m) are reversed, with the result that post-accentual heavy nuclei are resolved by shortening rather than by non-syllabification:

(54) Ranking summary for the account of length in Belgrade
I’ll revisit the dialect typology of length conditions in chapter 5 (5.3.5), in connection with the prosodic analysis of the peninitial clitics.

### 3.5 Conclusions

In this chapter, I dealt with some further issues arising from the analysis of word accent that was proposed in chapter 2. There were two purposes to this. One was to substantiate that analysis. The other was to further develop our model of word prosody, because of its importance in the subsequent analysis of clitic prosody.

The analysis of accent was substantiated in several ways. First, I defended the proposed inventory of foot shapes, which I claimed as an advantage of that account (2.4.4). In response to the problematic prediction that some head feet are LH or HH trochees, I argued that these are of the more canonical shapes LL and HL, respectively, and that this is ensured by leaving the second mora of a heavy nucleus unsyllabified (3.3.2). This somewhat unorthodox claim was supported by observations on the patterns of toneless stem shortening, rightward tone shift, and pre-sonorant lengthening.

I also refined tone-to-stem alignment in a way crucial to the account of rightward tone shift (3.3.7), bringing it more in line with our assumptions regarding the distribution of tone. While the latest version of this constraint—ALIGN-R(ΔH,stemH)/m—still fails on the desideratum that tones be aligned only to prosodic constituents, it nevertheless improves over the earlier version (2.4.5) in that it aligns one kind of prominent element to another—that is, the head of a tone span to a morphological stem.
The notion of tone heads as significant phonological entities was supported by their roles both in tone-to-stem alignment, and in licensing nuclear length (3.3.7, 3.4.4). In functional terms, tone heads can be seen as the focus of tone prominence, being exploited to highlight morphological edges, and to support length contrasts.

This diagram summarizes the constraint rankings argued for in chapters 2 and 3:

(55) Ranking summary for the analysis of word prosody and accent (Vukovian)

This account of word prosody and accent provides rigorous criteria for selecting among alternative analyses of prosodic clisis in subsequent chapters. In chapter 4, for example, the constraints \textsc{Bin}(ft) and \textsc{Align-L}(w,\Delta w), shown to be active in accent determination, are instrumental in the analysis of the traditional proclitics. While \textsc{Bin}(ft) restricts function word promotion, \textsc{Align-L} helps rule out an affixal clitic analysis of prepositions. Then in chapter 5, I draw on my accounts of rightward tone shift, footing, and length to argue that the peninitial clitics aren’t typically enclitic, but free.
Last, a more general claim to which this chapter contributes is that violations of Exhaustivity are encountered at all prosodic levels. In the analysis of accent, I proposed that not only syllables, but moras too are often parsed directly by prosodic words. In the following investigation of prosodic elipsis, I’ll find that moras and syllables are sometimes parsed by phonological phrases as well.
4.1 Introduction

Having established an account of word accent, I now return to the principal goals of this study, which are, first, to ascertain clitics’ phonological representations, and second, to show that phonological differences among clitics are an effect of general interface constraints. The greater part of the remainder of the dissertation is devoted to the first goal, through a systematic investigation of the evidence for clisis.

This investigation is necessary because, although the evidence for clitic prosody often isn’t obvious, studies of BCS clisis generally cite few arguments for the clitic representations that they posit, tending to assume the traditional classification into proclitics and enclitics. This, despite the fact that developments in prosodic phonology provide a diversity of representations, in addition to proclisis and enclisis, as possible explanations for clitics’ surface properties.

As described in chapter 1, I propose to go about the investigation by looking at the clitic system as a whole, rather than only at proclitics, enclitics, or some particular syntactic category. This approach ensures that the analyses of individual clitic types don’t have undesirable consequences for others, helping us to select among the numerous theoretical alternatives, and zero in on the best overall account.

Nevertheless, to maintain a focus, I restrict the inquiry to a few categories that I take to be representative of clitic phenomena in BCS. I devote the present chapter to those that are traditionally considered proclitic: negation, prepositions, complementizers,
and conjunctions. The traditional enclitics are the subject of chapter 5. For the present, I’ll also confine the investigation to clisis in the vicinity of lexical words, such as proclisis of the negator to verbs, of prepositions to nouns, and so on.

In exploring prosodic clisis, I’ll rely on several sources of evidence, of which the most informative is accent. This is because accent is relatively easy to observe, and because the detailed model of word accent and prosody developed in chapters 2 and 3 makes specific predictions concerning the phonological behavior of various potential clitic analyses. Other sources of evidence for clisis are its interactions with syllable weight, consonant assimilations, prosodic breaks, and word order.

This evidence supports claims that the traditional proclitics aren’t necessarily proclitic, or even prosodic word-internal (Selkirk 1995a, Zec 1997). I’ll argue that these categories are attested in three different parses across dialects: as internal proclitics, as free clitics, and as prosodic words. Which of these obtains depends on a word’s size, its syntactic and prosodic context, and the dialect. Contrary to some proposals (Zec 1993, 1997, 2005, Selkirk 1995a, Schütze 1997), I claim that affixal proclisis isn’t attested.

The comparison across function word categories also indicates that certain parsing differences are determined by the pattern of phonological phrasing in the clause, and its constraining effects on function word parsing. In addition to certain subtle effects that emerge only from the cross-categorial comparison, the principal findings concerning phonological phrasing are that phrase edges that are left-aligned NP, PP, and VP rule out the possibility of regular proclisis of conjunctions and complementizers.

Alongside the analysis of prosodic representations, I also develop an account of how these structures are determined. This builds on the OT account of word prosody
developed in chapters 2 and 3, drawing especially on constraints on correspondences between lexical and prosodic words (ALIGN, WRAP), and on the layering of syllables, p-words, and P-phrases (EXHAUSTIVITY, NONRECURSIVITY).

I take the unified account of word, phrase, and clitic prosody to support the interface constraint approach to clisis over the more stipulative subcategorization approach. That is, function word prosody is determined by the same grammatical principles that determine other kinds of prosodic representations, rather than by word-specific subcategorizations, and prosodic differences among words or categories result from how their syntactic representations are interpreted by the interface.

Before proceeding to the direct investigation of clisis structures, I first provide some background, in 4.2, on the data, issues, and previous analysis of prosodic clisis in BCS. Subsequent sections are case studies of four representative clitic categories: negation (4.3), prepositions (4.4)—and last, complementizers and conjunctions, which I combine in the more general class of ‘introducers’ (4.5).

Then in 4.6, I collate the evidence for phonological phrasing into an interface account of P-phrase determination. Last, in 4.7, I summarize my conclusions concerning the prosody of the traditional proclitics.

4.2 Issues in prosodic clisis

4.2.1 Introduction

I preface the investigation of the evidence for clisis with a review of the questions that I aim to answer. First, I delineate the problem, introducing the five representative clitic categories that the investigation will focus on (4.2.2). Then I summarize the kinds
of prosodic analyses that have been proposed for BCS clitics (4.2.3, 4.2.4). Last, I preview the kinds of evidence that the investigation will depend on (4.2.5).

4.2.2 Five representative clitic categories

Research on BCS clitics has tended to focus on particular classes of clitics with interesting properties, especially the peninitial clitics (PCs), because of their unique word order, or prepositions, which in some dialects regularly receive accent transfer from following hosts. Indeed, it isn’t unusual that one encounters the term clitic applied solely to the PCs (see 1.3.2 for a discussion of the term clitic).

However, as Radanović-Kocić suggests, this risks missing generalizations that are relevant not only to a particular class of clitics, but to prosodic clitics in general:

The definitions of clitics in the existing literature... mainly focus on two characteristics of clitics: the fact that they are unstressed and that they need a host. If applied to Serbo-Croatian, such a definition would cover a wide range of categories — prepositions, certain conjunctions, the negative particle ne, sentential particles, pronouns, auxiliaries. The fact is, however, that so far nobody has found all of these elements equally interesting and intriguing (Radanović-Kocić 1988:71)

I therefore take as a point of departure the phenomenon of prosodic clisis itself, asking why some words should be clitic, but not others. I aim to identify, first, what all prosodic clitics have in common, in order to shed light on whatever additional factors determine the unique properties of particular clitics.

I’ll focus on five representative categories that are attested as prosodic clitics in BCS. Four of these are traditionally considered to be proclitic. These are the negator ne (a), prepositions (od, do) (b), complementizers (da) (c), and conjunctions (i) (d):
(1) Four traditionally proclitic categories

a. Ōna višě nē plačě.
   she more not cries
   She isn’t crying anymore. (MS:40)

b. Mōj pūt ḍō kučě dō škōlē nije dūg //
   my way from house to school not+aux long //
   My way from home to school isn’t long // (MM:12)

c. // pa sādā hōčě da būdē u žīvāhmōm dijelu grāda //
   // so now wants c will be in lively part city //
   // so that now (she) wanted to be in the lively part of the city // (MS:76)¹

d. Grād je prōpao u tāmu i tmūšu.
   city aux fell in gloom and darkness
   The city has fallen into gloom and darkness. (MS:111)

   The notation // represents any of several pausal punctuation marks (…, ; : — “”).

In an effort to preserve pausal information in corpus data, I transliterate such punctuation
at example edges by double slashes (//), and its absence by ellipses (…) (see 4.2.5).

   The fifth category—to the extent that it can be considered a single category—
comprises the peninitial clitics, exemplified here by su and im:

(2) Rūke su im dūge, kōštane i jāke //
   arms aux them long bony and strong //
   Their arms are long, bony, and strong // (MS:112)

   The examples in (1) and (2) also illustrate some of the analytical tools that I’ll use
in charting clisis patterns. First, these clitics appear in the context lex fnc lex, where the
function word could conceivably cliticize to the preceding word, to the following word,
or to some higher prosodic constituent, or could promote to p-word status on its own.

¹ Sic. Hoče is singular, though its ě is long: jer je ona — kako reče — bila dosta na selu, pa sada hoče da
bude u živahnom dijelu grada, a ne u kakvoj god zabitnoj ulici ‘for she—as she said—had had enough
of the village, and now wanted to be in the lively part of the city, not in some god-forsaken street’.
Moreover, the following lexical word in each case is one that bears initial falling accent in isolation, so that whether or not it transfers its accent to the function word will reveal whether the function word is an internal proclitic:

(3) … vȉšë nȅ plačë. ‘isn’t crying anymore’
    … pȗt ōd kučë… ‘way from home’
    … hȍćë da bȗdë… ‘wants to be’
    … tâmù i t mùšu. ‘gloom and darkness’
    Rùke su im dûge // ‘their arms are long’

Yet as we see, despite holding constant their prosodic context, we observe transfer to some function words (ne, od), but not to others (da, i, su im). This is a challenge for the interface constraint approach, which must derive these differences from how interface constraints interpret these words’ different syntactic contexts. A principal goal of this and the following chapter is to argue that this is the correct approach.

The decision to concentrate on these five categories excludes a few other classes of words that are sometimes clitic, but which bring with them a number of additional complications that are too much to address adequately here. Other sometimes clitic categories include full (non-peninitial) pronouns (5.2.3), deictic and indefinite pronouns, semi-functional adverbs (see the adverbial introducers in 4.5.1), and numerals.

4.2.3 Traditional evidence for clisis

Clitics in BCS are traditionally classified into enclitics and proclitics—that is, somehow phonologically dependent on a preceding or following word, respectively. Of the five categories that we’re looking at, the PCs are conventionally considered enclitics, while the others—ne, prepositions, complementizers, and conjunctions—are considered
proclitics. However, this study will support the more recent view that the range of clitics’ prosodic representations is more diverse than simple enclisis and proclisis.

Let’s begin by reviewing the basis for the traditional classification of clitic types. At a descriptive level, perhaps the most frequently cited characteristic of clitics is that they lack accent. Lack of accent is observed with all clitic categories, including *ne*, prepositions (*o*), complementizers (*kad, da*), conjunctions (*i*), and PCs (*se, je*):

(4) Clitics generally lack word accent

a. Kad nātoč, vīdelo se da je čisto vīno, črno i gūsto.
   *when* poured *saw* RFL C AUX *clear* wine dark **and** thick
   When he poured, the wine appeared clear, red and thick. (MS:61)

b. Ōna je mīslīla, da sādā ne ōvisī o ēdevōj i mātērinōj vōljī //
   *she* AUX *thought* C now **not** depends **on** father’s **and** mother’s **will** //
   She thought that now she didn’t depend on father and mother’s will // (MS:79)

However, it isn’t accurate to say that clitics in BCS never bear accent. As we’ve seen, proclitics—most frequently *ne* and prepositions—can exhibit accent that transfers from, and is determined by, a following word (see 2.2.4):

(5) Accent transfer to proclitics

a. Īprō pōglēd ū njū i nē mīcē se.
   pointed look **at** her and **not** moved RFL
   He looked at her and didn’t move. (MS:48)

b. // ali nam īpāk nē pohrī ū pomoč.
   // **but** us nevertheless **not rushed** to **help**
   // **but** nevertheless you didn’t rush to help us. (MS:113)

For this reason, some descriptions distinguish ‘clitics’ from ‘accentogenetic’ words—the latter designating words that determine an accent, independently of whether
they also transfer their accent to a proclitic. By this description, clitics are characterized not by accentlessness, but by non-accentogenicity.

However, there’s a problem with the use of accent transfer to diagnose proclisis. On one hand, it shows fairly clearly that some words are proclitic. On the other hand, the traditional proclitics don’t always get transfer where they might be expected to:

(6) Variation in accent transfer

<table>
<thead>
<tr>
<th>Transfer</th>
<th>No Transfer</th>
</tr>
</thead>
<tbody>
<tr>
<td>i drugō</td>
<td>i drūgō</td>
</tr>
<tr>
<td>då znām</td>
<td>da znām</td>
</tr>
<tr>
<td>prěko zīda</td>
<td>preko zīda</td>
</tr>
</tbody>
</table>

We find such variation across dialects, contexts, and particular combinations of words.

We also sometimes fail to find the expected evidence for enclisis, when putative enclitics don’t follow an accented word on which they’re plausibly enclitic. This is illustrated in the following example from Stevanović (1970), which the author divides into ‘accentual units’ (akcenatske celine). Here, the presumed enclitic si precedes, not follows, the only accented word (vido) in its unit:

(7) Enclitics, proclitics, and accentual units (Stevanović 1970:165)

Tō // da si vido, // drūže mōj, // da prēvēnēsī nēbo i zēmlju.
that C AUX saw friend my C invert and heaven and earth
It is as you’ve seen, my friend, that you move heaven and earth.

---

2 I’ve changed Stevanović’s separator (/) to the break symbol used in this study (//). I’ve also added a break between moj and da, which I think Stevanović omitted because of the explicit punctuation there.
Stevanović takes such examples into account in his definitions of proclitic and enclitic, adopting the view that while proclitic and enclitic behavior doesn’t necessarily hold at the level of the word, it holds at the level of the accentual unit:

But proclitics include not only those words to which falling accent transfers from the first syllable of immediately following words, but rather all words that have no accent of their own, and which form an accentual unit with a following word… Similarly without accent, and always without accent at that, are enclitics, which include all unaccented words that form an accentual unit with immediately preceding words… Enclitic words are found not only after the accented words with which they’re connected, but sometimes before them too (Stevanović 1970:164-165).

By these criteria, si is enclitic in the sequence // da si vido // because it shares an accentual unit with an accented word (vido), and because it follows a word within its unit (da), even though these aren’t the same word.

Stevanović’s definitions of clisis illustrate an assumption that underlies many descriptions, yet is antithetical to the rigorous interpretation of the evidence for clisis, which is that enclitics are always enclitic, and proclitics proclitic, even when they deviate

3 'Ali nisu proklitike samo te reči na koje se prenose silazni akcenti s prvog sloga reči što stoje neposredno iza njih, već su proklitike sve reči koje nemaju svoga sopstvenog akcenta već čine akcentatsku celinu s rečju iza sebe… Bez akcenta, i to uvek bez akcenta su i enklitike, u koje idu sve neakcentovane reči koje akcentatski čine celinu sa neposredno prethodnim rečima… Enklitičke reči ne stoje samo iza akcentovanih reči za koje su vezane, već ponekad i ispred njih’.

4 It seems likely that accentual units correspond more or less to the phonological phrases and intonational phrases of the Prosodic Phonology framework. Stevanović provides one other example of this kind:

(i) Proměnio se // da ga ne pôznaš; // Jer ga od glavê // do pêtê ispûnjâvâ changed RFL C him not recognize because him from head to heel fills jêdino ôsečânje // da je svê // ôvo njêgovo.
sole feeling C AUX all this his

He’s changed so that you wouldn’t recognize him; for he’s filled from head to toe with the sole feeling that all this is his own. (Stevanović 1970:165)

Explicit divisions into accentual units like Stevanović’s are potentially informative to analyses of prosodic phrasing (see 4.6). However, the paucity of such explicit descriptions, and the lack of distinction among (hypothetical) I-level and P-level prosodic breaks, rule out progress on this question here.

Another criterion of enclisis or proclisis has to do with syntactic closeness, of one kind or another, to a preceding or a following word, respectively. Proclitics can’t be completely separated from their following complements: ne immediately precedes its verb (see 4.3), and prepositions precede at least one word of their NP (4.4). Conversely, enclitics are necessarily peninitial—that is, they follow some other word in their clause, or within some phonological domain, depending on the description (see 5.2).

To summarize, the traditional evidence that words are enclitic or proclitic usually amounts to one or more of the following points. First, clitics aren’t accentogenic. Second, they form accentual units of some kind with preceding or following words. Third, they form syntactic units of some kind with preceding or following words. Last, enclitics and proclitics each have their own special properties: proclitics can get accent transfer from a following word, whereas enclitics exhibit a unique peninitial word order.

I also observed that traditional descriptions typically posit fairly regular classes of enclitics and proclitics, even when these fail to exhibit canonical enclitic and proclitic behavior. In this and the following chapter, I’ll argue for an alternative view, that non-canonical behavior is evidence for non-canonical prosody.

5 Lehiste and Ivić (1986:172) descriptively distinguish combinations where accent transfers to a proclitic (e.g. zà brata ‘for brother’) from those where no transfer is observed (za bráta) as ‘accentual words’ versus ‘accentual measures’, respectively, but seem to assume that both cases are instances of proclisis.
4.2.4 Situating clitics in prosodic structure

A development that moved descriptions of clitics beyond their lack of stress was the enrichment of structures in Prosodic Phonology (see 1.3). This includes the idea that stress is a property not of syntactic words, but of prosodic words that may not correspond perfectly to syntactic words (Dixon 1977a, 1977b), and moreover, that prosodic words are grouped into larger constituents, all of which are possible units of analysis (Selkirk 1978). This raises the possibility that clitics aren’t always phonologically dependent on other words, but might be parsed directly by higher prosodic constituents.

However, despite the availability of other analyses, early studies of clisis across languages tended to assume that clitics are always prosodic word-internal (Zwicky 1977, 1985, Klavans 1982, 1985, Zwicky and Pullum 1983).\(^6\)


Subsequent research indicates that some languages parse clitics directly by constituents above the p-word, such as the clitic group, P-phrase, or I-phrase (Nespor and Vogel 1982, 1986, Hayes 1984, Berendsen 1986, Inkelas 1989, Zec and Inkelas 1990, 1993).

\(^6\) This isn’t to say that these works don’t recognize phonological differences between clitics and affixes, but that they distinguish them by the presence versus absence of morphological boundaries, or by comparisons to compounds, rather than by the possibility of parsing by prosodic constituents above the word.

However, there are some recent proposals that BCS clitics are parsed directly by higher prosodic constituents. Reworking Zec’s (1993) analysis, according to which all dialects parse prepositions by p-word, but differ with respect to whether accent transfer can cross p-word edges (see 2.4.8, 4.5.5), Selkirk (1995a, 1996) proposes instead that variation in transfer depends on whether prepositions are internal or affixal clitics parsed by p-word, or free clitics parsed directly by P-phrase. Schütze (1997) defends Zec’s position, but in terms of Selkirk’s Prosodic Clitic Theory framework.

Building on this work, Zec (1997, 2002, 2005) offers a unified prosodic analysis of several clitic types, including PCs, prepositions, the conjunctions *i* and *ni*, and full and indefinite pronouns. She analyzes these variously as internal, affixal, or free clitics. As the most complete formal analysis of the BCS clitic system to date, this serves as a standard by which to gauge the analysis that I’ll propose in this chapter.

O’Connor (2002) also appeals to the possibility of free clisis. He addresses a particular problem in PC placement, which is that the PCs can be found either after the first word of their clause, or after the first syntactic phrase (see 5.2.2). He proposes that this reflects whether PCs are directly parsed by p-word or P-phrase, respectively.

The assumption that all BCS clitics are p-word-internal nevertheless persists. This can probably be ascribed to two main factors. One is the still widespread assumption that Strict Layering is inviolable. The Exhaustivity component of Strict Layering rules out representations where a clitic is parsed directly by P-phrase. In the framework assumed here, however, such parses aren’t ruled out.
Another factor sustaining internal clitic analyses is that, despite the volume of research on BCS clitics, it tends to focus either on the PCs, or on proclitics. This produces claims specific to particular clitic types, without regard to the consequences for the analysis of other types. Here, I intend to contribute to the less explored program, highlighted by Radanović-Kocić, that seeks generalizations across clitic types.

4.2.5 Properties of prosodic word and intonational phrase

Discovering whether clitics are internal to prosodic words, or free clitics parsed directly by higher prosodic constituents, depends on our being able to identify these constituents. Therefore, I’ll review here what I take to be the specific properties of prosodic words and intonational (I-) phrases in BCS.

As for phonological (P-) phrases, while these will prove integral to determining the properties of prosodic clitics, their properties—indeed, their very existence—in BCS are poorly understood. I therefore leave discussion of P-phrases to later sections, when there is sufficient evidence to say something about them (see 4.5, 4.6).

Work on the prosodic phonology of BCS has established several correlates of p-words and I-phrases, which are summarized here:

(8) Properties of prosodic word and intonational phrase

prosodic word: domain of word accent
domain of nuclear length neutralization
corresponds to the lexical word

intonational phrase: domain of phrase accents (intonational tunes)
domain of pitch range manipulation
domain of focus realization
demarcated by pauses
corresponds to the comma phrase
Most of the correlates in (8) are phonological or phonetic patterns that refer to some consistent domain. For example, p-word defines the domain for several significant generalizations concerning the distribution of accent (see 2.3) and the neutralization of nuclear length (3.4). The analysis of these correlates of prosodic wordhood in chapters 2 and 3 yielded several specific diagnostics for the locations of p-word edges that will guide the analysis of prosodic clisis in chapters 4 and 5.\(^7\)

Similarly, I-phrase is identified as the domain of several observable phenomena, especially intonation (Lehiste and Ivić 1986, Inkelas and Zec 1988, Zec 1997, 2005, Godjevac 2000a, 2000b, Smiljanić and Hualde 2000, Smiljanić 2004). Here, I’ll adopt Godjevac’s proposed representation of I-level intonational tunes as categorical tonal targets in the framework of Pierrehumbert (1980).\(^8\)

Godjevac identifies three phonetic correlates of I-phrase in BCS: phrase accents, pitch range manipulation, and focus realization. The phrase accents comprise five I-level intonational tunes, with these meanings and shapes:

\[(9)\quad\text{I-phrase-level phrase accents (Godjevac 2000a:117-126)}\]

<table>
<thead>
<tr>
<th>context</th>
<th>descriptive contour</th>
<th>formal representation</th>
</tr>
</thead>
<tbody>
<tr>
<td>declarative</td>
<td>fall</td>
<td>L</td>
</tr>
<tr>
<td>continuation</td>
<td>rise</td>
<td>H</td>
</tr>
<tr>
<td>vocative</td>
<td>rise-fall</td>
<td>HL</td>
</tr>
</tbody>
</table>

\(^7\) Besides the word-level pitch accents and I-phrase-level phrase accents, Godjevac identifies two p-word-initial boundary tones (2000a:127-131). These are a default low (%L), and a high (%H) on focused words. However, the evidence for these is subtle, and I’m unable to use them as probes for clitic prosody.

\(^8\) Godjevac’s study of intonation is based on recordings of nine native speakers of Serbian varieties: four from Novi Sad (including Godjevac herself), three from Belgrade, one from Kruševac, and one from Valjevo (2000a:95). As far as I’m aware, the aspects of I-phrase-level intonation that are relevant to this study—in particular, the L\(^-\) and H\(^-\) phrase accents, and the coincidence of prosodic focus with I-phrase prominence—are essentially the same across the modern standards.
The pronunciation of this example will illustrate these two phrase accents:

(10) Pre neku godinu, namerim da odem u Beč.
    ago some year resolve C go away to Vienna
    A few years ago, I resolved to go to Vienna. (Isaković 1983:41)

In this pitch track, this sentence is parsed into two I-phrases, the first bearing a continuation rise, and the second a declarative fall:

(11) Continuation rise and declarative fall (DD)

In annotating this track, I’ve indicated presumed p-word and I-phrase edges. This helps to show that the words that are final in their respective I-phrases (godinu, Beč) bear not only I-level phrase accents, but I-level prominence as well, as conveyed by their longer-than-average duration. I-phrase prominence is typically final (see 4.3.6).
The pitch track also shows that the H– and L– phrase accents are realized not as pitch peaks and troughs, but as expansions and compressions of the overall pitch range (Godjevac 2000a:121). The continuation H–, for example, causes a steady rise that continues from godinu’s stressed syllable to the end of the I-phrase. For this reason, Godjevac further identifies I-phrase as the domain of pitch range manipulation.

Last, Godjevac characterizes I-phrase as the domain of prosodic focus. In contrast to unmarked utterances, where prominence and phrase accents are final in I-phrase, in contexts of focus these may be realized earlier, inside a focused constituent. This, taken with the fact that each I-phrase contains a single phrase accent, means that an utterance contains as least as many I-phrases as prosodic foci. I revisit the prosody of focus in 4.3, in connection with the prosodification of constituent negation.

Because intonational phenomena generally aren’t represented in writing, these patterns aren’t so useful in locating I-phrase edges in textual data. However, there is a fairly reliable written correlate of I-phrase, namely its demarcation by pauses. It’s for this reason that I transliterate pausal punctuation at the edges of written examples by double slashes, and its absence by ellipses (see 4.2.2):

(12) Pausal punctuation in textual examples
   a. // dok tî, Mârko, pijēš vîno i râkijû //
      // while you Marko drink wine and brandy //
      // while you, Marko, drank wine and brandy // (MS:112)
   b. Zdrȁvi smo, hvála Bȍgu, a zdrȁva su nam i dèčica.
      healthy AUX thanks God CNJ healthy AUX us and children
      We’re healthy, thank God, and our children are healthy too. (MS:50)
   c. … déte, kôjë, isplakâno i ūmîreno, sâdâ vēselo poigrâvâ…
      … child which tear-stained and calmed now happily plays …
      … the child, who, tear-stained and calm, now plays happily… (MS:120)
I assume that such explicitly indicated pauses correspond to I-phrase edges:

(13) I-phrasing extrapolated from pausal punctuation

a. #₁ dok ti, #₁ Mårko, #₁ pījēš vino i rākijū #

b. #₁ Zdrāvi smo, #₁ hvāla Bōgu, #₁ a zdrāva su nam i dēčica. #

c. … dēte, #₁ kōjē, #₁ isplakāno i ûmīreno, #₁ sādā vēsela poigrāvā…

This assumption is justified, first, by the fact that sub-sentential phrases set off by pauses are of types that are generally observed to determine I-phrases, such as vocatives (Marko) (a), parenthetical comments (hvāla Bogu ‘thank God’) (b), and appositive modifiers (isplakāno i umīreno ‘tear-stained and calm’) (c) (see 1.3). Second, these are characteristically marked by intonational tunes—such as the continuation rise—that Godjevac identifies as I-level phrase accents.

Of secondary importance in distinguishing prosodic constituents, after such domain-defined phonological patterns, are proposed correspondences between prosodic and syntactic constituents. As laid out in 1.3.4, I take as a starting point the Syntactic Grounding Hypothesis of Selkirk (2005), according to which p-words, P-phrases, and I-phrases correspond to the syntactic constituents lexical word, lexical XP, and comma phrase, respectively. That hypothesis is largely borne out in this study.

However, it’s to be kept in mind that, according to the Prosodic Clitic Theory framework, such correspondences aren’t absolute, but violable. For example, internal clisis violates word-level syntactic grounding, because a p-word is left-aligned to a function word, e.g. (dō škōlē) ‘to school’.
Even when grounding is respected, corresponding syntactic and prosodic constituents don’t necessarily correspond one-to-one. An intrusive vocative phrase, for example, can create a syntactic structure of two recursively nested comma phrases that are pronounced as at least three non-recursive I-phrases:

((14) Corresponding syntactic and prosodic constituents may be non-isomorphic

a. \([\text{CmnP} \text{ while you, } [\text{CmnP} \text{ Marko, } ] \text{ drank wine and brandy } ]\).

b. \(#_1 \text{ while you, } ##_1 \text{ Marko, } ##_1 \text{ drank wine and brandy } #\).

As another example, a particularly long utterance may be broken into several I-phrases, even if it represents a single comma phrase.

Last, another potential source of evidence for clitic prosody consists in segmental processes between clitics and nearby words. Radanović-Kocić (1988, 1996), for example, offers data from several intersegmental processes as evidence for internal enclisis:

((15) Comparisons of segmental processes between full words and clitics\(^9\)

a. (Stavi) (nož) (tamo). /žt/, */št/
   ‘Put the knife there.’ (Radanović-Kocić 1988:41)

b. (Živkin) (muž te) (voli). /št/, */žt/
   ‘Živka’s husband loves you.’ (Radanović-Kocić 1988:41)

Ideally, such phenomena would indicate whether clitics are parsed together with adjacent words, or are separated from them by some prosodic boundary. However, these and other such examples furnished by Radanović-Kocić establish only what’s already

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\(^9\) I’ve added presumed p-word edges and ungrammatical pronunciations to Radanović-Kocić’s examples, based on her description.
apparent from stress: that clitics aren’t parsed as independent prosodic words. I therefore
abandon this line of inquiry in the present study, leaving it to future work.

4.2.6 Summary

In this introduction to the investigation of clitic prosody, I expanded on the issues
that I identified in chapter 1, and defined the goals of the investigation. The two
overarching questions that I’ll be concerned with are how clitics are parsed by prosodic
constituents, and how their parsing is determined by the grammar.

I began by identifying the five clitic categories that the investigation will focus on
(4.2.2). I then provided a summary of analyses of clitic prosody in BCS, most of which
assume that all clitics in BCS are prosodic word-internal (4.2.3, 4.2.4). Last, I reviewed
the kinds of evidence that I’ll rely on for discerning prosodic structures (4.2.5). While the
most important evidence comes from word accent, I’ll also use data on nuclear length,
prosodic breaks, intonation, and correspondences to syntactic structures.

In the rest of chapter 4, I undertake case studies of several kinds of clitics that are
traditionally classified as proclitic: the negator ne (4.3), then prepositions (4.4), and last
complementizers and conjunctions (4.5).

4.3 Ne

4.3.1 Introduction

I begin the investigation of clitic prosody with the negator ne. Ne serves as a good
stepping-off place because it’s only one word, rather than a class of words. It also has
more consistent prosody than other clitics, being regularly proclitic. This, in turn, reflects its regular syntactic configuration, in which *ne* is, arguably, adjoined to the verb.

In fact, because of its close connection to the verb, *ne* is frequently considered not a clitic, but a prefix. I therefore offer several arguments in favor of treating it as a clitic—at least, under the definition of ‘prosodic clitic’ adopted here (see 1.3.2, 4.3.3).

I look first at the pattern of *ne* proclisis to verbs, establishing its regularity across dialects, then offer an interface account according to which proclisis results from syntactic adjunction of the verb to the negator. Internal proclisis is then optimal with respect to interface and prosodic constraints on prosodic words.

Then I consider a couple of contexts where *ne* promotes: when occurring as an independent utterance meaning ‘no’, and when it negates an entire phrasal constituent. I propose that promotion in the former case is inevitable and ensured by the framework itself, but is motivated in the latter case by the phonology of focus.

This case study has several consequences for the clitic system-wide analysis. One is to show that even the most proclitic of the proclitics sometimes exhibits other parsing. Another is to establish that a word’s prosody reflects its syntactic configuration as interpreted by general interface constraints, rather than arbitrary subcategorization. Last, the accounts of *ne* proclisis and promotion are later applied to other categories, demonstrating the generality of the interface contraint approach.

### 4.3.2 *Ne* proclisis

*Ne* is the most clearly proclitic of the canonical proclitics. The best evidence for this comes from accent transfer. The following data exemplify accent transfer to *ne* from
verbs in the received standard corpus (see 1.4). I divide these into cases where *ne* gets falling accent (a), rising accent (b), and no accent (c):

(16) *Ne* proclisis in the received standard\(^\text{10}\)

<table>
<thead>
<tr>
<th>lone negated</th>
<th>lone negated</th>
</tr>
</thead>
</table>
| a. zná ně zná ‘knows’ znám ně znám ‘know’
| skokoči ně skokoči ‘jumped’ prôgovorî ně progovorî ‘spoke’
| ñiskoči ně ñiskoči ‘jumped out’ — ně ñugazî ‘got into’
| b. vídî ně vídî ‘sees’ bûdî ně budî ‘will be’
| čujî ně čujî ‘hears’ skîdâ ně skîdâ ‘takes off’
| glêdî ně glêdî ‘looks’ pîtî ně pîtî ‘asks’
| möžê ně möžê ‘can’ mîrî ně mîrî ‘has to’
| pláčê ně pláčê ‘cries’ prôdê ně prôdê ‘goes by’
| c. čitâ ne čitâ ‘reads’ gòvoriş ne gòvoriş ‘speak’
| pòglêdî ne pòglêdî ‘looks at’ izlazî ne izlazî ‘goes out’
| váljî ne váljî ‘is good’ prôlazî ne prôlazî ‘goes by’
| — ne pozôvê ‘calls’ — ne odséêê ‘cuts off’

These three patterns of accent transfer reflect the underlying tonefulness of the verb: underlyingly toneless (a), toneful with initial tone (b), or toneful with noninitial tone (c) (see 2.3.5). In terms of verbs’ surface accentuation, *ne* gets transfer only from verbs that otherwise bear falling accent.

The regularity of transfer from hosts of types (a) and (b), together with the fact that type (c) hosts are exactly those from which accent can’t transfer, indicates that *ne*, though not always accented, is consistently proclitic. Conversely, we find no examples where *ne* is unaccented before a syllable with falling accent, which would show that *ne*  

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\(^{10}\) Em dashes indicate where non-negated forms were lacking in the received standard corpus.
and the following word are separated by a p-word edge. Therefore, according to the
diagnostics for clisis established in 2.3.5 and 2.4.8, *ne* is an internal proclitic.\(^{11}\)

As I explained in 1.4, in addition to the received standard, I’ll look at clisis in two
other varieties: modern BCS, as spoken by the consultants for this study, and the Piva-
Drobnjak dialect. We find that *ne* clisis is virtually identical across these varieties.

The following data illustrate *ne* parsing in Piva-Drobnjak. As in received BCS, *ne*
gets accent transfer only from verbs that in other contexts bear falling accent:

\[(17) \hspace{1cm} Ne \text{ proclisis in Piva-Drobnjak} \]

\[
\begin{array}{|l|l|l|l|l|}
\hline
\text{lone } \text{negated} & \text{lone } \text{negated} \\
\hline
\text{a.} & \text{—} & \text{nȅ vjerǔj } & \text{‘trust!’} & \text{bijo } & \text{nȅ bijo } & \text{‘was (MASC)’} \\
\text{—} & \text{nȅ nagně } & \text{‘leans’} & \text{bilo } & \text{nȅ bilo } & \text{‘was (NEUT)’} \\
\text{b.} & \text{znȃ } & \text{nȅ znȃ } & \text{‘knows’} & \text{vȋdě } & \text{nȅ vidȋm } & \text{‘see (3PL, 1SG)’} \\
\text{trebȃ } & \text{nȅ trebȃ } & \text{‘needs’} & \text{čue } & \text{nȅ čue } & \text{‘hears’} \\
\text{mȇre } & \text{nȅ more } & \text{‘has to’} & \text{dȃš } & \text{nȅ dȃš } & \text{‘give (2SG)’} \\
\text{c.} & \text{mȍgu } & \text{ne mȍgu } & \text{‘can (1SG)’} & \text{uȇvatȋm } & \text{ne uȇvatȋm } & \text{‘grab (1SG)’} \\
\text{vȃljȃ } & \text{ne vȃljȃ } & \text{‘is good’} & \text{ȇsta } & \text{ne ȇsta } & \text{‘remains’} \\
\hline
\end{array}
\]

A notable exception to the otherwise regular transfer in these data is nȅ bȉlo (a),
where, based on the accentuation of lone bȉlo, we would expect no transfer. Since this
particular example is common, I assume that it’s a lexicalized exception.\(^{12}\)

Another difference in this dialect, as compared to the received standard, is the
greater frequency of new transfer (see 2.2.4)—compare nȅ znȃ, received nȅ znȃ ‘doesn’t
know’. While this shows that the accentuation of individual words sometimes differs

---

\(^{11}\) An exception to regular transfer in MS is odgȇovoro, nȅ odgovoro ‘answers’, where *ne* is unexpectedly
accented (compare regular ne gȇovoro, nȅ progovoro above). This may be due to focus (see 4.3.6).

\(^{12}\) Nȅ bȉlo is attested four times in the corpus. An irregular exception is transfer in nȅ vȃljȃ ovȋ sȃmȃr ‘this
packsaddle is no good’ (V:200); possibly for focus. Compare regular ne vȃljȃ, of which one occurrence.
between dialects, the accentual system remains essentially the same. I conclude that *ne* is an internal proclitic in Piva-Drobnjak, just as in the received standard.

Last, modern data confirm that *ne* is an internal proclitic across the standards, though with a few minor differences in individual *ne*-verb combinations. The data in (18) and (19) compare modern negated forms to available received forms. In these first examples, accent usually transfers to *ne* from the following verb as expected, based on received accentual patterns (a), though it sometimes doesn’t (b):

(18) Some cases where accent transfer to *ne* is expected\(^\text{13}\)

<table>
<thead>
<tr>
<th>modern</th>
<th>received</th>
</tr>
</thead>
<tbody>
<tr>
<td>'ne plače (4)</td>
<td>ně plačě  `cries'</td>
</tr>
<tr>
<td>'ne može (4)</td>
<td>ně možě  `can (3SG)'</td>
</tr>
<tr>
<td>'ne tražim (4)</td>
<td>ně trážě  `seek (1SG, 3PL)'</td>
</tr>
<tr>
<td>'ne nudim (4)</td>
<td>nűdíti (B)  `offer (1SG, INF)'</td>
</tr>
<tr>
<td>'ne znam (2), 'ne znamo (3)</td>
<td>ně znām  `know (1SG, 1PL)'</td>
</tr>
</tbody>
</table>

Likewise, transfer to *ne* is generally lacking where expected (a), though there are cases where transfer unexpectedly applies in the modern data (b):

(19) Some cases where accent transfer to *ne* isn’t expected\(^\text{14}\)

<table>
<thead>
<tr>
<th>modern</th>
<th>received</th>
</tr>
</thead>
<tbody>
<tr>
<td>ne 'čita (3)</td>
<td>ne čítā   `reads'</td>
</tr>
<tr>
<td>ne 'reče (3)</td>
<td>rěčěm, rěčěm  `say (3SG, 1SG)'</td>
</tr>
</tbody>
</table>

\(^{13}\) In these modern data, I mark stress rather than pitch accent (see 2.2.8), and indicate, in parentheses, how many consultants gave each form. No speaker was consulted on every form. The received examples are from MS, or, where noted, from Benson (see 1.4).

\(^{14}\) Some examples (*liječi, odsiječe*) have ijekavian and ekavian variants (see 1.2), but this doesn’t affect the fact that their accent is expected not to transfer, because their accent in conservative Neo-Štokavian varieties is rising.
ne ŭzelimo (4) ŭželi ‘wish (1PL, 3SG)’
ne odsi'ječe (1), ne od'seče (1) odsijèčëm, odséčëm (B) ‘cut off (3SG, 1SG)’
b. ne 'mogu (3), 'ne mogu (2) ne mògu ‘can (1SG)’
ne li'ječi (2), 'ne leči (1) lijèčiti, léčiti (B) ‘heal (3SG, INF)’

In all cases where transfer unexpectedly did or didn’t occur, I found variation across speakers, such that every ne-verb combination was stressed by some—and usually most—speakers as in the received standard. I interpret these results to show that ne is an internal proclitic in modern BCS, but that speakers differ in how they classify verbs into those from which accent transfers, and those from which it doesn’t.

It’s likely that this has to do with the absence of a falling-rising contrast in some varieties (see 2.2.6). In the received standard, transferring hosts are those that, alone, bear falling accent. In varieties that lack a falling-rising contrast, the difference between transferring and non-transferring hosts may be purely lexical. We might expect confusion especially with verbs with alternating accent, or in which the falling-rising contrast isn’t protected by a long nucleus, e.g. mògu, mòžë ‘can (1SG, 3SG)’.

I conclude that ne, preceding verbs, is an internal proclitic in all three varieties.

### 4.3.3 An account of ne proclisis

Why is ne proclitic? It’s been noted that ne is not only phonologically proclitic on the verb, but is also syntactically inseparable from it, and that these two facts don’t seem coincidental. In fact, some consider ne a prefix on the verb, which would explain both its word order and its accentuation (Inkelas and Zec 1988, Zec 2005).

Other facts, however, indicate that ne is a free syntactic word. One is that ne can stand alone as an independent speech act meaning ‘no’. Another is that ne negates not
only lone verbs, but phrasal categories as well, e.g. *ne što je nisu volele* ‘not that they didn’t love her’ (see 4.3.6).

Next, it happens that there’s also a *ne* that negates nouns and adjectives, whose more affix-like behavior emphasizes the cliticness of the verbal negator:

(20) Nominal and adjectival *ne* (Benson)

a. *usupeh, uspjeh* ‘success’    c. *nēsuspeh, nēuspjeh* ‘failure’

b. *pōznāt* ‘known’    d. *nēpoznāt* ‘unknown’

This *ne-* is affix-like in that it takes stems only of certain categories, and affects the accentuation of the resulting word, causing any underlying tones in its stem to delete (Inkelas and Zec 1988). Thus, the negated forms *neuspjeh, nepoznat* have default falling accent. The negator *ne*, by contrast, negates all phrasal categories as well as verbs, and affects accent only insofar as it adds a syllable to its host’s accent domain.  

A similar point can be made based on a handful of irregular verbs that aren’t negated by free *ne*, but exhibit suppletive negative forms whose negative portions illustrate what bound, affixal verbal negation looks like:

(21) Verbs with suppletive negative forms (Benson)

<table>
<thead>
<tr>
<th></th>
<th>‘have’</th>
<th>‘be, AUX’</th>
<th>‘want, FUT’</th>
</tr>
</thead>
<tbody>
<tr>
<td>plain</td>
<td>negated</td>
<td>plain</td>
<td>negated</td>
</tr>
<tr>
<td>INF</td>
<td>imati</td>
<td>nēmati</td>
<td>biti</td>
</tr>
<tr>
<td>1SG</td>
<td>ĭmām</td>
<td>nēmām</td>
<td>jēst(e)</td>
</tr>
<tr>
<td>3SG</td>
<td>ĭmā</td>
<td>nēmā</td>
<td>nīje</td>
</tr>
</tbody>
</table>

15 Inkelas and Zec observe that the negator patterns with verbal prefixes in not deleting its host’s accent. In their view, this shows that it’s a verbal prefix, as opposed to a nominal/adjectival prefix (1988:235, n16).

16 I leave *ne biti, ne htjeti* with accent unmarked because I have no information on their accentuation.
The negative parts of these suppletive forms typify true affixes, combining with bound stems, and exhibiting stem-determined allomorphy. The regular negator *ne*, by contrast, combines with free verbs, and is invariant in form. I conclude that *ne*, though prosodically clitic, is a free syntactic word—that is, a terminal X°.

In other respects, however, *ne* is less free than other terminal heads. First, as we’ll see, proclisis is more regular with *ne* than with any other proclitic category. Also, *ne* and verb are not only syntactically inseparable, but exhibit some of the same properties as lone verbs. For example, the *ne*-plus-verb unit can precede the interrogative PC *li*, which follows only single words (see 5.2).

Based on these facts, I propose that *ne* occupies the terminal Neg°, taking VP as complement, but that the verb overtly adjoins to *ne*. Take, for example, the following negated verb (*ne može*), which exhibits more or less default word order, following the subject (*Vlada*) and adverbial modifiers, but preceding its complement:

(22) // jer Vlada u ovom sastavu više ne može da funkcioniše.  
   // because the government can’t function anymore with this structure. (*Kurir*)

This diagram of NegP illustrates the adjunction analysis. The subject raises out of VP to its PF position (see 5.2), while the verb raises and adjoins to Neg°:
(23) V-to-Neg adjunction

In terms of vocabulary insertion, the negator is freer than affixal *ne-* because it’s inserted in a head position (Neg°). I assume that affixal negation, by contrast, is inserted in a sub-head position internal to V°. Yet despite the negator’s status as a head, it moves with the verb as a single head because the branching Neg° moves as a head.

Further, V-to-Neg adjunction is consistent with a couple of general phenomena in BCS. First, it maintains the generalization that free *ne* occurs only with phrasal complements. Second, under this account *ne* becomes one of several functional heads in the verb’s extended projection to which the verb adjoins overtly. Overt verb adjunction is observed also to complementizers (see 4.5.5) and to peninitial clitics (see 5.2).

Now to return to the prosodic analysis, syntactic adjunction provides an account of *ne* proclisis. Assume that the branching Neg° inherits the lexicalness of its lexical daughter V°, yielding a recursive lexical word: [ne može]v. In this I follow Basri et al. (1998), who propose in their account of prosodic clisis in Makassarese that a branching D° head created by noun-to-determiner adjunction inherits lexicalness from N°.

Under the right constraint ranking, the prosodic grammar then parses this recursive lexical word structure by internal proclisis. This tableau shows that the crucial ranking is p-word Nonrecursivity over left word edge alignment:
A recursive lexical word is optimally parsed by internal clisis

\[
\begin{array}{|c|c|c|}
\hline
\text{sentence} & \text{NRC(w)} & \text{ALIGN-L(lex,w)} \\
\hline
\text{a. } \rightarrow \text{(nê možê)} & \ast & \ast \\
\text{b. ne (môžê)} & \ast & \ast \\
\text{c. (ne (môžê))} & \ast & \ast \\
\hline
\end{array}
\]

(I take accent on ne as necessary and sufficient evidence of internal proclisis; see 2.4.8.)

In this tableau, high-ranking NRC(w) rules out affixal proclisis (c), which is otherwise ideal because it achieves the best alignment of p-words to lexical words. Parses (a) and (b), by contrast, satisfy Nonrecursivity, but violate lower-ranking word alignment by failing to match either the inner or the outer lexical word to p-word.

As for why internal proclisis wins over free clisis, this emerges without further ranking from the constraint set adopted in 1.3, because internal proclisis does as well or better than free clisis on every constraint (with respect to this input). Internal proclisis (a) surrounds both lexical words in one p-word, satisfying WRAP(lex,w), and leaves no extra syllables to be parsed by P-phrase, satisfying EXH(P,s):

The constraint set rules out free clisis in a recursive lexical word

\[
\begin{array}{|c|c|c|c|c|}
\hline
\text{sentence} & \text{NRC(w)} & \text{L(lex,w)} & \text{WRAP(lex,w)} & \text{EXH(P,s)} \\
\hline
\text{a. } \rightarrow \text{(nê možê)} & \ast & \ast & \ast & \ast \\
\text{b. ne (môžê)} & \ast & \ast & \ast & \ast \\
\hline
\end{array}
\]

This tableau therefore makes no argument for ranking L(lex,w) with respect to WRAP and EXH, because some version of proclisis wins under any ranking. In other words, any head-adjunction structure that includes at least one lexical word is predicted, by this constraint set, to yield either internal or affixal clisis. I’ll show later that this
prediction does further work for the overall analysis, accounting not only for internal clisis of *ne*, but also of complementizers (see 4.5.5) and peninitial clitics (5.3.4).

Although it’s possible to get proclisis without syntactic adjunction, by prosodic constraints alone (Selkirk 1995a), comparisons across clitic categories will show that that approach is better reserved for preposition proclisis (see 4.4.6). The eventual clitic system-wide interface constraint analysis captures both the greater regularity of *ne* proclisis, and the possibility of preposition proclisis in some dialects, while assuming more or less identical function word syntax across dialects.

I conclude that *ne* proclisis results from how V-to-Neg adjunction is parsed by the prosodic grammar, and need not be motivated by any subcategorization or other property unique to *ne*.

### 4.3.4 Ne promotion by independence

Next, recall that under the interface constraint approach to clitic prosody, we don’t expect that function words should always cliticize, but that they should sometimes promote as well, if their context and the prosodic grammar make this optimal. This is, in fact, what we find. In what follows, I’ll discuss some of the contexts where *ne* determines its own prosodic word, and how they’re accounted for by the interface grammar.

An account of promotion is important for several reasons. First, it enables us to factor out patterns of promotion from generalizations over clisis. Further, subtle differences in promotion patterns across function word categories provide evidence for how they’re parsed as clitics. Last, the findings support one of the principal claims of the
dissertation: that parsing patterns aren’t inherent in particular words, but are determined by how their syntactic contexts are interpreted by the interface.

In BCS, function words promote in at least three distinct contexts: when they’re prosodically heavy, when they’re focused, and when they represent independent speech acts. An example of the last kind is when *ne* occurs alone as a command, negative response, or other use that would be translated ‘no’:

(26) Independent *ne* promotes

a. Slâvko vidî Õlg? **Nê**. (modern)
   Slavko sees Olga  **no**
   Does Slavko see Olga? No. (Browne 1993:348)

b. // a tî lijènêînî nêcêê // … // *nê*, tâkô nê smîjê biti // (received)
   // but you lazybones not+FUT // … // **no** thus not is allowed be //
   // oh no you won’t, lazybones// … // no, that’s not allowed // (MS:67)

*Ne* promotion in such contexts is unsurprising in the present framework. By the assumptions that a speech act is a comma phrase, that a comma phrase determines an I-Phrase, and that every prosodic constituent contains a head, independent *ne* determines a stack of coextensive prosodic heads, from I-Phrase to mora.

This is represented graphically in this more detailed analysis of (26)b:

(27) As an independent speech act, *ne* determines a stack of prosodic heads

<table>
<thead>
<tr>
<th>I-phrases:</th>
<th>#</th>
<th>##</th>
<th>#</th>
</tr>
</thead>
<tbody>
<tr>
<td>p-words:</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>feet</td>
<td>⟨ ⟩</td>
<td>⟨ ⟩</td>
<td>⟨ ⟩</td>
</tr>
</tbody>
</table>
   **no**, that’s not allowed

---

17 In order to simplify this example, I’ve ignored the moraic level, since my analysis of word prosody predicts that both tâkô and smîjê end in unsyllabified moras (see 3.3.2, 3.4.5). I also omit P-phrases, whose parsing patterns aren’t yet established (see 4.2.5, 4.5).
Thus, independent ne’s promotion to p-word status is only one link in a chain of prosodic events that result from its status as a comma phrase.

To expand on this account, the principles that determine ne promotion in such contexts are, first, the assumption that comma phrases determine I-phrases (see 4.2.5). While I assume this to obtain consistently in BCS, the framework allows for the possibility that this isn’t the case in other languages, since the correspondence between comma phrases and I-phrases is enforced by violable constraints.

The second crucial assumption, on the other hand, is taken to be universal. This is the principle of Headedness, by which every prosodic constituent, excepting moras, contains exactly one head of the next lower level in the Prosodic Hierarchy (see 1.3). We predict, then, that if a word or phrase determines an I-phrase, then it also determines at least one P-phrase, p-word, foot, syllable, and mora always, in every language.

Alternatively, Headedness too can be treated as violable (Zec 2005, see 2.4.8). In this case, it must outrank whatever constraints forbid promotion:

(28) Headedness as a violable constraint

<table>
<thead>
<tr>
<th>ne</th>
<th>CommaP</th>
<th>HEADEDNESS</th>
<th>ALIGN-L(w,lex)</th>
<th>ALIGN-R(w,lex)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>→ #₁ {P(w nê )} #</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>b.</td>
<td>#₁ ne #</td>
<td>!</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

However, since I know of no reason to suppose that Headedness is ever violated in BCS, I maintain it as an absolute requirement on representations.
4.3.5 Ne promotion by focus

Another context where ne is sometimes observed to promote is constituent negation, where ne negates some phrasal constituent, rather than the verb. Whereas in the available modern data, constituent-negating ne is unaccented (a), in the received corpus ne consistently promotes in this context (b):

(29) Constituent-negating ne is unaccented or promotes

a. Slavko vidi ne Olgu nego Marija. (modern)
   Slavko sees not Olga rather Marija
   Slavko sees not Olga but Marija. (Browne 1993:361)

b. // mogao bih ti ne ocem vec djedom biti // (received)
   // could CND you not father rather grandfather be //
   // I might be, not your father, but your grandfather // (MS:67)

The prosodifications of constituent negation in these varieties have in common only that ne fails to procliticize to its complement, as it does in verbal negation. Rather, ne either is unaccented, or promotes alone, depending on dialect.

I’ll conclude that in the former case, ne is unaccented because it’s a free clitic parsed directly by P-phrase. Its free clisis, in turn, reflects its syntactic representation in this context as a free functional head. That is, I claim that the V-to-Neg adjunction that induces ne proclisis to the verb obtains only in clause-wide negation, where Neg° is part of the extended projection of the verb. When ne negates some XP other than a clause, there’s no adjunction to Neg°, and ne remains a free syntactic head.\(^\text{18}\)

\(^{18}\) Strictly speaking, constituent negation contrasts not with clausal negation, but with negation of clauses that are IPs. Whereas IP clauses are negated by regular verbal negation, CP clauses are negated by independent, constituent-negating ne, e.g. Parlamentarni bi trebalo [CP da raspravljaju kako unaprijediti živote svojih gradana], a ne [CP da rade samo za sebe] // ‘Members of parliament would need [to resolve how to improve the lives of their citizens], and not [to work only for themselves]’ (Jutarnje).
Why then does constituent-negating *ne* promote in the received corpus? First, a few additional examples illustrate the regularity of promotion in this context:

(30) Constituent-negating *ne* consistently promotes in the received corpus

a. // stărîjă za desêtak gōdină, nē vîšē! // older by about ten years not more // older by about ten years, no more. (MS:55)

b. Nē što je nisù vòlele, već nisù mògle // not c her not+AUX loved rather not+AUX could // (It was) not that they didn’t love her, but that they couldn’t // (MS:124)

c. … u žîvâнhm dîjelû grāda, a nē u kâkvoj gōd zâbîtnoj ūlîci // … at lively part city but not at whatever kind remote street // … in the lively part of the city, not in some god-forsaken street // (MS:76)

I propose that *ne* promotes in constituent negation in order to realize prosodic focus. Interestingly, constituent negation is generally dispreferred in favor of negating the verb, but when it is used, it usually requires an explicit positive alternative to whatever is negated (Browne, Kordić). In other words, its function is to compare alternatives.

A glance at the preceding examples shows that all of these compare the negated phrase to some positive proposition. In fact, we find that *ne* promotes even before a lone verb, when negation is paired with some positive alternative:

(31) Constituent-negating *ne* promotes even before a lone verb (received)

// nē klēknē, već pâdā nā grob i zâjecâ // // not kneels rather falls on grave and begins to sob // // (she) doesn’t kneel, but falls on the grave and begins to sob // (MS:119)
I deduce that the verb *klekne* remains in VP here, rather than raising to Neg, so that *ne* precedes an entire XP as in other cases of constituent negation. Still, while this accounts for the failure of proclisis, the question remains why *ne* promotes.

The answer, I claim, is that the constituent negation construction is inherently focusing, and that *ne* promotes in order to realize focus prominence. In semantic terms, we may think of a focused phrase as representing a set of alternatives. The pragmatic function of focus is to emphasize one of these alternatives in an informative way—that is, in a way that contributes to the discourse. Prosodically, focus is marked by special prominence or intonation (Jackendoff 1972, Ladd 1980, Gussenhoven 1983, Selkirk 1984, Rooth 1985, Rochemont 1986, Schwarzschild 1999, Kadmon 2000).

Seen in these terms, the purpose of the constituent negation construction is to convey two informative propositions, one negative and one positive, both of which are appropriately described as foci. Using the F-marking notation for designating focused material, I analyze the focus structure of the examples in (29) as follows:

(32) The constituent negation construction involves two foci

a. Slȃvko vȋdb—AaȄ [ne ne ne ne \(\text{nego}\)] MbaO:ariju F (modern)
Slavko sees not Olga, but Marija.

b. // mȍgao bih ti [nȅ nȅ nȅ nȅ \(\text{već}\) djȅdom] bȉti // (received)
// I might be, not your father, but your grandfather //

(See below for arguments that *ne* is focus-internal, but *nego, već* aren’t.)

As for the difference in how constituent negation is prosodified in the modern as opposed to the received data, I assume that, as with other dialectal differences in function word prosody, it’s most plausible that this reflects differences in the prosodic grammars
of these varieties, rather than in the syntax of focus, or of this construction. I’ll therefore pursue an account of these facts in terms of the prosodic realization of focus.

### 4.3.6 An account of ne promotion by focus

Here, I’ll present the outlines of an analysis of the role of focus in the promotion of constituent-negating *ne*. Although the properties of *ne* promotion in this construction call for a focus-related analysis, the resulting account is necessarily preliminary because we lack, at present, the detailed semantic and phonological data for a conclusive account of the interaction between function word parsing and focus. My purpose here, therefore, will be to establish the plausibility of a focus-related account, and to identify some of the issues to be addressed in further work on this problem.

Some aspects of the analysis of focus realization are established in earlier work. I’ll rely, first, on the model of focus realization that’s explored in Selkirk (1995b) and Truckenbrodt (1995), in which prominence is represented by a metrical grid (see 1.3.3), and prosodic focus is a compromise between regular prosodic prominence, and a requirement that prominence be realized inside an F-marked constituent.

The realization of focus in BCS is investigated by Grojevac (2000a, 2005), Smiljanić and Hualde (2000), Zec (2000, 2005), and Smiljanić (2004). These works agree that focus in BCS is marked by I-phrase-level prominence within a focused (F-marked) phrase, and that I-phrase prominence is, by default, final in I-phrase.

In these examples with broad (utterance-wide) focus and default word order, it’s the last p-word in I-phrase (*limun, nesreća*) that bears I-phrase prominence:
Focus prominence in broad focus contexts is I-phrase-final.  

(33) Focus prominence in broad focus contexts is I-phrase-final\(^{19}\)

a. \(#\ x\ x\ (#\ x\ #)\)
   [Jelena daje Mariji \textit{LIMUN}]_F
   [Jelena gives Mary \textit{lemon}]_F
   Jelena is giving Mary a lemon. (Godjevac 2000a:251)

b. \(#\ x\ x\ (#\ x\ #)\)
   [Desila se saobraćajna \textit{NESREĆA}]_F
   [happened RFL traffic \textit{accident}]_F
   There was a traffic accident. (Godjevac 2000a:277)

These representations simultaneously exhibit regular, I-phrase-final prominence, and satisfy the requirement that a focused phrase contain I-phrase prominence.

In contexts of narrow focus, on the other hand, where a focus is smaller than its utterance, focus realization can interfere with the regular right-prominence of I-phrases, or force the construction of multiple I-phrases. Utterances with two foci, for example, must contain at least two I-phrases, one for each focus (Godjevac 2000a:159).

This, together with my analysis of the constituent negation construction as containing two foci, indicates that examples like these comprise two I-phrases, so that every focus gets its own I-phrase-level prominence:

(34) Focus prominence in constituent negation

a. \(#\ x\ x\ ##\ x\ #\)
   \((x\ #)(x\ x)(x\ x)\)
   Slavko \textit{vidi} [ne \textit{OLGU}]_F nego [MARIJU]_F.
   Slavko sees not Olga, but Marija. (modern)

\(^{19}\) While these examples accurately represent Godjevac’s analysis of I-phrasing and prominence, I’ve adapted them by explicitly indicating word stress and prosodic bracketing. Also, the representation of se as a free clitic is based on my own analysis of peninital clitic prosody (see chapter 5). These examples also illustrate Godjevac’s observation that broad-focus sentences with a transitive verb have subject-verb order, whereas those with an unaccusative verb have verb-subject order.
b. # x ## x #
( x )( x )( x ) ( x )( x )
móga bih ti [NÈ óčem]e več [DJÈDOM]e bìti
I might be, not your father, but your grandfather (received)

By this analysis, both dialects realize mark F-marked constituents with I-phrase prominence, but differ in that prominence gravitates to an accentogenic word in modern BCS (a), but to ne in the received standard (b). In fact, if the division of (b) into I-phrases is correct, then the realization of focus prominence on ne in the received standard overrules regular I-phrase-final prominence, which would be on očem.

I’d like to suggest that this has to do with the fact that ne is structurally superior to the rest of its focus, by virtue of being the head of NegP. Specifically, I propose that this pattern reflects a directive to realize focus on the head of a focused phrase. I call this the head-of-focus hypothesis.

The most significant support for this proposal is that other functional heads, including prepositions and conjunctions, also attract focus-related prominence, though this phenomenon varies by context and dialect (see 4.5.3, 4.5.7). In functional terms, its purpose may be to explicitly delimit the left edge of F-marked material.

On the other hand, the head-of-focus hypothesis raises a number of issues, not least concerning its syntactic and semantic analysis. In this study, I offer this hypothesis as the simplest explanation for otherwise unexpected prominence on ne, prepositions, and certain conjunctions, but don’t say much about its syntax or semantics, leaving these to future work. I will, nevertheless, address here a few immediate issues.

Foremost among these issues is whether ne is even focus-internal, or lies outside the focused phrase. I claim that it’s at least plausible that ne is focus-internal. Take the
analysis in (34), roughly *I could be your [not father]_	ext{E} but [grandfather]_	ext{E}. The question is whether the first of these focused alternatives is *not father, as I claim, or just *father, which might seem a better counterpart to the second focus, *grandfather.

In support of the focus-internal analysis, I propose that *ne in this construction appears in a low, focus-level position, as opposed to its usual high position on an inflected verb or auxiliary, so that both foci fit interchangeably inside the matrix, non-focal material. Their interchangeability then yields two true propositions, in this case ‘I could not be your father’ and ‘I could be your grandfather’. If *ne were instead part of the non-focal material, then insertion of the second, positive focus into this matrix would yield the unintended interpretation *‘I could not be your grandfather’.

Another potential problem is that the hypothesis seems to incorrectly predict the locus of focus prominence in the second, positive portion of this construction. As we’ve seen, positive alternatives are typically introduced by *nego or *već, translatable as ‘but, rather’. Why don’t *nego and *već bear focus prominence?

One possibility is that *nego and *već aren’t necessarily non-focal, but are actively destressed. However, destressing is usually observed on given information, and these words aren’t clearly given in any of the examples seen so far.

I suggest, rather, that *nego and *već are matrix adverbs external to the foci in this construction, their function being to compare the two foci. If negation has a counterpart in the positive focus, then it’s some head that expresses affirmation. One proposal that unifies these functions is sigma phrase (\(\Sigma P\)), which realizes both negation and (often null) affirmation (Laka 1990, Fischer 2002). Another proposal in this vein is polarity phrase
(PolP), argued to be a clausal projection where negation, negative polarity, and positive polarity are checked, based on data from Serbian (Progovac 2005).

However, both ΣP and PolP are proposed as clausal projections. Constituent negation, by comparison, often involves negation of some non-clausal constituent. Nevertheless, building on Progovac’s analysis of negation and polarity in Serbian, I’ll assume that all instances of free negation represent heads of PolP, and that Pol° heads can take non-clausal complements as well as clausal ones.

Based on these assumptions, I propose that both foci in the constituent negation construction are PolPs, and that the positive focus has a null head. Then since it’s null, this head can’t realize focus in its phrase. This analysis is illustrated in (35). Whereas the first focus in this example (ne oćem) is headed by the overt negator ne, head of PolP, the second focus (djedom) is headed by a null affirmator, also head of PolP:

![Syntax tree](image)

This analysis has the advantages that the two foci are structurally equivalent, and that the absence in the positive focus of any counterpart to ne promotion is explained by the nullness of the affirmation that corresponds to ne. I therefore adopt the generalization of NegP to PolarityP, though I’ll continue to refer to this projection as NegP when the unity of negation and affirmation isn’t relevant.
Yet another issue for the head-of-focus hypothesis is that it seems to predict that clause-wide focus should appear on the verb, or perhaps on an inflected auxiliary. However, we saw in (33) that broad focus in BCS is realized on the rightmost p-word in I-phrase, even if this isn’t the verb—e.g. # Jelena is giving Mary a LEMON #.

On the other hand, those examples are from a modern variety. It’s in the grammar of the received corpus—and, as we’ll see, in the Piva-Drobnjak dialect—where head-of-focus prominence is observed. Unfortunately, those data aren’t rich enough to allow us to test whether lexical heads can also realize focus.

I therefore adopt the head-of-focus account of ne promotion in constituent negation. In 4.5, I’ll show that this can account also for a couple of patterns of introducer promotion and proclisis, which have in common that they put focus prominence on a functional head.

4.3.7 Summary

In this first case study of prosodic clisis, I found that ne is typically an internal proclitic on verbs. Yet contrary to its traditional characterization as inherently proclitic, ne sometimes promotes as well. Based on these findings, I proposed an account of ne parsing whereby both proclisis and promotion result from how the various syntactic contexts in which ne is found are prosodified by a general interface grammar.

I claimed first that, as a verbal negator, ne is consistently an internal proclitic, and that this reflects the regular prosodification of syntactic V-to-Neg adjunction. In this respect, ne behaves identically across dialects.
Next, I looked at a couple of situations where ne promotes: when occurring as an independent comma phrase, and when negating an entire phrasal constituent. In dialects where constituent-negating ne promotes, I argued that it has the same syntactic configuration as in other dialects—as a free functional head—but promotes to bear focus prominence, by the principle that focus is realized on the syntactic head of a focused phrase. In other words, this reflects a dialectal difference in the interface grammar.

In subsequent case studies, we’ll see, in spite of the prosodic differences across function word categories, that they share certain specific patterns. For example, I argue that complementizers and peninitial clitics, too, are sometimes clitic by adjunction (see 4.5.5, 5.3.4), and that prepositions and introducers sometimes get exceptional accent as heads of focus (4.5.3, 4.5.7). Thus, the interface constraint analysis begun here forms the basis for the analysis of other clitics throughout the dissertation.

4.4 Prepositions

4.4.1 Introduction

The next case study in function word parsing is concerned with prepositions. Like ne, prepositions are traditionally considered to be proclitic, but they present a few more challenges to analysis.

One challenge is that, since prepositions take NP complements, their hosts include all categories that can be initial in NP, namely nouns, pronouns, numerals, full adjectives, semi-functional adjectives (e.g. sav ‘all’, drugi ‘other’), and deictics. Accent transfer shows that any of these categories can provide a host for preposition proclisis:
(36) Preposition hosts are of various categories (received)

nā večėr ‘in evening’  nà gõrnji bôj ‘to upper story’
premà njöj ‘opposite her’  nà sve strâne ‘on all sides’
ù njënõm krilu ‘in her lap’  ù drugû söbû ‘to other room’
ù trò kôrâka ‘in three steps’  pò tôj màgli ‘through that mist’

Conversely, accent transfer is also observed to fail in all of these contexts:

(37) Accent transfer to prepositions can fail from any category (received)

u sümráku ‘at dusk’  u ôba üha ‘in both ears’
među nämâ ‘among us’  na säv krâj ‘on all the land’
iz njënîh ôčîjû ‘from her eyes’  jêdno preko drûgõgã ‘one over the other’
oko trò sâhata ‘around 3:00’  između tô dûvî glâve ‘between the two heads’

In 4.4, I’ll consider what I take to be the most canonical of these contexts, that where a preposition precedes a single noun. In later sections, I’ll also consider contexts where prepositions precede pronouns (see 4.5.7, 5.2.3).

Other preposition contexts raise issues, related to the syntactic structure and phonological phrasing of complex noun phrases, that are beyond the scope of the present work. In general, preposition proclisis to adjectives and numerals is less common than to other NP-initial categories, both within and across dialects (see, for example, Vuković 1940:111-118, Zec 1993:375-376).

Based on parsing in preposition-noun sequences, I argue that prepositions get only three different parses across dialects: they can be internal proclitics, or free clitics, or can promote. While identifying proclisis and promotion is fairly straightforward—based on the diagnostics of accent transfer and independent accent, respectively—some additional reasoning is required in order to show that the third parse is free clisis.
Then, having identified these patterns in preposition parsing, I offer an interface constraint account of preposition parsing that unifies it with the accounts of *ne* and word-internal prosody, and lays the groundwork for the analysis of introducers in 4.5.

### 4.4.2 Preposition proclisis to nouns

In preposition-noun (PN) sequences, only in the Piva-Drobnjak dialect does accent consistently transfer to prepositions, showing that they’re internal proclitics. These data exemplify transfer in this dialect, whereby prepositions get falling accent before toneless nouns (a), and rising accent (b) or no accent (c) before toneful nouns:

(38) N-to-P accent transfer is regular in Piva-Drobnjak

<table>
<thead>
<tr>
<th>Case</th>
<th>Example</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>pȍ polju</td>
<td>‘on field’</td>
</tr>
<tr>
<td></td>
<td>òd kastīga</td>
<td>‘from shame’</td>
</tr>
<tr>
<td>ü nogu</td>
<td>‘on leg’</td>
<td>dō koljēnā ‘to knees’</td>
</tr>
<tr>
<td>ü planinu</td>
<td>‘to mountain’</td>
<td>īz grmena ‘from bush’</td>
</tr>
<tr>
<td>ü srijedu</td>
<td>‘on Wednesday’</td>
<td>kōd kotāra ‘in district’</td>
</tr>
<tr>
<td>zā dūg</td>
<td>‘for debt’</td>
<td>mēdu ljūdi ‘among people’</td>
</tr>
<tr>
<td>sā srećōm</td>
<td>‘with luck’</td>
<td>nīza strānu ‘along side’</td>
</tr>
<tr>
<td>b.</td>
<td>ü kući</td>
<td>‘in house’</td>
</tr>
<tr>
<td></td>
<td>pò kući</td>
<td>‘through house’</td>
</tr>
<tr>
<td>ü grabāljā</td>
<td>‘onto rake’</td>
<td>sā sūncem ‘with sun’</td>
</tr>
<tr>
<td>ü žitu</td>
<td>‘in grain’</td>
<td>bèz prešē ‘without hurry’</td>
</tr>
<tr>
<td>ü Bosnu</td>
<td>‘to Bosnia’</td>
<td>ispōd grla ‘under throat’</td>
</tr>
<tr>
<td>nā jug</td>
<td>‘to south’</td>
<td>nīzā žīto ‘along grain’</td>
</tr>
<tr>
<td>c.</td>
<td>u sēlu</td>
<td>‘in village’</td>
</tr>
<tr>
<td>u plānini</td>
<td>‘on mountain’</td>
<td>do pōnōćā ‘until midnight’</td>
</tr>
<tr>
<td>u srijēdī</td>
<td>‘in middle’</td>
<td>iza zūbā ‘behind teeth’</td>
</tr>
</tbody>
</table>
As with *ne* proclisis, transfer fails only before hosts that have rising accent (c), because it’s only in such cases that tone can’t spread or be assigned to a proclitic. There are no exceptions to this pattern in the Piva-Drobnjak corpus.\(^{20,21}\)

In the received standard corpus, by contrast, N-to-P accent transfer is frequent, but irregular. These examples of transfer, like those in (38), are divided by whether the preposition gets falling (a), rising (b), or no accent (c):

> (39) N-to-P accent transfer happens sometimes in the received standard

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>ü oči</td>
<td>‘into eyes’</td>
</tr>
<tr>
<td></td>
<td>ü grlo</td>
<td>‘to throat’</td>
</tr>
<tr>
<td></td>
<td>ü skūt</td>
<td>‘(to) behind skirt’</td>
</tr>
<tr>
<td></td>
<td>ü rēku</td>
<td>‘onto hand’</td>
</tr>
<tr>
<td></td>
<td>nā mōru</td>
<td>‘on sea’</td>
</tr>
<tr>
<td></td>
<td>nā polje</td>
<td>‘outside (onto field)’</td>
</tr>
<tr>
<td>b.</td>
<td>ü kuću</td>
<td>‘into house’</td>
</tr>
<tr>
<td></td>
<td>ü kūjni</td>
<td>‘in kitchen’</td>
</tr>
<tr>
<td></td>
<td>ü sobi</td>
<td>‘in room’</td>
</tr>
<tr>
<td></td>
<td>ü godini</td>
<td>‘in (during) a year’</td>
</tr>
<tr>
<td></td>
<td>nā grob</td>
<td>‘onto grave’</td>
</tr>
<tr>
<td></td>
<td>sā grōblja</td>
<td>‘from cemetery’</td>
</tr>
<tr>
<td>c.</td>
<td>u rūci</td>
<td>‘in hand’</td>
</tr>
<tr>
<td></td>
<td>na grōbu</td>
<td>‘on grave’</td>
</tr>
<tr>
<td></td>
<td>za ikonōm</td>
<td>‘behind icon’</td>
</tr>
</tbody>
</table>

\(^{20}\) Presumably, the hosts in (a) and (b) otherwise have falling accent, and those in (c) rising accent. Unlike with *ne*, however, I don’t cite comparative examples of these hosts’ accentuation when not preceded by a preposition, because most aren’t otherwise attested in the corpus in the same form as in these examples.

\(^{21}\) A possible exception is *povolju* ‘for the sake of, because of’: *povolju mēne* ‘for my sake’, *povolju njēga* ‘for his sake’. However, though Vuković calls this a preposition, it transparently derives from *po-volju* ‘for-will’, and may therefore be treated by the grammar as other than a preposition (see the discussion of fake prepositions in 4.4.4). Another possible exception is *na vērg bērdā* ‘onto top of hill’, where *na* fails to get transfer from a complex NP. Although my impression is that transfer is less frequent from complex NPs than from lone nouns, I won’t discuss them in the present study for lack of data and space. However, with this in mind, I cite any data with complex NPs explicitly as such.
However, many other sequences exhibit no transfer where it would be expected, if prepositions were internal proclitics. Key to this point are potential hosts that bear falling accent, showing that they’re left-aligned to p-words:

\[(40)\] N-to-P accent transfer sometimes doesn’t happen in the received standard

<table>
<thead>
<tr>
<th>Noun</th>
<th>Preposition</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>u sāpi</td>
<td>‘on handle’</td>
<td>po ‘izglēdu’</td>
</tr>
<tr>
<td>u vrātnicama</td>
<td>‘at doorframe’</td>
<td>po plēćima ‘on shoulders’</td>
</tr>
<tr>
<td>za sōfrōm</td>
<td>‘behind table’</td>
<td>kod ōrgūljā ‘at (musical) organ’</td>
</tr>
<tr>
<td>za mūžem</td>
<td>‘behind husband’</td>
<td>pod bremenom ‘under burden’</td>
</tr>
<tr>
<td>od stūđēni</td>
<td>‘‘from cold’’</td>
<td>pred likom ‘‘facing image’’</td>
</tr>
<tr>
<td>do tlā</td>
<td>‘to ground’</td>
<td>spram mēsecinē ‘toward moonlight’</td>
</tr>
<tr>
<td>do zāpāda</td>
<td>‘to west’</td>
<td>oko nōgū ‘around feet’</td>
</tr>
<tr>
<td>ka zāpadu</td>
<td>‘toward west’</td>
<td>ispod kōžē ‘under skin’</td>
</tr>
<tr>
<td>ka ĕūstrvu</td>
<td>‘toward island’</td>
<td>ispod vīšānē ‘under cherry trees’</td>
</tr>
<tr>
<td>na mānastīru</td>
<td>‘at monastery’</td>
<td>pored kāpējā ‘(passing) by gates’</td>
</tr>
<tr>
<td>bez snįjega</td>
<td>‘without snow’</td>
<td>pored plōta ‘‘along fence’’</td>
</tr>
</tbody>
</table>

Recall from 2.2.7 the observation that transfer to prepositions, conjunctions, and complementizers happens less often in the modern city standards than in the traditional Vukovian standard, although transfer to *ne* remains regular. These data from the received corpus shows that this is true of at least one standard of the 1920s as well (see 1.4).

What determines whether accent transfers to the preposition? Not particular prepositions, nor particular nouns, nor the phonological shape of the sequence seems to govern this. Many prepositions (e.g. *u, na, za, oko*) are clearly internal proclitics in some sequences, and clearly not in others. Moreover, some nouns (*ulica, nebo, grad, Bog, plač*) share a p-word with a preposition (a), or not (b), in different sequences:

\[(41)\] Variation in accent transfer from some nouns in the received standard

<table>
<thead>
<tr>
<th>Noun</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>nā ulicu</td>
<td>‘(facing) onto street’</td>
</tr>
<tr>
<td>sā ulicē</td>
<td>‘from street’</td>
</tr>
<tr>
<td>ōd Boga</td>
<td>‘from God’</td>
</tr>
<tr>
<td>pō Boga</td>
<td>‘by God!’</td>
</tr>
</tbody>
</table>
nȃ nebo  ‘to heaven’  zȃ Boga  ‘for Christ’s sake!’

nȃ nebu  ‘in sky’  ŭ Boga divȏta  ‘beautiful’

põe nebu  ‘across sky’  ŭ plač  ‘into weeping’

ũ grȃd  ‘into city’  krȍz plač  ‘through tears’

b. na ūlicu  ‘(going) onto street’  oko grȃda  ‘around city’

po ūlicama  ‘on streets’  protiv Bȍga  ‘against God’

preko nȅba  ‘across sky’  od plȃča  ‘from weeping’

In fact, the sequence na ūlicu is attested both ways (nȃ ūlicu, na ūlicu).22

It appears that such PN sequences represent exceptional, lexicalized transfer. These tend to involve frequent nouns (e.g. ruka ‘hand’, majka ‘mother’, kuća ‘house’) and idioms (e.g.oko vrata ‘(burden) around neck’, preko praga ‘across threshold’). It’s just these sorts of sequences that we might expect to lexicalize, though the large number of them is perhaps surprising—many more than in (39) and (41).

I conclude that these instances of PN proclisis reflect a tendency in the received data to cleave, actively and consciously, to a Vukovian standard. In terms of the formal analysis, I treat these PC sequences as an exceptional, Vukovian stratum of the vocabulary that’s protected by special faithfulness (see 4.4.6).

Last, N-to-P transfer is even less common in modern than in received BCS. I recorded consultants pronouncing several PN combinations (in context) in which accent might be expected to transfer. Some of these are given below, including some less

---

22 MS:76: Īmali su tri lijepe Ǜrđene sȍbice sa četiri prȏzora nȃ ūlicu // ‘They had three nicely ordered rooms with four windows on the street’. 45: Kad izádo na ūlicu, idȅ svȅt kao i ȍbici ȃ // ‘When I went out onto the street, the world was going on as usual’. 47: Zȃtvoři vrȃta, pa izáde na ūlicu i lȃgȃno se ũpȏti kum-Ǜlijinj kȗći. ‘He closed the door, then went out to the street and made slowly for Kum Ilija’s house.’

Another example where accent fails to transfer from ulica may have to do with the fact that ulica heads a complex noun phrase: Brzȏm kȍrȃcima ũpȏti se vȍjnik ka ūlici, kȏjȃ se mȍže nȃzvati glȃvnȏm // ‘With swift steps the soldier set off toward the street that could be called the main one’ (53).
idiomatic (a) and some more idiomatic (b) combinations. In almost every case, consultants pronounced these without accent transfer.\textsuperscript{23,24}

\begin{tabular}{lll}
\textbf{(42)} & N-to-P accent transfer happens rarely in the modern standards & \\
modern & received & \\
\hline
a. & u 'polje (2) & — & 'into field' \\
& na 'm jesec (2) & — & 'onto moon' \\
& iz 'priča (9) & iz priča & 'from stories' (MM) \\
& u 'grad (4), 'u grad (1) & ü grad & 'into city' (MS) \\
& od 'kuće (9), 'od kuće (1) & od kuće & 'from house, home' (MM) \\
& do 'škole (9), 'do škole (1) & dò školë & 'to school' (MM) \\
\hline
b. & na 'polje (2) & nà polje & 'outside (onto field)' (MS) \\
& na 'zimu (4) & nà zimu & 'next winter' (B) \\
& u 'pomoć (5), 'u pomoć (1) & ü pomoć & '(run, call) for help' (MS/B) \\
& kod 'kuće (3), 'kod kuće (1) & kòd kuće & 'at home' (B) \\
& 'ruku pod 'ruku (3), 'pod ruku (1) & ròku pòd ròku & 'arm in arm' (MM/B) \\
& na 'sv(ij)etu (4), 'na svijetu (1) & — & '(not for anything) in world' \\
\end{tabular}

In fact, N-to-P accent transfer is lost to such an extent in the modern standards that some formerly two-word sequences where transfer is retained are now often spelled as one word, suggesting that they’ve been reanalyzed as such:\textsuperscript{25}

\textsuperscript{23} Numbers in parentheses indicate how many consultants provided each modern variant. Vukovian forms with transfer are provided for comparison as attested in MS, MM, or B. One of nine consultants gave varying accentuations for \textit{od kuće, do škole}; I’ve counted both. One of five consultants distinguished transferred and non-transferred variants of \textit{u pomoć} with a meaning difference: \textit{Uzviknula je 'u pomoć} ‘She shouted for help’, \textit{Trčao joj je u 'pomoć} ‘He ran to help her’; I’ve counted both of these as well.

\textsuperscript{24} Most modern forms with transfer to prepositions are from just one consultant, who grew up in Sarajevo, but left Bosnia at about age 10, though he returns there often and speaks Bosnian at home. Presumably, his speech is colloquial, which may account for his higher incidence of transfer. Another consultant, raised, educated, and professionally employed in Sarajevo, showed very little transfer to prepositions.

\textsuperscript{25} Some data are unaccented because accented versions are lacking in my sources. Presumably, these would be accented in the Vukovian standard as ü vīš, pri tōm, prītōm. Pravopis gives pri tom, pri tome.
Some orthographic alternations between one and two words

<table>
<thead>
<tr>
<th>two words</th>
<th>one word</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>u vis (B,J)</td>
<td>üvīš (B,J)</td>
<td>‘upward (to height)’</td>
</tr>
<tr>
<td>ü oči (MS)</td>
<td>ūoči (MS,B,J)</td>
<td>‘on eve of (on eyes)’</td>
</tr>
<tr>
<td>ū istinu (MS)</td>
<td>ūistinu (B,J)</td>
<td>‘in truth’</td>
</tr>
<tr>
<td>pri tom (B,J)</td>
<td>pritom (J)</td>
<td>‘and what’s more (at that)’</td>
</tr>
<tr>
<td>nā polju (MS)</td>
<td>nāpolju (B)</td>
<td>‘outside (on field, LOC)’</td>
</tr>
<tr>
<td>nā polje (MS)</td>
<td>nāpolje (B)</td>
<td>‘outside (onto field, ACC)’</td>
</tr>
<tr>
<td>nā vrāt nā nōs (MS,B)</td>
<td>nāvrāt-nānōs (B)</td>
<td>‘hastily (on neck on nose)’</td>
</tr>
<tr>
<td>do sāda, do sādā (MS,B,J)</td>
<td>dōsada, dōsāda (B,J)</td>
<td>‘until now’</td>
</tr>
</tbody>
</table>

In short, accent transfer in PN sequences is regular in the Piva-Drobnjak dialect, but irregular in the received standard, and rare to nonexistent in the modern standards. Nevertheless, we’ll see by the end of this chapter that, while prepositions are less often proclitic than ne, they’re more prone to proclisis than introducers.

**4.4.3 Preposition promotion**

Next, I’ll review some data showing that prepositions also promote. Unlike ne, prepositions generally promote not by focus, but by size, when they contain two or more syllables. The usual explanation for this, which I’ll adopt with some elaboration, is that polysyllables are prosodically heavy (Zec 1997).

Interestingly, preposition promotion by size is much more common in modern BCS than in the other varieties we’re looking at. In my modern BCS data, disyllabic and trisyllabic prepositions typically, though not always, promote:

<table>
<thead>
<tr>
<th>Polysyllabic prepositions typically promote in the modern standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>'ispred 'kuće (2)</td>
</tr>
<tr>
<td>'protiv 'kralja (2)</td>
</tr>
<tr>
<td>'preko 'reda (3), preko 'reda (1)</td>
</tr>
<tr>
<td>'pered 'parka (2), pored ‘parka (1)</td>
</tr>
</tbody>
</table>
Judging from these data, while preposition promotion isn’t completely consistent, it seems to be the rule rather than the exception. Also, while disyllables are more likely to promote than monosyllables, there’s no clear difference between disyllables and trisyllables. In these data, scant as they are, disyllabic prepositions promoted in nine of eleven recorded instances, and trisyllables in nine of twelve instances.

In the other varieties for which I have data, by contrast, preposition promotion is almost completely unattested. In Piva-Drobnjak, even disyllabic prepositions without accent transfer are never promoted: iza plèča ‘behind shoulder’, iza zúbá ‘behind teeth’, iza ováča ‘behind sheep’ (these are the only such examples in the corpus).

The data from the received corpus are almost as clear-cut. Here, prepositions usually don’t promote, whether they contain one, two, or three syllables:

(45) Prepositions almost never promote in the received standard
ispod kòžê  ‘under skin’
ispod jòrgana  ‘under quilt’
ispod bábinog rukáva  ‘under father’s sleeve’
pokraj vèlikê sòbê  ‘beside big room’
nakon dûljê šûtnjê  ‘after longer silence’
između pròzôrâ  ‘between windows’
između sâmovijesti i òholosti  ‘between self-confidence and arrogance’

Only one of eighty-four polysyllabic preposition tokens in this corpus promotes.\(^{27}\)

\(^{26}\) Okolo ‘around’ as a preposition is archaic, though it’s still current as an adverb. In prepositional contexts, oko is preferred. Nevertheless, I’ve included okolo in these data because trisyllabic prepositions are scarce.

\(^{27}\) This count excludes pre, posle, povrh, poput, usred, which always promote, and osim, which promotes once (see 4.4.4). If these are included, then polysyllabic prepositions promote in 16 of 100 occurrences.
It’s unclear why *ispod* promotes here. It doesn’t seem focused (see footnote). Nor, as the data in (45) show, do prepositions promote by size in this corpus, including other occurrences of *ispod*, not to mention trimoraic *između*.

It’s possible that promotion in (46) is encouraged by the fact that *ispod* comes shortly after a break, but other heavy preposition tokens following breaks are clitic:

If promoted *ispod* in (46) isn’t an error, then it seems to me that the most likely explanation is that it’s a case of what I call ‘fake prepositions’ (see below). Unlike other occurrences of *ispod*, which mean simply ‘under’, in (46) it means ‘from under’, which corresponds more literally to the meanings of its parts *iz* ‘out of’, *pod* ‘under’. I suggest, therefore, that *ispod* there is accented not as a preposition, but as a compound. See 4.4.4 for discussion of fake prepositions.

---

28 This is the full sentence in which *ispod* promotes: *Po podu leži tisuću karata, razgažene i nerazgažene cigare, jedna razbijena šolja, a ispod jedne karte viri dukat. ‘On the floor lie a thousand cards, stubbed and unstubbed cigars, a broken cup, and (from) under one card protrudes a ducat.’ (MS:44)
To summarize, heavy prepositions regularly promote in some varieties, and show roughly the same likelihood to promote whether they're disyllabic or trisyllabic. This latter point shows that the size effect isn’t the motivation for promotion, but represents a minimality restriction. Therefore, following Zec, I'll capture this effect by Bin(ft), which was already seen to be necessary in the analysis of accent.

The constraint that motivates promotion by size, then, is whatever makes the alternatives to promotion marked. I’ll therefore leave further discussion of the analysis of promotion by size until the full range of preposition parses is identified.

4.4.4 Fake prepositions

Some apparent examples of promoted prepositions in the received corpus may not be, strictly speaking, prepositions. Rather, these seem to be either adverbs, or P-plus-N sequences. I’ll call these ‘fake prepositions’, and will ignore them in generalizations over preposition parsing. Here, I’ll briefly justify this position.

Some examples of fake prepositions follow. Adverbial fake prepositions include pre ‘before, earlier’, posle ‘after, later’, and osim, sem ‘ except’. We find these both in prepositional contexts (a) and in adverbial contexts (b):

(48) Fake prepositions in prepositional and adverbial contexts (received)

a. pre svèga ‘first of all (before all)’
pòslè pòljupca ‘after kiss’
šèm màterè ‘ except mother’
ošim mène ‘ except me’
Chapter 4 – Proclitic prosody

b. nije mogao pre doći  ‘couldn’t come before’
   nikad pre bilo  ‘never was there before’
   posle sam zaspao  ‘afterward I fell asleep’
   posle mi se cino da  ‘afterward it seemed to me that’

While these resemble prepositions, the adverbial analysis is supported by several observations. For one, pre and posle, at least, also appear in clearly adverbial contexts (b). For another, undoubted prepositions are almost always clitic in the received corpus, whereas fake prepositions almost uniformly promote (one occurrence of osim is clitic). This would be surprising if these were real prepositions, but is expected if these are adverbs, a lexical category. Even if one were to argue that these promote by size, sem, at least, is monomoraic, and can’t promote by size alone.30

Last, where these words appear in prepositional contexts, the following noun is always genitive, though undoubted prepositions can also govern the accusative, dative, locative, and instrumental cases. This suggests that the noun may be not an object of a preposition, but an adjunct in an adverbial or qualitative use of the genitive.31

The other class of fake prepositions consists of words that resemble sequences of a preposition and a noun:

(49) Some fake prepositions that resemble PN sequences (received)
   povrh igala  ‘above the shore’
   poput jabuke  ‘like an apple’
   usred Goluba planin  ‘in the middle of Golub Mountain’

---

29 Sic: nikad pre bilo (MS:47).
30 This is the example where osim is clitic: Kad smo se mi uzeli, nismo imali nista osim oni ponjav, jedne tepsije i dvatre kora, a danas, hvala Bogu, puna kuca. ‘When we were married, we had nothing except that rug, a single pan, and two or three dishes, but today, thank God, a full home.’ (MS:50)
31 The adverbial and qualitative uses of the genitive are illustrated by the phrases ici svakog jutra ‘go every morning’ and ljudi širokih pleca ‘people broad of shoulder’, respectively.
Proclitic prosody

*Povrh, poput,* and *usred* derive etymologically from PN sequences, with various degrees of transparency: *po-vrh* ‘on-top’, *po-put* ‘on-appearance’, *u-sred* ‘at-middle’. Also like PN sequences, they bear rising accent, which is characteristic of transfer, as opposed to default falling accent, which is normal for promoted function words. Compare the almost identical accentuation of the fake prepositions in (49) to these parallel PN sequences, which are written as two words:

\[(50) \text{Some PN sequences that resemble fake prepositions (received)}\]

\[
\begin{align*}
\text{u sred nôćî} & \quad \text{‘in the middle of the night’} \\
\text{nà sred sôbë} & \quad \text{‘in the middle of the room’} \\
\text{nà krâj njêñë hâljinë} & \quad \text{‘at the edge of her robe’} \\
\text{na vrhu svôga kôplja} & \quad \text{‘on the tip of self’s spear’}
\end{align*}
\]

This concludes the discussion of preposition promotion. In this section, I’ve identified a class of apparent prepositions that I claim are better analyzed as adverbs or PN sequences. Excluding these from our generalizations over preposition parsing, we may conclude that preposition promotion by size is frequent in modern BCS, but rare or unattested in the received and Piva-Drobnjak corpora.

4.4.5 The third preposition parse is free clisis

I’ve claimed that prepositions are sometimes internal proclitics, and sometimes promote, as revealed by accent transfer and independent accent, respectively. However, there are also cases where prepositions get neither transfer, nor independent accent. How are they parsed in these cases? Here I’ll argue that apart from the two parses already established, there’s only one third preposition parse, which is free clisis.
Two of my guiding assumptions here are that, where the third parse obtains, it’s because it’s less marked than other alternatives, and furthermore, that grammatical variation across dialects is minimal. These assumptions justify the use of data from different Neo-Štokavian dialects for a common analysis.

Of the six potential parses that I assume, exemplified here with *na ulicu*, only internal proclisis and promotion are distinguished by their unique accentuation:

(51) Six function word parses

<table>
<thead>
<tr>
<th>Type</th>
<th>Internal Proclisis</th>
<th>Internal Enclisis</th>
<th>Affixal Proclisis</th>
<th>Affixal Enclisis</th>
<th>Free Clisis</th>
<th>Promotion</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>lex</em></td>
<td><em>(na)</em> ulicu</td>
<td><em>(na)</em> ulicu</td>
<td><em>(na)</em> ulicu</td>
<td><em>(na)</em> ulicu</td>
<td><em>(na)</em> ulicu</td>
<td><em>(na)</em> ulicu</td>
</tr>
</tbody>
</table>

The other four parses—affixal proclisis, free clisis, and enclisis—aren’t distinguished by their accentuation, and so must be affirmed or eliminated by other means.

We may begin by ruling out enclisis as a possibility, at least in some cases, because prepositions can follow a pause (see 4.4.3 for similar examples):

(52) *Između* grāda i òstrva stāklī se ŭho môre u òdblesku žārkōga sūnca //
     between city and island glistens RFL calm sea at gleam burning sun //
     Between the city and the island the calm sea glistens in the burning sun // (MS:52)

Although *između* here is sentence-initial, this deduction holds for clitics following medial pauses too. By the assumption that a pause necessarily coincides with an I-phrase edge, a postpausal clitic can’t be enclitic, because a p-word can’t straddle an I-phrase edge. *Između* must therefore be either an affixal proclitic, or free.

On the other hand, it’s conceivable that non-postpausal prepositions are enclitic:
That is, perhaps enclisis is the preferred third parse in medial contexts, but is unattested after pauses only because it’s impossible there.

However, an argument against this scenario is that prepositions sometimes promote even after words to which they might encliticize. Most speakers who were recorded reading these questionnaire sentences promoted preko (a) and pored (b), even though they might have encliticized them to ideš and kuća, respectively:

A third reason for ruling out the enclitic analysis is that, as I argue in chapter 5, even the peninitial clitics aren’t enclitic, though they’re traditionally analyzed as such. If presumed enclitics aren’t enclitic, it seems still less plausible that presumed proclitics are enclitic. Let’s therefore abandon the possibility that prepositions are enclitic.

This narrows the possibilities for the third parse to affixal proclisis and free clisis. One argument against affixal proclisis comes from the account of ne parsing, according to which internal proclisis of ne obtains by the ranking NRC(w) over ALIGN-L(lex,w):
(55) The account of ne proclisis

<table>
<thead>
<tr>
<th></th>
<th>ne možëv</th>
<th>NRC(w)</th>
<th>L(lex,w)</th>
<th>EXH(P,s)</th>
<th>WRAP(lex,w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>ne (môže)</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>b.</td>
<td>→ (nê môže)</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>c.</td>
<td>(ne (môže))</td>
<td>*!</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This ranking degrades affixal proclisis for prepositions too, preferring either free clisis (a) or internal proclisis (b), depending on the ranking of ALIGN-L(lex,w) and EXH(P,s):

(56) The same ranking rules out affixal proclisis for prepositions

<table>
<thead>
<tr>
<th></th>
<th>kod kúčë</th>
<th>NRC(w)</th>
<th>L(lex,w)</th>
<th>EXH(P,s)</th>
<th>WRAP(lex,w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>→ kod (kúčë)</td>
<td>*</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td>→ (kôd kúčë)</td>
<td>*</td>
<td></td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td>(kod (kúčë))</td>
<td>*!</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Then, since we’ve already eliminated internal proclisis as the third parse, based on the failure of accent transfer, this indicates that the third parse is free clisis.

A stronger point favoring free clisis over affixal proclisis is the observation that longer prepositions are less likely to get accent transfer (see 2.2.7). In formal terms, preposition size correlates inversely with the likelihood of internal proclisis. This, in turn, provides an argument against the affixal proclitic analysis.

To begin with, the observed correlation is borne out by data from the received corpus. This table summarizes the incidence of different parses in the corpus with respect to prepositions of one, two, and three syllables, based on their accentuation:
Setting aside the limited incidence of promotion, and those cases where accent is uninformative, these data show that while monosyllabic prepositions are twice as likely to be internal proclitics as to get the third parse (275:142), disyllables are about as likely to get either parse (18:20), and trisyllables only get the third parse (0:4). In short, the longer the preposition, the stronger the preference for the third parse over proclisis.

I’ve claimed that internal proclisis is exceptional in the received standard, enforced not for phonological reasons, but by stratum-specific faithfulness (see 4.4.2). In other words, internal proclisis is phonologically suboptimal in this variety. I interpret the numbers in (57) to show, further, that longer prepositions increase the phonological markedness of internal proclisis to the point of degrading it in favor of the phonologically less marked third parse. This provides a clue to the identity of the third parse, indicating that it’s less marked than internal proclisis in the grammar of this variety.

Under the analysis of word accent and footing proposed in chapters 2 and 3, there are at least two ways that longer internal proclitics are worse than shorter internal proclitics. First, preceding toneful hosts, longer prepositions cause worse misalignments...
of the left edge of p-word to its head foot. Second, longer prepositions yield more unfooted syllables that must be parsed directly by p-word.

The diagrams in (58) clarify this difference across differently sized proclitics. Take for example a toneful host like kûčâ ‘houses (GEN.PL)’, from which tone spreads to the final syllable of an internal proclitic. Then disyllabic proclitics result in one unfooted syllable between the left edge of p-word and its head foot (b), and trisyllabic proclitics in two unfooted syllables between word and foot edges (c):

(58) Longer internal proclitics yield worse alignment and more unfooted syllables

\[
\begin{align*}
\text{(a) } & \quad \langle \text{od ku}\rangle^učâ \\
\text{(b) } & \quad \langle \text{o(ko ku)} \rangle^učâ \\
\text{(c) } & \quad \langle \text{izme(du ku)} \rangle^učâ \\
\text{‘from houses’} & \quad \text{‘around houses’} & \quad \text{‘between houses’}
\end{align*}
\]

With toneless hosts, by contrast, alignment is no worse with longer than with shorter internal proclitics, because the head foot is always initial, e.g. \langle nā mo \rangle^ru ‘on sea’, \langle prēko \rangle mōra ‘across sea’. With respect to unfooted syllables, on the other hand, longer proclitics are worse even with toneless hosts, because the lack of non-head feet means that a longer proclitic results in more unfooted syllables in its host (see 3.4.5).

Let’s suppose, then, that longer internal proclitics are avoided either to improve head foot alignment, or to avoid unfooted syllables, or both. In the framework assumed here, the degrading of polysyllabic proclitics would then be motivated either by the constraint \text{ALIGN-L}(w,Δw), or by \text{EXH}(w,s), respectively.

The reason that this provides an argument against affixal proclisis is that, on both of these constraints, affixal proclitics (c) are even worse than internal proclitics (b):
(59) Affixal proclisis is worse than internal proclisis on alignment and Exhaustivity

<table>
<thead>
<tr>
<th>$\text{oko kūćāₙ}$</th>
<th>$L(w,\Delta w)/m$</th>
<th>$\text{EXH}(w,s)$</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. $\text{oko (}kūća^{a})$</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>b. $(\text{o(kō ku)}^{u}\text{ćā})$</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>c. $(\text{oko (}kūća^{b})$)</td>
<td>**</td>
<td>**</td>
</tr>
</tbody>
</table>

Free clitics (a), by comparison, improve on proclitics according to these constraints. If I’m correct in assuming that long internal proclitics are avoided to satisfy one of these constraints, it follows that the preferred third parse is free clisis.\(^{33}\)

In summary, I claim that when prepositions aren’t internal proclitics or promoted, they’re free clitics parsed directly by P-phrase. I’ve drawn evidence for this both from the received corpus, and from modern data. Based on the assumption that the three dialects treated in this study are identical except where the data indicate otherwise, I conclude that internal proclisis, free clisis, and promotion are the only three parses in which prepositions are attested across Neo-Štokavian.

Last, based on this reasoning regarding prepositions, I further conclude that $\text{ne}$, when unaccented in contexts of constituent negation, is also free—e.g. $(\text{Slȃvko})(\text{vidī})$ ne $(\text{Ŏlgůu})$ nego $(\text{Mâriju})$. ‘Slavko sees not Olga but Marija’ (see 4.3.5).

4.4.6 An account of preposition parsing

Having concluded the inquiry into prepositions’ prosodic representations, let’s now consider how these representations are determined. Just as I did for $\text{ne}$, I propose to

---

\(^{33}\) This predicts another effect: although monosyllables are fine before hosts that transfer accent (ód kūća), even monosyllabic proclitics should be avoided before other hosts (od planinā). However, I don’t see how this might be verified, since proclisis and free clisis are indistinguishable in non-transferring contexts.
show that preposition prosody reflects how prepositions’ syntactic configurations are parsed by a general interface grammar, rather than underlying specifications.

This task is somewhat more complex than with *ne*. Whereas *ne* is consistently proclitic, prepositions get a variety of parses, both within and across varieties:

(60)  Preposition parsing in three varieties

<table>
<thead>
<tr>
<th>Light prepositions</th>
<th>Piva-Drobnjak</th>
<th>received</th>
<th>modern</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>proclitic</td>
<td>free ~ proclitic</td>
<td>free</td>
</tr>
<tr>
<td>Heavy prepositions</td>
<td>proclitic</td>
<td>free ~ proclitic</td>
<td>promoted</td>
</tr>
</tbody>
</table>

To begin with, I’ll lay out some of the assumptions that I’ll adopt for this cross-dialectal account of preposition parsing. First, I’ll assume that the grammar as a whole varies minimally across dialects, so that a ranking that’s needed for one also holds in others, unless this is contradicted empirically. For example, I’ve already proposed the ranking $NRC(w) >> ALIGN-L(lex,w)$ in order to get *ne* proclisis (4.3.3). Since *ne* is proclitic across dialects, all grammars should be compatible with this ranking.

Similarly, I’ll assume that function word syntax doesn’t vary across dialects, in the absence of positive evidence to that effect. The simplest account, then, is one where dialectal differences in preposition parsing reflect identical syntactic representations, as interpreted by grammars that differ only their rankings of prosodic constraints.

Last, I’ll assume, as argued in 4.4.5, that enclisis is categorically excluded as a potential parse for prepositions. In principle, this could be because prosodic words are necessarily right-aligned with lexical words, blocking enclisis of all function words whatsoever, or because prepositional phrases are consistently left-aligned with some higher prosodic constituent, which blocks enclisis.
I’ll eventually conclude in favor of the latter alternative—specifically, that prepositional phrases are left-aligned with phonological phrases. The arguments for this are based on how such P-phrase edges restrict function word parsing, and are summarized in 4.6. For now, I assume the presence of an undefined prosodic break (//) at the left edge of PP, e.g. // [PP kod kuće] ‘at home’.

Another challenge to analysis is dialect-internal variation. While prepositions in Piva-Drobnjak present no difficulty in this regard, being uniformly proclitic, prepositions in the received corpus vary between free clisis and proclisis, and in the modern data vary between free clisis and promotion. Nevertheless, we may identify for each variety a more or less default parse, other parses obtaining only in exceptional contexts.

Whereas proclisis is unmarked in Piva-Drobnjak, I’ve argued that in the received corpus, proclisis is exceptional, being restricted to particular PN combinations (4.4.2). I therefore conclude that the unmarked parse in this variety is free clisis. As for the modern standards, I found that promotion is equally common for bimoraic and trimoraic prepositions (4.4.3). It seems, then, that promotion there isn’t motivated by preposition weight, but is the unmarked parse, blocked only for monomoraic prepositions.

Let’s begin with the determination of unmarked proclisis in Piva-Drobnjak. One possibility is that this has the same explanation as *ne* proclisis. That is, a preposition’s host adjoins to it, yielding a recursive lexical word that’s optimally parsed by internal proclisis. Franks (1998) argues for such proclisis by adjunction, based on cases where a
preposition appears to move as a unit with the first word of its complement, even when such movement splits the complement itself.\footnote{Franks (1998:20): ‘I conclude that there must be a mechanism which attaches the preposition to the following head, and that this mechanism—although I call it “procliticization”—must take place in the syntax.’}

(61) \textbf{U koju} misliš da je Jovan ušao [ … sobu ]?
\textbf{in which} think C AUX Jovan walked [ … room]
[Into which room] do you think that Jovan walked? (Franks 1998:20)

Although I followed this account in earlier work (Werle 2004), I now find it implausible on several points. For one, the V-to-Neg movement that yields \textit{ne} proclisis can be motivated by the fact that negation is part of an extended projection of which the verb is the lexical head. Potential preposition hosts, by contrast, aren’t limited to the noun head of a preposition’s NP complement, but include any adjectival, deictic, or pronominal element that’s initial in its NP (see 4.4.1).

Furthermore, whereas V-to-Neg raising is apparently consistent across dialects, we would have to assume that raising to P varies across dialects, in order to capture the cross-dialectal variation in preposition proclisis. Yet this is contradicted by the fact that prepositional phrase splitting with pied-piping, as in (61), is general across dialects.

Last, the fact that heavy prepositions are less likely to procliticize than light ones (see 2.2.7, 4.4.5) indicates that proclisis, or the failure thereof, is motivated phonologically, rather than syntactically.

Let’s therefore consider the possibility that prepositions and their complements are in the separate nodes where they appear to be, and that proclisis is motivated by parsing constraints. Take the example \textit{iza kuće} ‘behind house’. This should get the
default parse in every variety, avoiding the exceptions that arise with lexicalized proclisis in the received standard, and with light prepositions in the modern standards.

Using some of the basic interface and prosodic constraints adopted in 1.3, this grammar fragment favors proclisis (a) over free clisis (b) and promotion (c):

(62) Unmarked proclisis (Piva-Drobnjak)

<table>
<thead>
<tr>
<th></th>
<th>// iza kućêN</th>
<th>R(w,lex)</th>
<th>EXH(P,s)</th>
<th>L(lex,w)</th>
<th>L(w,lex)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>izà kućê</td>
<td></td>
<td></td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>b.</td>
<td>iza (kùćê)</td>
<td></td>
<td>*!</td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>c.</td>
<td>(iza)(kùćê)</td>
<td>*!</td>
<td></td>
<td></td>
<td>*</td>
</tr>
</tbody>
</table>

Enclisis and affixal proclisis are ruled out by other factors. First, enclisis is prevented by the presence of a prosodic break (//) at the left edge of PP (see above). Affixal proclisis is ruled out for prepositions by the same ranking that does so for ne (see 4.4.5).

I intend to show that the basic differences in unmarked preposition parsing across varieties are best accounted for by simple rerankings of these first three, core constraints in (62): R(w,lex), EXH(P,s), and L(lex,w). As for the fourth, L(w,lex), I include it here to remind us that it must be ranked below EXH(P,s) to favor proclisis. However, I set it apart from the main tableau both because it can’t be ranked here with respect to R(w,lex), and because the analysis will indicate that it’s inactive, by virtue of its low ranking.

Tableaus (63) and (64) show that rerankings of the three core constraints yield unmarked promotion and free clisis, respectively. When R(w,lex) is ranked low, prepositions optimally promote, as in the modern standards:
(63)  Unmarked promotion (modern)

\[
\begin{array}{|c|c|c|c|}
\hline
\text{// iza kučëN} & L(\text{lex},w) & \text{EXH}(P,s) & R(\text{w,lex}) & L(\text{w,lex}) \\
\hline
\text{a. } (izà kučë) & *! & * & * \\
\text{b. } iza (kùčë) & *!* & * & * \\
\text{c. } \rightarrow (iza)(kùčë) & & & & \\
\hline
\end{array}
\]

And when \text{EXH}(P,s) is ranked low, the unmarked parse is free clisis:

(64)  Unmarked free clisis (received)

\[
\begin{array}{|c|c|c|c|}
\hline
\text{// iza kučëN} & L(\text{lex},w) & R(\text{w,lex}) & \text{EXH}(P,s) & L(\text{w,lex}) \\
\hline
\text{a. } (izà kučë) & *! & * & * \\
\text{b. } \rightarrow iza (kùčë) & & *!* & * \\
\text{c. } (iza)(kùčë) & & *! & * \\
\hline
\end{array}
\]

A possible objection to this account of free clisis is that ranking \text{L(w,lex)} over \text{EXH}(P,s) would also get this result. Nevertheless, the present account is to be preferred because \text{EXH}(P,s) outranks \text{L(w,lex)} in Piva-Drobnjak and modern BCS. Taken with the fact that rerankings of the three core constraints are both necessary and sufficient to capture the differences in default clisis across these varieties, the most economical assumption is that \text{L(w,lex)} is uniformly below \text{EXH}(P,s), across dialects.

These diagrams summarize the core constraint rankings that I’ve claimed are responsible for differences in unmarked preposition parsing across varieties:

(65)  Ranking summaries for the account of unmarked preposition parsing

a. Piva-Drobnjak  

\[
\begin{array}{c}
\text{Align-R(\text{w,lex})} \\
\text{Align-L(\text{lex},w)} \\
\text{Exh(\text{P,s})}
\end{array}
\]

b. received standard

\[
\begin{array}{c}
\text{Align-L(\text{lex},w)} \\
\text{Align-R(\text{w,lex})} \\
\text{Exh(\text{P,s})}
\end{array}
\]

c. modern standards

\[
\begin{array}{c}
\text{Align-L(\text{lex},w)} \\
\text{Align-R(\text{w,lex})} \\
\text{Exh(\text{P,s})}
\end{array}
\]
In addition, some further rankings are required in order to capture non-default clisis. First, recall that light prepositions in our modern data don’t promote, but are free (e.g. kod 'kuće ‘at home’). This is most straightforwardly accounted for by Bin(ft), already shown to be active in accent determination. Ranking Bin(ft) and L(lex,w) over Exh(P,s) blocks promotion of light prepositions in favor of free clisis:

\[(66)\quad \text{When promotion is blocked, free clisis obtains (modern)}\]

\[
\begin{array}{|c|c|c|c|c|}
\hline
/ \text{kod kuće} & \text{Bin(ft)} & \text{L(lex,w)} & \text{Exh(P,s)} & \text{R(w,lex)} & \text{L(w,lex)} \\
\hline
(\text{kod kuće}) & \text{!} & \text{!} & \text{!} & \text{!} & \text{!} \\
\hline
(\text{kod (kuće)}) & \text{!} & \text{!} & \text{!} & \text{!} & \text{!} \\
\hline
(\text{kød)(kuče}) & \text{!} & \text{!} & \text{!} & \text{!} & \text{!} \\
\hline
\end{array}
\]

I also include L(w,lex) below Exh(P,s) in this tableau, as argued for above.

By proposing a ranking for Bin(ft) with respect to constraints on prosodic word alignment, we establish the first connection between the account of clitic prosody on the one hand, and that of word-internal prosody and accent on the other (see 3.5).

We may also observe that, according to this account of preposition promotion, so-called promotion by size in the modern standards is—to be precise—motivated not by size, but by Exhaustivity. Size is rather a limiting factor, as expressed by Bin(ft). Nevertheless, I’ll continue to refer to this pattern as ‘promotion by size’.

Now, I’ve claimed that non-default clisis in the received standard has a different character, being motivated not for phonological well-formedness, but in accordance with exceptional, lexicalized accent transfer in certain PN sequences. On the model of Pater’s (2000) analysis of exceptional secondary stress in English, I claim that such sequences represent a special stratum of the lexicon, comprising common and idiomatic expressions
with accentuations characteristic of more conservative Neo-Štokavian dialects, and that these exceptional accentuations are protected by special faithfulness:

(67) IDENT(tone)_1: if a tone-bearing unit \( x \) in the input corresponds to a tone-bearing unit \( y \) in the output, and \( x \) belongs to a sequence from lexical stratum 1, then \( y \) has the same pattern of tone linkings as \( x \).

If stratum-specific IDENT outranks L(lex,w) in the received standard, then this forces exceptional proclisis just in those PN combinations with lexicalized transfer:

(68) Stratum-specific IDENT ensures proclisis (received)

<table>
<thead>
<tr>
<th>/kod kućēN/ (_1)</th>
<th>IDENT(tone)_1</th>
<th>L(lex,w)</th>
<th>EXH(P,s)</th>
<th>L(w,lex)</th>
<th>R(w,lex)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. ( \rightarrow (kôd \ kućē) )</td>
<td>( * )</td>
<td>( * )</td>
<td>( * )</td>
<td>( * )</td>
<td></td>
</tr>
<tr>
<td>b. kod (kućē)</td>
<td>( *! )</td>
<td>( * )</td>
<td>( * )</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. (kôd)(kućē)</td>
<td>( *! )</td>
<td>( * )</td>
<td>( * )</td>
<td>( * )</td>
<td></td>
</tr>
</tbody>
</table>

I also include here the ranking L(lex,w) \( \gg \) EXH(P,s) \( \gg \) L(w,lex), as established above. R(w,lex), on the other hand, can’t be ranked with respect to IDENT in this tableau.

Although it gets the right result, IDENT(tone)_1 may require some further justification. First, I define this on the IDENT schema for the same reason as with IDENT(mora)/\( \Delta H \), which protects length in nuclei linked to high tone (3.4.4). In both cases, it isn’t tones or moras themselves that are protected, but their configurations with respect to segments. This is characteristic of IDENT, which sees tones and moras as properties of segments, as opposed to MAX and DEP, which see them as individual objects.

Second, one may ask whether the stratum-specific IDENT approach to exceptional clisis differs from the subcategorization approach, which I’ve explicitly argued against.
The important differences are that stratum-specific IDENT treats proclisis as an exception, rather than as part of the regular phonology, and that it treats proclisis as a property of some PN sequences, rather than of particular clitics. The data on accent transfer in the received standard show that this is the correct approach (see 4.4.2).

The following diagrams summarize the analysis of function word prosody to this point, combining the accounts of *ne* and preposition parsing:

(69) Ranking summaries for the accounts of *ne* and preposition parsing

a. Piva-Drobnjak  
   b. received standard  
   c. modern standards

The relative rankings of three core constraints—L(lex,w), R(w,lex), and EXH(P,s)—yield differences in default preposition parsing across dialects. In addition, non-default parsing patterns in the received and modern standards motivate additional rankings involving IDENT(tone)\(_1\) and BIN(ft), respectively. Last, the high ranking of NRC(w) rules out affixal proclisis both for *ne* and for prepositions.

4.4.7 Summary

This case study of preposition prosody has presented analytical challenges beyond those encountered with *ne*. One is that prepositions comprise function words of various sizes. Another is that they exhibit greater prosodic variation across dialects.
Having restricted the present investigation to preposition-noun sequences, I argued that prepositions are attested in only three parses: as internal proclitics, free clitics, and prosodic words. This finding diverges from the more widely accepted view that prepositions are consistently proclitic (see 4.2.3, 4.2.4).

The evidence for this came mainly from word accent, including the statistical observation that accent transfer is less frequent with longer prepositions. In this, the detailed analysis of word accent from earlier chapters proved crucial, helping to rule out the possibility that prepositions are sometimes affixal proclitics.

I then proposed an interface constraint account of preposition parsing across the three varieties from which the data were taken. This was accomplished by simple rerankings of a small set of constraints, most of which were adopted with the Prosodic Clitic Theory framework (see 1.3.5)—though I proposed one new constraint in order to account for exceptional, lexicalized proclisis in the received standard.

I submit that the present account has the advantages that it’s couched in a restrictive framework, and that it unifies the formal analysis of word accent with that of two different clitic categories, negation and prepositions. This point is strengthened in the next case study, where I show that introducers are prosodified mostly as expected, according to the analysis of other clitic categories.

4.5 **Introducers**

4.5.1 *Introduction*

In this last case study of proclitic prosody, I combine several categories, including complementizers, conjunctions, and certain adverbial elements, into the descriptive class
of *introducers*. I do so because these words have similar enough syntactic and prosodic properties that they motivate a common, general analysis, though they also fall into subclasses with respect to some phenomena.

This is a representative list of some of the words that I group as introducers, organized by their presumed syntactic categories:

(70) Some introducers by syntactic category

<table>
<thead>
<tr>
<th>complementizers</th>
<th>conjunctions</th>
<th>adverbials</th>
</tr>
</thead>
<tbody>
<tr>
<td>da ‘that’</td>
<td>i ‘and, even’</td>
<td>pa ‘and, so, then’</td>
</tr>
<tr>
<td>što ‘that, what’</td>
<td>a ‘and, but’</td>
<td>te ‘and, so, then’</td>
</tr>
<tr>
<td>ako ‘if’</td>
<td>no ‘but’</td>
<td>kao ‘as, like’</td>
</tr>
<tr>
<td>kad ‘if, when’</td>
<td>ali ‘but’</td>
<td>kako ‘how’</td>
</tr>
<tr>
<td>jer ‘because’</td>
<td>ili ‘or’</td>
<td>dok ‘while’</td>
</tr>
<tr>
<td>ni ‘nor, not even’</td>
<td>već ‘rather, already’</td>
<td></td>
</tr>
<tr>
<td>niti ‘nor, not even’</td>
<td>nego ‘rather, than’</td>
<td></td>
</tr>
</tbody>
</table>

Introducers have in common that they can be clause-initial, serving either to subordinate their clause, or otherwise to indicate its relation to the discourse. Some, especially conjunctions, can introduce non-clausal constituents too. Significantly, these words also have in common that they’re unstressed some or most of the time.

Like *ne* and prepositions, introducers are also sometimes parsed as free clitics or prosodic words. In contrast to these other categories, however, only a few introducers are ever proclitic. We’ll see that this reflects introducers’ more peripheral distribution in the clause. Conversely, we also observe prosodic similarities between introducers and other categories when they occur in similar syntactic configurations and phonological shapes—conditions that are significant with respect to interface and prosodic constraints.
As one example, both introducers and prepositions favor free clisis or promotion, which I attribute to their similar syntax as free function words. For another, I claim that complementizer proclisis comes about only through syntactic adjunction to the verb, paralleling the more regular pattern of ne proclisis. Last, I attribute conjunction proclisis to the prosodic realization of focus, extending the head-of-focus account of focus realization that was proposed to account for the prosody of constituent negation.

I take these results to support the general claim that the interface grammar parses function words according to their syntactic and prosodic contexts, and not according to their syntactic category, or to any underlying subcategorization.

Some other findings concern the pattern of phonological phrasing in the clause. Based on the exceptionality of introducer proclisis, I propose that P-phrases regularly separate clause introducers from the rest of their clause, and sub-clausal conjunctions from their complements. This leads to a model of P-phrasing in the clause, which is supported by comparisons across the traditional proclitic categories, and which informs the analysis of peninitial clitic prosody in chapter 5.

4.5.2 Unexceptional introducer parsing

I’ll begin with an overview of the typical prosody of clause introducers. Although introducers are attested in the same three parses as ne and prepositions, they’re less often proclitic, favoring instead free clisis and promotion. Here, I’ll summarize the variation between these two more common representations, with an eye to discovering to what extent introducers are subject to general—or unique—parsing influences.
I’ll begin with the introducer prosody in the received corpus, where the available information from accent is most plentiful. In this variety, light introducers are typically free, as illustrated here with light da, i, a:

(71) Light introducers are typically free (received)

a. Ön se je čudio, da nitko tê izvanrednosti nê vidî // he RFL AUX surprised C no one that excellence not sees // He was surprised that no one noticed that excellence // (MS:77)

b. I on me tôm prilikom pònudí cãšicêm vína, žêlêći da srêtno and he me that occasion offers glass wine wishing C happily bôžićujêm, a já mu čêstîtâm godôvnô. have Christmas and I him offer best wishes

And on that occasion he offers me a glass of wine, wishing me a merry Christmas, and I offer him my best wishes. (MS:71)

We can show that these words are free by the same arguments as were applied with prepositions. First, they’re unaccented, and therefore clearly not promoted. They’re also attested after pauses, so can’t be enclitic. They’re found before syllables with falling accent (nitko, ön, jâ), so aren’t internal proclitics. Last, if they aren’t internal proclitics, then they aren’t affixal proclitics either (see 4.4.5). Therefore, they’re free.

On the other hand, heavy introducers in this variety vary between free clisis and promotion, apparently at random. This is exemplified here with ali:

(72) Free and promoted ali (received)

a. // ali böjao sam se, štâ će Bâtorić kad ju nãdê. // but feared AUX RFL what FUT Batorìć when her finds // but I feared what Batorìć would do when he found her. (MS:70)

b. Ðistina s mälo bôrá, ali nàročito tôdã, kàdã joj öêi pocrvênê… really with few wrinkles but especially then when her eyes reddened… With few wrinkles, to be sure, but especially when her eyes reddened… (MS:119)
We find the same variation with other heavy introducers (but see 4.5.3):

(73) Heavy introducers vary between free clisis and promotion (received)

// pa p hasil sam zaspao. ‘and afterward I fell asleep’
// pâ ako bi gonići i našli… ‘so even if the hounds had found’
// ako h oče, on će zóvnuti ljječnika // ‘if she wanted, he’d call a doctor’
// pa ako je već i dosđa… ‘and if he had already’
Ona bi ili jela vrglo malo ili nikako. ‘She would eat very little or not at all.’
… ili u kójù prékrasnù götskù crkvu. ‘or in some beautiful Gothic church’
// niti je htjela tih dužnosti razúmjeti // ‘nor wanted to understand those duties’
// niti je bíla slátka, níti górka // ‘it was neither sweet, nor bitter’
// kâko húče vjetrine nad válovima… ‘how the winds roar over the waves’
// kâko glásnio gòvorí môme slúži. ‘how he spoke loudly to my servant’

In the Piva-Drobnjak data, by comparison, both light and heavy introducers are strongly free. These examples of da, ali, and ako illustrate this in context:

(74) Light and heavy introducers are typically free in Piva-Drobnjak

a. Stíjo bi da zàšàš, ali nè moreš. ready CND C fail but not must
You’ll probably fail, but you won’t necessarily. (V:200)

b. Ako nêćeš nàlijepo, òćeš zòrom.
if not+will nicely will by force
If you won’t do it nicely, you’ll do it by force. (V:203)

c. Nê bi nàsò onàkê dêvôjkê, da öbijës trë plemêña.
not CND found such girl C search through three clans
You wouldn’t find such a girl if you searched through three clans. (V:210)

Last, the data on modern varieties, though scant, indicate that light introducers are typically free as elsewhere, but that heavy introducers may promote more regularly than

35 When pa promotes, it’s most frequently with a long vowel (pâ), but occasionally with a short vowel (pâ).
36 Sic: ako promotes in MS either with falling or with rising accent (âko, âko).
37 Sic: MS has gonići ‘(hunting) drivers, hounds’. Compare Benson, Pravopis: gònï. 

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in other varieties. For example, all three consultants who read the following sentences pronounced light *da* as a clitic (a), but promoted heavy *kako* (b):

(75) Free and promoted introducers in modern BCS

a. *'Drago mi je da ′letim.*
   dear me AUX C fly
   I’m glad that I’m flying. (3)

b. *'Rekla mi je ′kako ′leti.*
   told me AUX how flies
   She told me how she’s flying. (3)

Similarly, Zec (1997, 2005) generalizes that heavy function words typically promote in modern standard Serbian. (See also the data in 5.3.2 on co-promotion with PCs.)

On the other hand, I’ll argue in a moment that there may be other factors, besides prosodic weight, that contribute to the frequent promotion of *kako* in (b). Further, reports indicate that the heavy conjunction *ali* can be stressed or unstressed in modern varieties (Browne 1974, Inkelas and Zec 1988, Progovac 1996; see 5.3.2).

In summary, light introducers are regularly free in all dialects, but dialects differ with respect to whether heavy introducers are typically free, or sometimes promote by size. The modern data, though imprecise, indicate that introducers in these varieties exhibit essentially the same variation between free clisis and promotion as in the received standard, but may be more strongly promoting.

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38 On the other hand, Zec also assumes that prepositions, and some introducers, can subcategorize for proclisis, which can discourage or block promotion by size.
4.5.3 **Introducer promotion by focus**

Besides promotion of heavy introducers by size, we find cases where introducers promote—arguably—to realize prosodic focus. I present here some of the evidence for this phenomenon, with a couple of goals in mind. These are, first, to discover a criterion for distinguishing exceptional promotion by focus from more regular promotion by size, and second, to garner support for the head-of-focus account of promotion.

The generalization that even heavy introducers are strongly free in Piva-Drobnjak is weakened by the fact that heavy *kako* is observed both with and without accent:\(^{39, 40}\)

(76) Free and promoted *kako* (Piva-Drobnjak)

a. Ovči ti je pätene je jèdno, *kako* jà živìm.
   this you AUX uncomfortable place one how I live
   This is an uncomfortable situation, how I live. (V:211)

b. Pomènula se ova kràva, *kàko* bijàši mišava.
   gained weight RFL this cow how was thin
   This cow gained weight, (compared to) how thin she was. (V:213)

A comparison with more numerous data from the received corpus indicates that this is part of a more general phenomenon. There, we find that both *kako* ‘how’ and *niti* ‘nor’ promote significantly more frequently than other bimoraic introducers:

(77) Free and promoted instances of some heavy introducers (received)\(^{41}\)

<table>
<thead>
<tr>
<th></th>
<th>free</th>
<th>promoted</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>pa</em></td>
<td>166</td>
<td>41</td>
</tr>
<tr>
<td><em>ali</em></td>
<td>13</td>
<td>32</td>
</tr>
<tr>
<td><em>ako</em></td>
<td>13</td>
<td>32</td>
</tr>
</tbody>
</table>

---

\(^{39}\) Of five occurrences in the Piva-Drobnjak corpus, *kako* is free twice and promotes three times.

\(^{40}\) The points made here regarding *kako* could also be made regarding the *wh* element and relativizer *koji* ‘which’. However, *koji* exhibits adjectival morphology, and seems to pattern prosodically more with prenominal deictics and semi-functional adjectives than with introducers. Like deictics, but unlike *kako*, *koji* is always accented in the received data, but most often unaccented in Piva-Drobnjak.

\(^{41}\) I exclude from these data three cases where stressed *pa* is exceptionally light (pà). I also exclude all interrogative and exclamative tokens of *kako*, counting tokens only of its relative use (see below).
These counts show that *niti* and *kako* promote about 71% of the time (32/32+13), while other heavy introducers promote only about 20% of the time (41/41+166).

I propose that this difference can be explained by the same hypothesis that was inspired by *ne* promotion in constituent negation. I claimed that constituent-negating *ne* promotes in order to realize focus prominence, on the premises that the entire NegP in that construction is focused, and that focus is realized on the syntactic head of a focused phrase (in the grammar of the received corpus; see 4.3.6).

Similarly, there are reasons to think that *niti* and *kako* often head focused phrases. There’s a common pragmatics to many of the contexts where we find *ne, niti*, and *kako*. Roughly speaking, these words are frequently heads of phrases that denote some relevant or informative notion from among a set of alternatives. The function of emphasizing one of several alternatives is a defining property of focus (see 4.3.5).

Some examples will demonstrate this generalization more clearly. Let’s begin with an example of constituent negation, repeated from 4.3.5:

\[ \text{Nȅ Nȅ Nȅ Nȅ \hspace{1cm} bsȄa:to  je  nb—aȄusu  vboO:alele} \]
\[ \text{F, | već \hspace{1cm} nb—aȄusu  mboO:agle} \]
\[ \text{F //} \]
\[ \text{not | C | her not+AU}X \text{ loved } \hspace{1cm} \text{rather [not+AU}X \text{ could ] //} \]
\[ \text{(It was) not that they didn’t love her, but that they couldn’t} \hspace{1cm} (MS:124) \]

I analyzed this construction as submitting two propositions, both of which exhibit pragmatic properties of focus. First, both propositions are informative, in the sense that they add to the common ground of propositions under discussion. Further, they may be
regarded as alternatives to each other, in the sense that both are offered as conceivably compatible with some established state of affairs.\textsuperscript{42}

These next examples illustrate the focusing properties of \textit{niti}. Because \textit{niti} negates its complement, it overlaps somewhat in function with constituent negation. For example, it can be used to focus one or more negative alternatives (a). A \textit{niti} phrase can also be used additively, to strengthen the meaning of its conjunct (b):

(79) Two uses of \textit{niti} (received)

\begin{enumerate}
\item \textbf{a.} // [\textbf{\textit{n̥ti je bila slättka}}]_{F}, [\textbf{\textit{n̥ti gőrka}}]_{F}, \textbf{već [čūdnōga]}_{F} //
\text{ // [\textbf{\textit{nor AUX was sweet}}]} [\textbf{\textit{nor bitter}}] \text{ rather [\textit{strange}] //}
\text{ // it was neither sweet, nor bitter, but of a strange (taste) // (MS:77)}

\item \textbf{b.} \textit{Ali štā je to bilo, [tô se nē znā ]}_{F}, [\textbf{\textit{n̥ti ē ţkād ţko znāti}}]_{F}.
\text{but what [AUX that was] [that RFL not knows] [\textbf{\textit{nor FUT ever anyone know}}]}
\text{But what that was isn’t known, nor will anyone ever know. (MS:47)}
\end{enumerate}

In (a), the alternative set consists of the conjoined, informative propositions that the subject wasn’t sweet, that it wasn’t bitter, and that it tasted strange. In (b), by contrast, the alternative set is, presumably, an implicit scale of alternative propositions differing by how many people don’t know, and at what time, of which the explicitly asserted proposition is the strongest alternative. Nevertheless, each of these \textit{niti} phrases represents some informative alternative, and is therefore plausibly a focus.

As for \textit{kako}, its connection to focus is of a different kind, having to do with its status as a \textit{wh} word. First consider \textit{kako} in its interrogative use:

\textsuperscript{42} In discussing the negative focus (as opposed to the positive focus) of this construction, we must take care to distinguish the larger, focal constituent [\textit{not that they didn’t love her}], which is asserted to be true, from its subordinate, non-focal constituent [\textit{they didn’t love her}], which is asserted to be false. This particular example is especially confusing because both the larger and subordinate constituents are negated.
One view of the semantics of *wh* questions is that they denote sets of answers (Hamblin 1973, Karttunen 1977). According to this view, a *wh* word like *kako* is a variable—or, equivalently, a set of alternatives—whose value determines the set of possible answers. *Kako* in (80) is therefore the focus of the question, and promotes in order to bear focus prominence. Indeed, both light and heavy *wh* words, when used interrogatively, consistently promote in the received corpus.

However, I’ve omitted interrogative instances of *kako* from the counts in (77), but even in its relative use, *kako* promotes more than other heavy introducers. The question, then, is whether *kako* is also focused in relative contexts.

Take the following examples of relativizing *kako*, one promoted and one free.

Anticipating my analysis, I also mark these sentences’ presumed focal material:

(81) Relativizing *kako* can be stressed or unstressed (received)

a. // sváká stvár běše ná svůme městu, [kâko ih je ŏn ţostavio]F // // every thing was on self’s place [how them AUX he left ] // // everything was in its place, as he’d left it // (MS:54)

b. [Pijũ kávu, ětě kao Tůrči, sámo kârta klíži, i čûjěs kâko zvéči dúkat.]F [drink coffee silent as Turks only card slides and hear how clinks ducat ] They drink coffee, silent as Turks, a card slides, and you hear a ducat clink. (MS:40)

If *kako* promotes in (a) because it’s the head of a focus, then we must suppose that the *kako* phrase is the focus of the assertion, whereas *kako* is free in (b) because the *kako* phrase is either smaller or larger than the actual focus. These examples seem compatible
with this analysis. In (a), the *kako* phrase sums up the informative contribution of the sentence, whereas the entirety of (b) is new, scene-setting information.

Let’s suppose that *wh* phrases in general are frequently focusing, because of the compatibility of *wh* words’ alternative-denoting semantics with the function of focus. However, whereas in questions they’re necessarily focusing, in other contexts they may or may not be exploited for focus.

The plausibility of this account is supported by the fact that even light *wh* words sometimes promote in non-interrogative contexts, in both the received and Piva-Drobnjak corpora. Take these examples of *što*, as a relativizer (a) and as an existential pronoun (b):

(82) Non-interrogative *što* sometimes promotes (received, Piva-Drobnjak)

a. Oko bližnje šumě, *štò* se bez sväkõga gibänja před nama šírila // around nearer forest what RFL without any stirring before us spread // Around the nearer forest, *which* spread before us without a stir // (MS:69)

b. Ako ne učinìš *štò* š njim näljepo, ne pòmâžë tì drùkùje. if not do what with him nicely not helps you different If you don’t do *something* nice for him, he won’t help you another time. (V:208)

It isn’t apparent why *što* should promote in this exceptional way, if not to realize focus.

I therefore conclude that the relatively more frequent promotion of *niti* and *wh* words, whether interrogative or relativizing, can be attributed to the prosodic realization of focus. Armed with this conclusion, we may factor likely cases of promotion by focus from our corpus data, and generalize that, in Piva-Drobnjak, introducers promote only by focus, and are otherwise free. In the received standard, on the other hand, promotion by size among introducers remains significant, but less frequent than free clisis.
As a result, the findings so far concerning the parsing of the traditionally proclitic categories of negation, prepositions, and introducers can be summarized as follows:

(83) Piva-Drobnjak received modern

<table>
<thead>
<tr>
<th>Category</th>
<th>Piva-Drobnjak</th>
<th>received</th>
<th>modern</th>
</tr>
</thead>
<tbody>
<tr>
<td>negator ne</td>
<td>proclitic</td>
<td>proclitic</td>
<td>proclitic</td>
</tr>
<tr>
<td>prepositions</td>
<td>proclitic</td>
<td>free ~ proclitic</td>
<td>free ~ promoted</td>
</tr>
<tr>
<td>introducers</td>
<td>free</td>
<td>free ~ promoted</td>
<td>free ~ promoted</td>
</tr>
</tbody>
</table>

I also take the discussion in this section to support the head-of-focus account of focus realization—that is, in some dialects, focus prominence gravitates to the heads of focused phrases. Although this account remains rather preliminary, the evidence for it, as for many points in this study, consists largely in its power to account for several phenomena from across the clitic system. I take up this thread again in 4.5.7, arguing that the conjunctions *i, ni* are also frequently focusing, accounting for their tendency toward proclisis and promotion in dialects that stress heads of foci.

### 4.5.4 Complementizer proclisis

The foregoing discussion has illustrated introducer parsing in fairly typical contexts. This has shown that introducers exhibit similar prosody to prepositions, the sharpest exception being that introducers are less likely to procliticize. Nevertheless, introducer proclisis is attested, comprising two restricted patterns. One is complementizer proclisis to verbs, and is the subject of this section. The other is conjunction proclisis to sub-clausal complements, which I return to below.
Of the three varieties we’re investigating, only Piva-Drobnjak exhibits C-to-V proclisis, and this only in certain contexts. In these examples, šta ‘what’ procliticizes when serving as a relative pronoun (a), and da ‘that’ in an optative context (b):

(84) C-to-V proclisis in relative and optative contexts (Piva-Drobnjak)

a. Váljā sād štā rečēš.
   is good now what say
   It’s good, what you’re saying now. (V:190)

b. Dāvidīš kākāv mē nāred ukūči, kō u vāroši.
   c see what kind him AUX appliance at home like in town
   You should see the kind of appliances he has at home, like in town. (V:208)

According to Vuković’s description of this phenomenon in Piva-Drobnjak, it’s restricted to particular complementizers, verbs, and contexts (1940:189-190). For example, he reports that da gets transfer only from the verbs viđeti ‘see’, jesti ‘eat’, and ići ‘go’, and only in contexts of optativity and ‘unreal condition’:

(85) dā viđīm ‘that I see’
     dā edēm ‘that I eat’
     dā idēš ‘that you go’

In addition, proclisis is attested with the complementizers što ‘that, what’ and šta ‘what’ from mariti ‘care’ and reči ‘say’ in interrogative and relative contexts:

---

43 The summary in this section is an elaboration of Vuković’s terse description and examples, supported by additional examples from the Piva-Drobnjak corpus. I reproduce non-sentential examples as provided by Vuković—that is, without explicit context. Glosses are mine. Vuković (1940:189-190): ‘Ovo [transfer to da] je samo u ovakvim značenjima irealne pogodbe i neke vrste optativa. Na reču što i šta u upitnim i relativnim rečenicama (rede u ovim poslednjim) prenosi se akcent sa skraćenih oblika pomoćnih glagola… Ovako, se odnosi što i šta i uz prezent glagola mariti i reči…’.

44 Apparently, though Vuković doesn’t mention it explicitly, da procliticizes also to htjeti ‘want, FUT’ in its full—as opposed to peninal—form, e.g. dā očeš (no context for gloss; standard full form hoćeš; see 5.2).
In other contexts, no C-to-V proclisis takes place, even with these same verbs, as shown by the fact that the verbs bear initial falling accent:

(87) No C-to-V proclisis in other contexts (Piva-Drobnjak)

   a. Ànu,  da vȉđu, vȁljá li ti tā šćēr.
      come on  see is good  Q you that daughter
      Come on, let me see whether that daughter of yours is any good. (V:195)

   b. // nè trebā vȁzda čöek da 1dē zā tobōm da te ūēē.
      // NEG needs always person  goes after you  C you teaches
      // a person doesn’t always need to go after you to teach you. (V:218)

Some additional examples where complementizers are clearly not proclitic on following verbs help to illustrate that C-to-V proclisis is exceptional:

(88) Complementizers generally don’t procliticize to following verbs (Piva-Drobnjak)

   // a ne mògu da (nādēm) ūkova.  ‘but I can’t find a horseshoeing place’
   // pā s(e) izvīnō da (spāvā).  ‘then he turned over to sleep’
   // pā vās svījet da (kāžē) da njēsi.  ‘and all the world says that you aren’t’
   … onā dēca prispješe da (rādē).  ‘those children (are) ready to work’

Last, we may also cite some non-contextualized examples of complementizer proclisis from other sources, which show that proclisis is attested also with other complementizers (kad) and with other verbs (znam, treba):

(89) då znām  ‘that I know’  (Stevanović 1970:164)
   då trebā  ‘that 3SG needs’  (V:189, from Leskien 1914)
   kād rečēm  ‘if/when I say’  (MM:10, from Brabec et al. 1965)
4.5.5 An account of complementizer proclisis

Based on the preceding description of complementizer proclisis in Piva-Drobnjak, I propose that this results from essentially the same set of circumstances as *ne* proclisis. That is, in both phenomena, a lexical verb raises and adjoins to a function word, resulting in a recursive lexical word that’s optimally parsed by proclisis.

According to this hypothesis, C-to-V proclisis reflects overt verb adjunction to C (a). Otherwise, I assume that the verb generally remains within VP or IP (b):

\[
\begin{align*}
\text{(90) An adjunction analysis of C-to-V proclisis (Piva-Drobnjak)}
\end{align*}
\]

a.  \[
\begin{array}{c}
\text{CP} \\
/ \quad / \\
\text{C} \\
/ \quad / \\
\text{C} \\
/ \quad / \\
\text{V} \\
/ \quad / \\
\text{I} \\
/ \quad / \\
\text{VP} \\
/ \quad / \\
\text{da vidiš} \\
/ \quad / \\
\text{t_1} \\
/ \quad / \\
\text{kakav mu …} \\
/ \quad / \\
\text{viđu} \\
/ \quad / \\
\text{valja li ti …}
\end{array}
\]

‘you should see what kind …’

b.  \[
\begin{array}{c}
\text{CP} \\
/ \quad / \\
\text{C} \\
/ \quad / \\
\text{C} \\
/ \quad / \\
\text{V} \\
/ \quad / \\
\text{I} \\
/ \quad / \\
\text{CP} \\
/ \quad / \\
\text{da} \\
/ \quad / \\
\text{t_1} \\
/ \quad / \\
\text{kakav mu …} \\
/ \quad / \\
\text{viđu} \\
/ \quad / \\
\text{valja li ti …}
\end{array}
\]

‘(so) that I can see whether …’

I suggest that overt V-to-C movement is motivated by a strong mood feature in C. The presence of this feature is related to those contexts—optative, irrealis, interrogative, and relative—where C-to-V proclisis is found. The fact that proclisis is found with only a handful of verbs suggests that only these verbs are accepted, idiomatically, as compatible with these features. By contrast, V-to-Neg adjunction is regular (see 4.3.3). (See 5.2.6 for further discussion of verb movement in the clause.)

Verb movement to C is then predicted to result in proclisis, by the same account that I gave to *ne* proclisis. As with V-to-Neg adjunction, I assume that V-to-C adjunction
yields a recursive lexical word. The grammar fragment already established for this dialect (see 4.4.6) is then sufficient to favor internal proclisis (a):

(91) Complementizer proclisis (Piva-Drobnjak)

\[
\begin{array}{|l|c|c|c|}
\hline
CP & \text{da \ vidiš} & VP & \text{…} \\
\hline
\text{a.} & \rightarrow (\text{dā \ vidiš}) & \text{…} & \text{NRC(w)} & \text{ExH(P,s)} & \text{L(lex,w)} & \ast \text{!} \\
\text{b.} & \text{da (vidiš)} & \text{…} & \text{!} & \ast \text{!} \text{!} \\
\text{c.} & \text{(da (vidiš)) \ …} & \ast \text{!} & \text{L(lex,w)} & \text{L(w,lex)} \text{!} \text{!} \\
\hline
\end{array}
\]

However, the question then becomes why unraised verbs don’t serve as hosts for C-to-V proclisis. The same account that makes preposition proclisis to following nouns optimal in this dialect predicts that complementizers should procliticize to a following verb even if the verb remains in VP (a), but what we find is free clisis (b):

(92) Why don’t complementizers procliticize to unraised verbs?

\[
\begin{array}{|l|c|c|c|c|}
\hline
CP & \text{da [VP vido} & \text{…} & \text{ExH(P,s)} & \text{L(lex,w)} & \text{L(w,lex)} \\
\hline
\text{a.} & \rightarrow (\text{dā \ vido}) & \text{…} & \ast \text{!} & \ast \text{!} \text{!} \\
\text{b.} & \text{da (vido)} & \text{…} & \ast \text{!} & \ast \text{!} \text{!} \\
\hline
\end{array}
\]

Nevertheless, I propose that we can maintain the account of preposition proclisis, and yet still rule out C-to-V proclisis to unraised verbs. Just as I’m assuming that PP is consistently left-aligned to a P-phrase (see 4.4.6), let’s suppose that the left edge of VP also corresponds to a P edge, and that this prosodic boundary blocks proclisis.

The consistent presence of a left P edge at VP would explain why introducers fail to procliticize not only to following verbs, but to all categories, lexical or functional. This is perhaps clearest where introducers are followed by an underlyingly toneless word that transfers accent to the first syllable of a proclitic, but not as far as the introducer:
(93) Underlyingly toneless words don’t transfer accent to clause introducers
Piva-Drobnjak

// pă (pò polju) svùdà zášera. ‘so outside (is) everywhere slush’

received

// da (nè bi) imao nikakově brīgë // ‘that he might have no worries’

… nè htjede, da (nà boljè) krênë. ‘didn’t want to move on to a better one’

// a (nè znâm) üprävo zà što // ‘and I don’t know exactly why’

// a (nà rûke) lègao ččlom // ‘and on his arms laid his forehead’

If introducer proclisis in such cases is blocked by a P edge, we may consider a
couple of possibilities. Either all XPs that can be initial in VP—including NPs, APs, and
PPs—are aligned to P-phrases, or this edge is aligned to VP itself. Although we’ll see
that there are good reasons to think that some functional XPs, including PPs, are aligned
to P-phrases, it seems less plausible that all VP-internal XPs are.

Subject pronouns, for example, are like words of all other categories in that they
never parse together with preceding introducers:

(94) Clause introducers never share prosodic words with subject pronouns (received)

// da (tô) nîje nîšta // ‘(said) that that was nothing’

// pa da (ôn) nêmà zà tò nôvàcà // ‘so that he had because of that no money’

Yet as function words, pronouns aren’t expected to determine a left p-word edge, nor a
left P-phrase edge. In some dialects, by contrast, pronouns do frequently share p-words
with preceding prepositions and sub-clausal conjunctions (see 4.5.7).45

45 Peninitial clitics, on the other hand, do frequently parse together with preceding introducers, a possibility
that I account for by the premise that peninitial clitics, like introducers, precede the P-phrase edge that
separates them from the rest of their clause (see chapter 5).
I therefore propose that the P edge in question is determined by the edge of VP, by which I mean the greater VP, including VP-adjointed adverbs, as well as superordinate VP shells (Larson 1988) or vP projections (Hale and Keyser 1991, 1993), if these are assumed. That the entire greater VP should be aligned to a single P-phrase is in accordance with the general simplification observed in the mapping from syntactic to prosodic structures, which ignores most formal structure (see 1.3).

On the other hand, subject NPs, and more so subject pronouns, are generally considered to have raised out of VP by PF. Most explicit accounts of BCS syntax that I’m aware of assume this for BCS. Nevertheless, I’ll argue, based mainly on the placement of the peninitial clitics, that all material generated in VP remains in VP on the surface, except for topics, peninitial clitic hosts, and dislocated elements (see 5.2.6). As a result, most or all VP-generated material, including subject pronouns, is segregated from complementizers by the P edge at VP, blocking complementizer proclisis.

In the present framework, a left P edge at VP can be motivated by the constraint \( \text{ALIGN-L}(\text{lexP,P}) \). If ranked above \( \text{EXH}(P,s) \), this induces the presence of a P edge at the left edge of VP, ruling out complementizer proclisis in favor of free clisis:

\[
\begin{array}{c|c|c}
\text{CP da} & \text{ALIGN-L}(\text{lexP,P}) & \text{EXH}(P,s) \\
(\text{då vidu}) & \text{!} & * \\
\end{array}
\]

Naturally, such a proposal calls for supporting evidence. An immediate problem is that the proposal as it stands predicts that all lexical XPs, including noun, verb, and adjective phrases, should be left-aligned with P-phrases. Yet this is contradicted by the
phenomenon of regular preposition proclisis in Piva-Drobnjak, whereby prepositions and their noun hosts share a p-word that straddles the left edge of NP. This would be impossible if this NP edge corresponded to the edge of a P-phrase.

Nevertheless, the cumulative evidence for P-phrases will indicate that they’re constructed so as to be left-aligned with certain types of XPs, some lexical, and some functional. This evidence consists principally in how P edges restrict function word parsing, and is rather subtle, becoming apparent only by a comparison across several phenomena. For these reasons, and because patterns of P-phrase construction are crucial to the the account of introducer prosody, uncovering such evidence for P-phrasing is a primary goal of the remainder of this case study of introducers.

Before proceeding to further evidence for P-phrasing, we may contrast the present account of complementizer proclisis with that of Zec (1993). There, dialectal differences in accent transfer to prepositions, introducers, and other function words are attributed to differences in the domain of tone spreading—that is, whether tone spreads only within p-words, or also within larger prosodic constituents. In other words, accent transfer to a complementizer represents tone spread across a p-word edge.\(^{46}\)

I maintain that such variable processes approaches to tone spreading are to be dispreferred, because the formal analysis of tone spreading in Neo-Štokavian rules out the possibility of spreading across a p-word edge (see 2.4.8). Moreover, the discussion of

\(^{46}\) Zec (1993) proposes that tone spread can be parameterized to apply in any of three domains: the lexical phonological word, the postlexical phonological word, and the phonological phrase. However, though she classifies the Piva-Drobnjak dialect as one where tone spreads within the phonological phrase, she takes accent transfer to complementizers as a case only of spreading within the postlexical word (375).
complementizer proclisis in 4.5.4 showed that it correlates with syntactic context, which isn’t captured under a phonological account.

On the other hand, while the present account draws on a well substantiated analysis of word accent, and plausibly attributes proclisis to contexts of V-to-C raising, it also relies on a less well substantiated model of P-phrasing. In the rest of 4.5, therefore, I adduce further arguments for the pattern of P-phrasing in the clause.

4.5.6 Conjunction proclisis

The other pattern of introducer proclisis, apart from complementizer proclisis, is found with conjunctions. This is observed only with the conjunctions *i* ‘and, even’ and *ni* ‘nor, not even’, and is restricted to contexts where these introduce constituents smaller than a clause, especially noun phrases.

The examination of *i, ni* proclisis will serve several purposes. One is that the account depends on P-phrase construction, augmenting our understanding of that phenomenon. Further, conjunction proclisis exemplifies a third type of proclisis, which is motivated by the prosodic realization of focus.

I’ll begin with a general description of the pattern. These examples illustrate *i, ni* proclisis to the first word of a noun phrase:

\[(96) \quad i, ni \text{ proclisis to noun phrases (Piva-Drobnjak)}\]

\[a. \quad \text{Nakřaču mu pūno děbe sīra} \quad (i \quad \text{skorūpa}). \]
\[\quad \text{pour+FUT him full } \quad \text{debe} \quad \text{cheese and } \text{NP} \text{ cream } \]
\[\quad \text{I’ll pour him a full } \text{debe} \quad \text{of cheese and cream. (V:208)} \]

\[b. \quad \text{Němām dāvōdnijo} \quad (ni \quad \text{zrna}) \quad \text{kāvē} \quad \text{u kuči}. \]
\[\quad \text{not+have at all } \quad \text{nor} \quad \text{NP} \text{ grain coffee} \quad \text{in house} \]
\[\quad \text{I don’t have a single grain of coffee in the house. (V:199)} \]
By frequency, \(i, ni\) proclisis lies somewhere between the more regular patterns of \(ne\) and preposition proclisis, and rarer complementizer proclisis (see 2.2.7 and below). It differs also in that it’s found with hosts of all categories, just as conjunctions in general introduce all (phrasal) categories. However, while I provide examples of proclisis to various categories, I’ll focus in my analysis on \(i, ni\) proclisis to noun phrases.

Similarly to C-to-V proclisis, \(i, ni\) proclisis is significantly more frequent in Piva-Drobnjak than in the other varieties in this study. These examples illustrate proclisis to nouns, adjectives, and verbs (a), as well as failure of proclisis (b):\(^{47}\)

\begin{align*}
(97) & \quad i, ni & \text{proclisis to various categories in Piva-Drobnjak}\(^{48}\) \\
\text{a.} & \quad \text{Ôbijo sam (I drvo)(I kamně)} & \quad \text{‘I searched under tree and stone’} \\
& \quad \text{Nije B\ddot{o}g poediniyo (ni prste) na ruci.} & \quad \text{‘God made alike no fingers on the hand.’} \\
& \quad \text{// slu\u{s}o bi ga (I gl\ddot{a}dan)(I \ddot{z}\ddot{e}dan).} & \quad \text{‘you’d hear that he’s hungry and thirsty’} \\
& \quad \text{… zasijati (ni dvije) n\acute{a}s\acute{e}vnice.} & \quad \text{‘to plant not even two rows (of wheat)’} \\
& \quad \text{// nij\acute{e}sam (ni \\u{c}uo).} & \quad \text{‘I didn’t even hear’} \\
& \quad \text{M\ddot{o}gu otu\u{c}i (I doci) n\acute{a}ov\ddot{d}an.} & \quad \text{‘I can go and come back in a day’} \\
\text{b.} & \quad \text{Spr\acute{e}mijo j\ddot{o}j pr\ddot{e}sti i (p\ddot{a}r).} & \quad \text{‘he sent her a ring and money’} \\
& \quad \text{// i u k\ddot{o}sdbi, i u \ddot{or}\acute{a}nu, i (sv\ddot{u}d).} & \quad \text{‘in haymaking, plowing, and everywhere’} \\
& \quad \text{… dv\acute{a} k\ddot{o}na, j\acute{a}c\acute{e}ka i (dv\acute{a}) t\ddot{o}v\acute{a}rn\acute{a}.} & \quad \text{‘two riding horses and two for freight’} \\
& \quad \text{Nij\acute{e}sam ga ni (pogl\acute{e}dnula).} & \quad \text{‘I didn’t even glance at him.’} \\
& \quad \text{… n\acute{e} d\acute{a}ju ni (\acute{u}pora) tolik\ddot{o} mlij\acute{e}ka.} & \quad \text{‘they give not half that much milk’}\(^{49}\)
\end{align*}

In the received corpus, \(i, ni\) proclisis to lexical words is almost unattested. The few attested cases are apparently idiomatic (a), with lack of proclisis the norm (b):

---

\(^{47}\) Although numerals are a semi-functional category, I include several examples of proclisis to numerals, and the failure thereof, in order to illustrate the diversity of hosts for \(i, ni\) proclisis.

\(^{48}\) It isn’t obvious that \(ni\) isn’t proclitic on the words pogl\acute{e}dnula ‘glanced’, \u{u}pora ‘?’, since these prospective hosts bear rising accent, which normally isn’t expected to spread in any case. However, the analysis will indicate that \(i, ni\) attract accent when proclitic, overruling normal tone spreading patterns (see 4.5.7). I therefore include these examples as cases of failure of \(ni\) proclisis.

\(^{49}\) The example \(ne daju ni upola\ldots\) isn’t from the corpus, but from Vukovi\’\'c’s main text (1940:85).
Chapter 4 – Proclitic prosody

I, ni proclisis is strictly idiomatic in the received corpus

a. // věć da kao (i prē)(i daljē)... // i jēdno (i drugō) se prēvarilo // ... čòvek od četrdēsēt (i pēt) gōdīnā // ... ća (i śina) i duха svētōga. // rather, as previously and subsequently’ ‘both one and the other were mistaken’ ‘a man of forty and five years’ ‘the father, the son, and the holy spirit’

b. // da si tī žīv i (zdrāv). ... prōpao u tāmu i (tmūšu) ... i (drūgō) štō jōj je dōnēla. ... hrānīla ni (kūća) ni livada // ... ni (biō) nākloņen povērlīvīstī. // ‘that you’re alive and well’ ‘fallen into gloom and darkness’ ‘and other (stuff) that she brought her’ ‘neither a house nor a field kept up’ ‘nor was he inclined to trust’

Last, the few data collected from consultants show no evidence of i, ni proclisis:

I and ni don’t procliticize in the modern data$^{50}$

I (‘Miro) i (‘Ljiljana) me ’vole. (2) ‘Both Miro and Ljiljana love me.’
... i (‘bolji) i (‘viši). (1) ‘both better and higher’
... ni (’roditelji) ni (djeca). (1) ‘neither parents nor children’
... po’ljubili ni (’Goran) ni (’Jadranks). (1) ‘kissed neither Goran nor Jadranka’

It’s possible that contexts favoring i, ni proclisis are simply rare in the modern data. However, Zec (2000) also reports a lack of i, ni proclisis in standard Serbian, supporting the generalization that it’s unattested in the modern standards.

Combining the above observations on the attestation of i, ni proclisis to similar data on proclisis of ne, prepositions, and complementizers, we observe a rough cline in the regularity of proclisis across categories and dialects, such that conjunction proclisis is only slightly less unusual than complementizer proclisis:

$^{50}$ Some of these are problematic as examples of proclisis failure, because the potential hosts for proclisis, as far as I can determine, bear rising accent in dialects that maintain such contrasts, e.g. rōditelji, djēca (Benson). Only the potential hosts bōljī, višī are unproblematic in this respect. On the other hand, as I noted above, we’ll see that proclitic i, ni actively attract accent, supporting a free clitic analysis of these data.
The comparative regularity of proclisis across proclitic categories\(^{51}\)

<table>
<thead>
<tr>
<th>Category</th>
<th>Piva-Drobnjak</th>
<th>received</th>
<th>modern</th>
</tr>
</thead>
<tbody>
<tr>
<td>negator ne</td>
<td>regular</td>
<td>regular</td>
<td>regular</td>
</tr>
<tr>
<td>prepositions</td>
<td>regular</td>
<td>irregular</td>
<td>rare</td>
</tr>
<tr>
<td>conjunctions i, ni</td>
<td>irregular</td>
<td>irregular</td>
<td>rare</td>
</tr>
<tr>
<td>complementizers</td>
<td>irregular</td>
<td>rare</td>
<td>rare</td>
</tr>
</tbody>
</table>

Generally speaking, this comparison indicates that whatever the explanation for conjunction proclisis is, it isn’t the same as for other categories, which aren’t proclitic with the same frequency or regularity. However, i, ni may have more in common with complementizers, in the sense that, unlike ne and preposition, these categories don’t undergo regular proclisis in any dialect. In intuitive terms, some force prevents regular conjunction proclisis, but is overcome in certain contexts.

4.5.7 *An account of conjunction proclisis*

Unlike with C-to-V proclisis, Vuković states no rule for i, ni proclisis, perhaps because it isn’t considered unusual. However, a look at some further details of i, ni parsing motivate an account in terms of the interaction of phonological phrasing and focus. I’ll argue that regular P-phrasing blocks conjunction proclisis, but can be overcome by the realization of prosodic focus.

To begin with the role of P-phrasing, it’s significant that i, ni proclisis is regularly blocked not only to noun phrases, but to prepositional phrases too. These next examples illustrate the parsing of Cnj-P-N sequences with underlyingly toneless nouns, which

\(^{51}\) In this table, ‘irregular’ should be taken to mean ‘dependent on context’, and ‘rare’ to mean ‘unattested or dialect-dependent’. The table also excludes proclisis to function words (see below).
transfer falling accent to the first syllable of a proclitic. Interestingly, accent transfers only as far the preposition, showing that these conjunctions aren’t proclitic:

(101) Underlyingly toneless words don’t transfer accent to conjunctions

Piva-Drobnjak
Námiran sam i sâ žitom i (sâ sijenom). ‘I’m supplied with grain and with hay.’
received
Glêdâ ûzvereno i (nâ strânû) // ‘he looks upward and to the side’
… úpravljene na svéca i (nâ nebo). ‘directed at the saint and at heaven’
… i (û oči) svâkôg prâzôika dôlazî // ‘and on eve of every holiday comes’

This effect isn’t explained by the account of preposition proclisis, by which we might expect proclisis of both conjunctions and prepositions, at least in Piva-Drobnjak, where P-phrase Exhaustivity motivates regular proclisis. The fact that conjunction proclisis is blocked therefore indicates the presence of a P-phrase edge.

Further, these data indicate that the relevant P edge isn’t always aligned to NP, but rather corresponds to the edge of PP when PP is present. I therefore claim that the P edge responsible for the irregularity of $i$, $ni$ proclisis is built at the left edge of PP when there is a PP, and otherwise at the left edge of NP. This edge effectively blocks an NP conjunction from cliticizing to its NP complement, and likewise a PP conjunction from its PP complement.

---

52 The fuller context from which this example is taken shows that $i$ doesn’t introduce the entire clause, but only the prepositional phrase: ‘… vêc kao úvêk čêká njêna mâjkâ, kôjá svâkad sùbotôm $i$ û oči svâkôg prâzôika dôlazî, da kôd nê prenôcît.’ ‘… already like always her mother is waiting, who every Saturday and on the eve of every holiday comes to spend the night at her house.’ (MS:123)
To put it another way, P-phrases group prepositions with NP, but segregate conjunctions. This lends support to my earlier assumption, in the analysis of preposition parsing, that a P edge at PP also serves to block preposition enclisis (see 4.4.6).

A snag for this proposal is that it seems to contradict the Lexical Category Condition (LCC), which posits that only lexical categories (like NP) are matched to prosodic constituents, while functional categories (like PP) are ignored. However, I’d like to suggest a solution that maintains the LCC, as well as the present conclusions regarding P-phrasing. The idea is that those XPs that determine P-phrases aren’t necessarily lexical themselves, but are *extended projections* of lexical heads.

Some support for this comes from a comparison between PP, which determines a P-phrase, and pronominals (pronouns and determiner-like elements), which don’t. Take the examples in (102) of prepositions and conjunctions preceding various pronominals, from the Piva-Drobnjak and received corpora. Whereas preposition proclisis is irregular in the received corpus, and *i, ni* proclisis is irregular in both corpora, these categories are regularly proclitic in both corpora on following pronominals:53

(102)  Regular preposition and conjunction proclisis to pronominals

<table>
<thead>
<tr>
<th>Prepositions</th>
<th>Conjunctions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Piva-Drobnjak</td>
<td></td>
</tr>
<tr>
<td>a. (zà njima)</td>
<td>‘behind them’</td>
</tr>
<tr>
<td>(ù tój) kúčí</td>
<td>‘in that house’</td>
</tr>
<tr>
<td>(ù našem) sêlu</td>
<td>‘in our village’</td>
</tr>
<tr>
<td>b. (ni s tôm) ednôm óvcôm</td>
<td>‘nor with that one sheep’</td>
</tr>
</tbody>
</table>

There are a handful of exceptions to this otherwise regular pattern in the received corpus.

---

53 There are a handful of exceptions to this otherwise regular pattern in the received corpus.
I justify the comparison between PP and pronominals based on arguments that both represent functional phrases. One such argument is that only full object pronouns, and not their peninitial counterparts, can serve as complements to conjunctions and prepositions (see 5.2.3). Since conjunctions and prepositions take phrasal complements, this indicates that object pronouns, at least in this context, are phrases.

Second, Zlatić (1997) argues, based on the distribution and morphology of pronominal demonstratives and determiner-like elements, that these are DPs or NPs in specifiers, as opposed to determiner or adjective heads. Thus, PPs and pronominals have in common that they’re functional XPs, yet of these, only PPs determine P-phrases.

I hypothesize that the important difference is that PPs with NP complements have a lexical core—that is, the noun head—that makes the entire PP lexical with respect to P-phrase determination. In 4.7.9, I’ll formalize this idea in terms of extended projection. For now, I’ll assume that a P edge at PP blocks regular conjunction proclisis.

The second part of the analysis of conjunction proclisis has to do with why *i*, *ni* proclisis happens at all, in spite of regular P-phrasing. I propose to show that proclisis obtains in contexts of focus, and happens in order to realize focus prominence on the conjunction. I’ll show, first, that alternations in proclisis correspond to the presence or
absence of focus, and second, that different dialects can exhibit different but consistent strategies for resolving conflicts between P-phrasing and focus.

One phenomenon that indicates a link between *i*, *ni* and focus is their use in scalar indefinite pronouns and adverbs. These consist of *i* or *ni* followed by a *wh* word:

(103) Some scalar indefinite expressions (Benson)\(^{54}\)

<table>
<thead>
<tr>
<th><em>wh</em> word</th>
<th><em>i</em>-indefinite</th>
<th><em>ni</em>-indefinite</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>tkö, kö</td>
<td><em>iktō, iktō</em></td>
<td><em>nīktō, nīktō</em></td>
<td>‘who, anyone, no one’</td>
</tr>
<tr>
<td>kōga</td>
<td><em>iktōga</em></td>
<td><em>nīktōga</em></td>
<td>‘who, anyone, no one (GEN)’</td>
</tr>
<tr>
<td>štā</td>
<td><em>ištā</em></td>
<td><em>nīštā</em></td>
<td>‘what, anything, nothing’</td>
</tr>
<tr>
<td>čėga</td>
<td><em>ičęga</em></td>
<td><em>nīčęga</em></td>
<td>‘what, anything, nothing (GEN)’</td>
</tr>
<tr>
<td>kāko, kāko</td>
<td><em>ikāko</em></td>
<td><em>nīkāko</em></td>
<td>‘how, in any way, in no way’</td>
</tr>
<tr>
<td>gdđe, gdđe</td>
<td><em>iģđe, iģđe</em></td>
<td><em>nīģđe, nīģđe</em></td>
<td>‘where, anywhere, nowhere’</td>
</tr>
<tr>
<td>kād, kāda</td>
<td><em>ikād, iķadā</em></td>
<td><em>nīkād, nīkādā</em></td>
<td>‘when, ever, never’</td>
</tr>
<tr>
<td>kākav</td>
<td><em>ikakav</em></td>
<td><em>nīkakav</em></td>
<td>‘what kind, any kind, no kind’</td>
</tr>
</tbody>
</table>

By ‘scalar indefinite’, I mean an indefinite expression that conveys emphatic universal quantification, by focusing one endpoint of a presupposed scale of alternatives (Horn 1969, Fauconnier 1975, Lee and Horn 1994, Israel 1996, Haspelmath 1997). I further surmise that whenever *i*, *ni* mean something like ‘any, even’ and ‘no, not even’, respectively—whether in indefinite or other expressions—they form inherently focusing scalar expressions, on the lines of Horn’s analysis of English *even*.

I should also clarify that, following Zec (2000), I analyze *i*, *ni* in scalar indefinites as proclitics, even though they’re written as one word with the *wh* portion. An alternative analysis according to which *i*, *ni* are prefixes isn’t compelling, because they’re split from

\(^{54}\) The *i*-indefinite and *ni*-indefinite series (in Progovac’s terms, *i*-NPIs and *ni*-NPIs) have essentially the same quantificational meaning, but are distinguished by their distribution, being found respectively without and with same-clause negation (Progovac 1994, Haspelmath 1997).
the *wh* portion by prepositions—compare *nikoga* ‘no one’, *ni na koga* ‘at no one’—indicating that they remain syntactically free heads.\(^55\)

Significant for the analysis of proclisis is that *i, ni* indefinites get accent on *i, ni*, even with *wh* words that otherwise bear rising accent (e.g. *kòga, nìkoga*). In this respect, accent in *i, ni* indefinites differs from other conjunction-pronominal sequences, in which accent transfers to the conjunction from hosts that otherwise bear falling accent (a), but not, as expected, from hosts with rising accent (b):

\[(104)\] Conjunctions don’t attract accent from other pronominals (received)

\[
\begin{align*}
\text{a. } & \text{tì i òì ‘you too’} & \text{b. } & \text{mène i mène ‘me too (ACC)’} \\
& \text{òn i òì ‘he too’} & & \text{mèni i mèni ‘me too (DAT)’} \\
& \text{mì i mì ‘we too’} & & \text{njègà i njègà ‘him too (ACC)’} \\
& \text{njòj i njòj ‘her too (DAT)’} & & \text{njèmu i njèmu ‘him too (DAT)’} \\
\end{align*}
\]

This supports the idea that accent attraction in *i, ni* indefinites has something to do with the special focusing properties of those expressions.

With respect to standard Serbian, Zec (2000) analyzes accent in *i, ni* indefinites as a resolution of two conflicting demands, one to realize focus accent on the complement of *i, ni*, and another that forbids focus accent on an indefinite pronoun—that is, on the *wh* portion of the indefinite. I adopt Zec’s analysis for all varieties in which *i, ni* proclisis is regular in indefinites, but otherwise rare or unattested.

In varieties like Piva-Drobnjak, by contrast, where *i, ni* sometimes get accent in non-indefinite contexts too, I propose that the principles of focus realization are different,

\[^{55}\text{The accentuation and word order of *i*-indefinites and *ni*-indefinites that combine with prepositions vary both by dialect and by the length of the preposition. There’s a tendency to join *i, ni* to the *wh* portion with longer prepositions, e.g. *ni kod koga* or *kod nikoga* ‘at no one’s’, *preko ničega* ‘across nothing’}.

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such that focus accent isn’t just deflected onto \( i, ni \), but gravitates to them. This recalls the analysis of *ne* promotion in constituent negation, where I concluded that modern and received varieties differ with respect to whether focus in that construction is realized within the complement of *ne*, or on *ne* itself (4.3.5, 4.3.6).

I therefore propose to apply the account of *ne* promotion by focus to \( i, ni \) proclisis by focus. In both phenomena, focus on a phrase results in special prominence on the syntactic head of the phrase. However, whereas in the received data this is effected by promoting the relevant head (*ne*), in Piva-Drobnjak this is accomplished by proclisis and concomitant accent transfer to the head (*i, ni*). In the rest of this section, I’ll show that this represents a consistent difference between these two varieties.

First, a couple of alternations in Piva-Drobnjak will establish that proclisis-plus-transfer is a consistent strategy in that variety for realizing focus prominence on a head of focus. One such alternation is found in combinations of *ni* with *jedan* ‘one’. While accent remains on *jedan* when these have the plain meaning ‘neither one’ (a), accent transfers to *ni* in negative scalar contexts where they mean ‘no, none’ (b):\(^{56,57}\)

\[
\text{(105) Accent transfers to } \textit{ni} \text{ from } \textit{jedan} \text{ in scalar contexts (Piva-Drobnjak)}
\]

\[
a. \quad \text{Ni } \textit{jednog} \od \textit{njig} \text{ dvojice nema.} \\
\text{nor one of them pair there isn’t} \\
\text{Neither one of them is around. (V:118)}
\]

\[
b. \quad \text{Nijedna druga nije vise muke preturala pro glave, no sto sam ja.} \\
\text{nor+one other not+AUX more trouble undergone through head than C AUX I} \\
\text{No other has lived through more more trouble than I. (V:118)}
\]

\(^{56}\) Vuković (1940:118): ‘with the particle *ni*, the numeral *jedan* in its meaning as a numeral doesn’t change its accent… but in the meaning ‘no one’, ‘no’, we more commonly have accent on the particle (Sa partikulom ni broj *jedan* u značenju broja ne menja akcenat… ali u značenju *niko*, *nikoji* imamo običniji akc. partikule)’.

\(^{57}\) These examples also show that when *jedan* transfers its accent to *ni*, they’re written as one word.
In short, accent on *ni* correlates with focus on the *ni* phrase, and is effected by proclisis.

Interestingly, the same phenomenon is observed in this variety with prepositions. Vuković observes that accent transfer to prepositions sometimes depends on context. For example, the noun *vrata* ‘door’ normally bears rising accent, which doesn’t transfer:

(106) No transfer from *vrata* (Piva-Drobnjak)
   a. Na vrátu üdarijo brávu.  
      on door drove in lock  
      He locked the door. (V:66)
   b. O vrátima mu višě drónjci.  
      on door him hang rags  
      There are rags on his door. (V:66)

In some contexts, however, *vrata* loses its accent to a preposition:

(107) Transfer from *vrata* (Piva-Drobnjak)
   a. Úlazím ná vrāta.  
      enter on door  
      I enter the door. (V:66)
   b. Klčě́i zá vrátima.  
      kneels behind door  
      3SG is kneeling behind the door. (V:66)

From Vuković’s comments, I understand the cases with no transfer to lack focus on *vrata* and its preposition, while those with transfer focus the PP:
It is worth noting that the accent is not always transferred to the preposition with these words, rather a difference in accent usually corresponds to a difference in meaning… [the sentence Na vrata udario bravu ‘he locked the door’] draws attention to that with which one closes the opening [bravu ‘lock’], rather than the opening [vrata ‘door’], into houses for example. (Vuković 1940:66)

In other words, the focus in the example [PP Na vrata] udario bravu ‘He locked the door’ is on bravu ‘lock’, which exhibits the sentence-final order typical of focus, while the PP na vrata is non-focal, backgrounded information. By contrast, in the example Ulazim [PP na vrata] ‘I enter the door’, the PP is the emphasized, focused information. Accordingly, the head of focus, na, gets accent by proclisis.

I conclude that, in Piva-Drobnjak, both conjunctions and prepositions can get accent as heads of focus, and that this is effected, when necessary, by irregular proclisis or irregular accent transfer.

An interface constraint exposition of this account, though preliminary, will help to clarify the interactions between P-phrasing and focus realization, as well as the dialectal differences proposed here. First, I’ll adopt an ad hoc P-phrasing constraint, to be revised when the model of P-phrasing is more complete:

(108) ALIGN-P: every NP is left-aligned to a P-phrase, unless the NP is the complement of a preposition, in which case the PP is left-aligned to a P-phrase.

Next, based on Truckenbrodt’s Optimality Theoretic articulation of prosodic focus realization (a), I offer a head-of-focus version of this constraint (b):

---

58 ‘Valja primetiti da nije uvek kod ovih reči prenesen akc. na predlog, ali većinom različi akcenta odgovara i razlika u značenju… [Na vrata udario bravu] misli se na ono čim se zatvara otvor, a ne na otvor, u kuće na pr.’
(109) Constraints on focus realization

a. **FOCUS**: if F is a focus and DF is its domain, then the highest prominence in DF is within F. (Truckenbrodt 1995:134)

b. **FOCUS(head)**: if F is a focus and DF is its domain, then the highest prominence in DF is within the syntactic head of F.

While the usual **FOCUS** is active in standard Serbian and at least some other modern standards, **FOCUS(head)** is active in the received and Piva-Drobnjak varieties.

With these constraints, we may express the proposed account of proclisis by focus as follows. Take the Piva-Drobnjak example ȉdrvo ȉkamën ‘both tree and stone’, in which accent on the conjunctions presumably reflects focus on both i-phrases.

Although **ALIGN-P** would normally prefer to left-align P edges to the NPs *drvo* and *kamen*, thereby segregating them from their respective conjunctions (c), the higher-ranked **FOCUS(head)** overrules regular P-phrasing in this context in favor of proclisis, in order to realize focus prominence on the conjunctions (a):

(110) Conjunction proclisis by focus (Piva-Drobnjak)

<table>
<thead>
<tr>
<th>a.</th>
<th>[i [NP drvo]]F [i [NP kamën]]F</th>
<th>FOC(head)</th>
<th>R(w,lex)</th>
<th>ALIGN-P</th>
</tr>
</thead>
<tbody>
<tr>
<td>b.</td>
<td>(i) { (drvo) (i) }{ (kamên)</td>
<td></td>
<td>* !</td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td>i { (dřvo) i }{ (kâmên)</td>
<td></td>
<td>! !</td>
<td></td>
</tr>
</tbody>
</table>

I assume that the other attested strategy for realizing focus on *i*, promotion (b), is ruled out by prosodic word alignment—specifically, R(w,lex).

On the other hand, the analysis of *ne* parsing in constituent negation indicated that, in the grammar of the received corpus, promotion is the preferred strategy for realizing focus prominence on *ne*, e.g. [nȅ [PP u kâkvôj göd zâbîtnôj ülici]] ‘not in some
god-forsaken street’. This dialect difference is supported by further data indicating that
the conjunction $i$ also promotes by focus in this variety:

(111) $I$ promotion by focus (received)

a. // skòči göre $i$ káži, da smo ovđje $ı$ da ga ü lòv zovémo //
   // jump upstairs and say C AUX here and C him to hunt call //
   // go up and say that we're here, and that we summon him to the hunt // (MS:66)

b. … tàkô drág svétak, što imádè ràngosti $ı$ za bogatása $ı$ za siròmaha.
   … such dear holiday C there is joy and for rich and for poor
   … (it’s) such a dear holiday, because there is joy for both rich and poor. (MS:70)

c. // za znȃk i znȃmbFa $ı$ trùdbenći $ı$ gospodári ròdnǹ nam grûdǹ //
   // for sign and omen C AUX and workers and masters native us soil //
   // as a sign that we are both workers and masters of our native soil // (MS:114)

In these examples, the accentogenic nouns and PN sequences that follow $i$ retain
their accent—e.g. ü lòv, bogatása, gospodári—showing that $i$ is promoted, not proclitic.

As with other examples of accented conjunctions, it isn’t obvious that $i$, or the phrases
that it heads, are in fact focused. Still, these $i$ phrases are utterance-final, which is one
correlate of focus, and no more likely explanation for their promotion is apparent.

This difference between the received and Piva-Drobnjak varieties is then
accounted for by a minimal reranking of the constraints used in (110). I deduce that,
while FOCUS(head) is active in both varieties, the received standard values P-phrase
alignment over prosodic word alignment, so that FOCUS(head) is satisfied by promotion
(a), rather than by going against regular P-phrasing (b):
Conjunction promotion by focus (received)

\[
\begin{array}{|c|c|c|c|}
\hline
\text{FOC(head)} & \text{ALIGN-P} & \text{R(w,lex)} \\
\hline
\text{a.} \quad \rightarrow (i) \{ (\text{trudbeni}) \} (i) \{ (\text{gospodari}) \} & * & * \\
\text{b.} \quad (i \text{ trudbeni}) \{ (i \text{ gospodari}) \} & *! & *! \\
\text{c.} \quad i \{ (\text{trudbeni}) \} i \{ (\text{gospodari}) \} & *! & *! \\
\hline
\end{array}
\]

The findings concerning the effects of focus on function word parsing in Piva-Drobnjak and the received standard are summarized here:

Some effects of focus on function word parsing in two varieties

<table>
<thead>
<tr>
<th></th>
<th>Piva-Drobnjak</th>
<th>received</th>
</tr>
</thead>
<tbody>
<tr>
<td>negator \textit{ne}</td>
<td>—</td>
<td>promotion by focus</td>
</tr>
<tr>
<td>prepositions</td>
<td>proclisis by focus</td>
<td>—</td>
</tr>
<tr>
<td>conjunctions \textit{i}, \textit{ni}</td>
<td>proclisis by focus</td>
<td>promotion by focus</td>
</tr>
<tr>
<td>complementizers</td>
<td>promotion by focus</td>
<td>promotion by focus</td>
</tr>
</tbody>
</table>

Two cells in this table are unfilled for lack of examples. However, the available data seem to bear out the generalization that both these varieties put focus prominence on the head of focus, but that this is achieved in the Piva-Drobnjak dialect by proclisis, and in the received standard by promotion. As for the modern standards, the available data indicate that these exhibit few or no head-of-focus effects.

It isn’t apparent why complementizers depart from the general pattern in Piva-Drobnjak, promoting to bear focus prominence, rather than procliticizing (see 4.5.3). Perhaps this is due to principles of P-phrasing, by which the P edge at VP, which blocks complementizer proclisis, isn’t overridden as easily as the P edge at NP (or PP). Or this may have to do with the realization of focus, such that focus is optimally realized only on the complementizer, rather than on a p-word shared with some accentogenic host.
I think that progress on this question requires further data than are available to this study, and a more thorough analysis of the semantic and prosodic properties of focus in the vicinity of function words. Nevertheless, I don’t take this to detract from the point that the general correlation between focus realization on the one hand, and promotion or proclisis on the other, supports the claim that i, ni procliticize by focus.

Thus, one result of this account of conjunction proclisis is to illustrate a third type of proclisis, motivated by prosodic focus. This is to be distinguished from proclisis by adjunction (observed with ne and complementizers), and proclisis by Exhaustivity (observed with prepositions).

Another result is to support the account of ne promotion by focus (4.3.6), by showing that conjunctions can promote by focus too. Further, we saw that whether a particular dialect realizes focus on function words by promotion or by proclisis seems to be consistent across function word categories, which supports the claim that function word parsing depends on syntactic context, but is blind to syntactic category.

Last, this account adds to the growing model of P-phrasing. Combining these conclusions with those from complementizer proclisis, I’ve proposed that P-phrases are aligned to VP, NP, and PP. As a result, introducers are blocked from proclisis to their complements, except in contexts of V-to-C raising (for complementizers), and contexts of focus (for i, ni).

### 4.5.8 Summary

This concludes the last case study of this chapter on the traditional proclitics. The broad result of this investigation of introducer prosody is to elaborate on the claim that
the surface prosodic representations of all of the traditional proclitic categories are
determined by a single, general interface grammar. Further, the grammar makes no
reference to categories or underlying subcategorizations. Rather, surface prosodic
differences among function words derive, ultimately, from their syntactic configurations
in the clause, their locations with respect to focus, and their phonological weight.

I showed, first, that introducers are attested in the same three parses as ne and
prepositions—namely internal proclisis, free clisis, and promotion (4.5.2). Second, the
phenomena of proclisis by adjunction and promotion by focus, already observed with ne,
are found with introducers too (4.5.3, 4.5.5). Third, I identified another type of proclisis,
related to focus, attested both with the conjunctions i, ni and with prepositions (4.5.7).

A finer point brought to the fore here is the influence of phonological phrases on
function word prosody. I explained the the irregularity of introducer proclisis as resulting
from a model of P-phrasing that regularly aligns P-phrase edges to CP, VP, and
alternately NP or PP. I proceed to develop this P-phrasing model further in 4.6.

4.6 Phonological phrasing

4.6.1 Introduction

Unlike some other prosodic constituents, such as prosodic word and intonational
phrase, phonological phrases have no established correlates in BCS. The few proposals
concerning P-phrases are vague and fragmented. It therefore remains an open question
whether P-phrases exist in the language, and what evidence there might be for them.

In 4.5, I offered some arguments for the existence of P-phrases based on apparent
barriers to clisis. These were cases where function words fail to be parsed with adjacent
words from which they’re separated by XP edges, which I took to correspond, in turn, to otherwise invisible P-phrase edges that block clisis. Specifically, I proposed that P-phrases aligned to the left edges of VP, NP, and PP serve to block complementizer proclisis to elements in VP, and likewise conjunction proclisis to NP and PP.

Now in 4.6, I’ll develop this P-phrasing model into a formal account in terms of Prosodic Clitic Theory. After reviewing some of the existing arguments for P-phrases in BCS, I look at some additional evidence from barriers to introducer clisis. I then put forward a formal account in which P-phrases are determined in part by interface constraints that relate them to the extended projections of lexical heads.

### 4.6.2 Some previous proposals

I’ll begin by reviewing some previous proposals regarding phonological phrases in BCS, paying particular attention to the proposed evidence for their existence. As we’ll see, although P-phrases have at times been cited as playing a role in various phonological phenomena, there is as yet no established account of their shape and determination.

One proposal is that of Radanović-Kocić (1988, 1996), who argues for a role for P-phrase in peninitial clitic placement, based on evidence from clitic placement, /j/ degemination, and consonant assimilations. More specifically, Radanović-Kocić claims that PCs, though parsed by p-word, are placed immediately following the first P-phrase in their I-phrase. However, the arguments are rather indirect.

She observes, for example, that /jj/ sequences degeminate in some contexts, such as between the verb and object in (a), but fail to degeminate in others, such as following the fronted adjunct in (b):
A prosodic break blocks degemination

(114) a. Da\textipa{\textipa{j} organ sestri.} /j/, */jj/
give comforter sister
Give the comforter to your sister. (Radanović-Kocić 1988:127)

b. Za Prvi maj // ja putujem. /jj/, */j/
on first May I travel
On May Day I am traveling. (Radanović-Kocić 1988:130)

(See 5.2.6, 5.5.6 regarding similar claims based on intersegmental phenomena.)

Reasoning further that degemination is blocked by an I-phrase edge, Radanović-Kocić concludes that PCs follow some prosodic constituent that’s smaller than I-phrase, but larger than p-word, which must therefore be P-phrase. However, she identifies no observable properties of P-phrase itself, other than its role in determining PC placement.

Zec and Inkelas (1990) also propose a role for P-phrase in determining PC placement, in connection to a topic construction. This construction is characterized by a requirement that topics form separate P-phrases, which has the effect, in turn, of inducing late PC placement (see 5.4.3, 5.4.5). In this sentence, for example, the PC su can’t follow the bracketed topic directly, but must follow the later word ostali:

(115) [U Rio de Žaneiru] ostali su dve godine.
[in Rio de Janeiro] stayed AUX two years
In Rio de Janeiro, they stayed two years. (Zec & Inkelas 1990:375)

Zec (1997) suggests further that P-phrases can be identified by certain syntactic and phonological criteria, but isn’t more explicit regarding what these are:
In contrast to the intonational phrase, which is distinguished by a characteristic melody, the phonological phrase does not possess clear phonetic correlates, but can be identified on the basis of syntactic and phonological factors. (Zec 1997:39)

However, it seems that one of Zec’s criteria is relative prominence. For example, she divides this sentence into two head-final P-phrases, which are identifiable, presumably, by the prominence peaks on their respective head words lasta and proleće:

(116) Identifying P-phrases by relative prominence

\[
\text{I-phrases} \quad \# \quad x \quad \# \\
\text{P-phrases} \quad \{ \quad x \quad \} \{ \quad x \quad \} \\
\text{p-words} \quad ( \quad x \quad ) ( \quad x \quad ) ( \quad x \quad )( \quad x \quad )
\]

Jedna lâsta ne čini proleće  
one swallow not makes spring  
A swallow does not a spring make. (Zec 1997:41)

Last, Godjevac (2000a, 2000b) offers some discussion of an intonational phenomenon that may be related to P-phrase. Godjevac calls this phenomenon pleating, citing also Kostić (1983), who calls it nivelisanje ‘leveling’.

Pleating is observed in I-phrases longer than five or six words, and consists of an upward reset at one or more points in the normally regular downtrend of pitch, creating a pleated shape in the intonational contour of the I-phrase. In these sentences, for example, I mark with double slashes (//) those junctures where Godjevac observes pleats:

(117) Pleating (Godjevac 2000a:143-145)

a. Zelena marama moje // babe od mame je na // ormanu u njegovoj vili.  
green scarf my mother’s mother AUX on cupboard in his villa  
The green scarf of my mother’s mother is on the cupboard in his villa.

59 ‘Za razliku od intonacione fraze, koja se odlikuje karakterističnom melodijom, prozodijska fraza ne poseduje jasne fonetske korelate, ali se zato može identifikovati na osnovu sintaksičkih i fonoloških faktora.’
   His wife of first marriage had two violins of same period

Godjevac (2000b) takes pleating as evidence for a prosodic constituent that she calls \textit{intermediate phrase}. By contrast, she reasons elsewhere (2000a) that pleats don’t support the existence of such a constituent, observing that we find pleats at at least two kinds of juncture, which don’t obviously form a natural class: head-complement (e.g. \textit{had // two violins}) and head-modifier (\textit{violins of // same period}).

Unfortunately, I’m not able in this study to further explore the potential informativeness of segmental processes, relative prominence, or pleating for the existence of P-phrase, but must rely on what evidence can be gleaned from patterns in function word parsing. Therefore, in the absence of an articulated account of P-phrasing in BCS, I’ll proceed with an account based on evidence from barriers to clisis.

\textbf{4.6.3 Evidence for a phonological phrase edge at CP}

Before attempting a more formal account of P-phrase determination, I’ll discuss evidence for one other P edge with a role in introducer parsing. This edge is consistently left-aligned to CP. Besides helping to flesh out the P-phrasing model, this supports the claim that some P-phrases correspond to functional projections, and is of central importance to the account of peninitial clisis in chapter 5.

One argument that CP is left-aligned to a P-phrase has to do with promotion. Compare the examples in (118), where the light complementizer \textit{da} follows a sequence of matrix PCs (\textit{mi je}), and precedes various same-clause PC sequences (∅, \textit{me}, \textit{me je}).
Significantly, *da* is free between matrix PCs and a following accentogenic word (a), but promotes when followed by one or more PCs in its own clause (b,c):

(118) Complementizer promotion inside PC sequences (3 speakers)

a. 'Drago mi je [CP *da* ˈletim ] ‘I’m glad that I’m flying.’
   b. 'Drago mi je [CP (*da* me) ˈvoli ] ‘I’m glad that 3sg loves me.’
   c. 'Drago mi je [CP (*da* me je) poˈljubila] ‘I’m glad that she kissed me.’

Since the bimoraic minimum on promotion is met only when light *da* promotes together with at least one following PC, I call this pattern *co-promotion* (see 5.3.2, 5.5.2).

Significantly, this comparison shows that complementizer co-promotion depends on the weight of functional material following the CP edge, rather than on that preceding the CP edge. Put another way, any material that precedes the CP edge has no effect on the parsing of following material. This supports the existence of a prosodic boundary here that prevents parsing a complementizer with preceding material.

I therefore propose that the left edge of CP corresponds to a left P edge:

(119) A P-phrase edge at CP blocks co-promotion with preceding material

a. #1 'Drago mi je {P *da* ˈletim } #
   b. #1 'Drago mi je {P (*da* me) ˈvoli } #
   c. #1 'Drago mi je {P (*da* me je) poˈljubila } #

I don’t yet venture to indicate other P-phrase and P-word edges, because the P-phrasing model is still incomplete, and the prosodification of PCs uncertain (see chapter 5).

A minimally different analysis of these facts is that CP is left-aligned not to a P-phrase, but to an I-phrase. In fact, many works on BCS clisis, especially concerning the prosodic representation and word order of the PCs, assume that clauses, whether main or

While it’s undoubtedly the case that clauses often correspond to I-phrases, I propose that the necessary correspondence is not to I-phrases, but to P-phrases. That is, CP is necessarily left-aligned to a P-phrase. This P-phrase, in turn, may be aligned to an I-phrase, but this isn’t always the case.60

Take for example the small embedded clause in this sentence:

(120) Drago mi je [da letim].
    dear me AUX [C fly ]
    I’m glad that I’m flying.

Pitch tracks of three speakers who were recorded reading this example consistently showed a pitch contour characteristic of a single I-phrase, with a single I-level pitch accent—a declarative fall (L−)—over the last p-word (letim):

(121) A small embedded clause isn’t necessarily an I-phrase (DT)

---

60 I’ll claim, further, that clauses are left-aligned to P-phrase whether they’re CPs—that is, introduced by an overt complementizer—or a bare IPs, though for the present I’m concerned only with CPs. See 5.4, 5.5.
The left edge of the embedded clause fails to exhibit a continuation rise ($H^-$), which is a salient property of utterance-medial I-phrase breaks. For comparison, take this example, which consists of two short, independent clauses:

(122) **Ona je zla, ali me voli.**

*She is evil, but she loves me.*

A pitch track of this example (also from consultant DT) shows that in this case, each clause gets its own I-phrase, and therefore its own phrase accent. The first I-phrase carries a continuation rise ($H^-$), and the second a declarative fall ($L^-$):

(123) **An utterance that contains two I-phrases (DT)**

The absence of such a continuation rise at the left edge of the clause in (121), by contrast, underscores the absence of an I break there. This, together with the evidence from co-promotion for the presence of some kind of higher edge at CP, indicates that the edge in question is the edge of a P-phrase.

I leave some further arguments for a P edge at CP, having to do with introducer promotion and word order with respect to PCs, until the next chapter (see 5.5). For now, I
conclude, based on the evidence from co-promotion and intonation in small clauses, that CP is among those syntactic phrases that are consistently aligned to P-phrases.

4.6.4 An account of phonological phrase determination

The case studies of introducers and prepositions have motivated, besides the word-level analysis, a model of P-phrasing with significant effects on function word parsing. Here, I adapt this model into an account of P-phrase construction. I don’t attempt here to offer a full theory of P-phrasing, but to refine the existing principles of Prosodic Clitic Theory to the extent necessary to account for the parsing differences that are observed across the traditional proclitics.

The main reason for which I posited P edges at the left edges of various syntactic phrases was to account for proclisis failure. For example, a P edge at VP blocks regular complementizer proclisis, but is bypassed by V-to-C raising (see 4.5.5). P edges at NP and PP block i, ni proclisis, but are overcome by focus realization (4.5.7).

With prepositions, by contrast, no P edge blocks proclisis to a following noun, which I attributed to a grouping effect whereby PP, when present, shares a P-phrase with its NP complement. Thus, assuming the same pattern of P-phrasing across dialects, the model admits the possibility of grammars where prepositions are regularly proclitic, as in Piva-Drobnjak, but rules out regular proclisis of conjunctions and complementizers.

Last, complementizers’ failure to encliticize to preceding material, as well as the intonation of small embedded clauses, indicate that CP too is regularly left-aligned to P-phrase (4.6.3).
I summarize here the evidence for the present P-phrasing model, indicating the sections of this chapter where the relevant arguments are presented:

(124) Evidence for phonological phrasing

left P edge at evidence

<table>
<thead>
<tr>
<th>Phrase Type</th>
<th>Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>CP</td>
<td>complementizer enclisis failure, intonation (4.6.3)</td>
</tr>
<tr>
<td>VP</td>
<td>complementizer proclisis failure (4.5.5)</td>
</tr>
<tr>
<td>NP or PP</td>
<td>preposition proclisis (4.4.6), conjunction proclisis failure (4.5.7)</td>
</tr>
</tbody>
</table>

It seems likely that adjective phrases, too, are left-aligned to P-phrase. Potential evidence for such an edge might come from failure of regular preposition proclisis to following adjectives, or from failure of constituent-negating *ne* to procliticize to an AP complement. However, since the data currently available to me are scarce and ambiguous on this point, I don’t pursue this question further here.

The findings regarding P-phrasing, then, are that CP, VP, PP, and NP are all typically P-determining. The claim that VP and NP determine P-phrases isn’t problematic, and is entirely expected according to the assumption that P-phrases correspond to lexical maximal projections (see 1.3.4).

On the other hand, the inclusion of two functional projections, CP and PP, in the set of P-determining phrases doesn’t respect the Lexical Category Condition, which holds that prosodic constituents are aligned only to lexical categories. This is doubly so for PP, which is aligned to P-phrase *instead* of its lexical subordinate NP.

Responding to this concern, I showed that, while *i, ni* proclisis to PP is irregular or unattested in all dialects, some dialects exhibit regular *i, ni* proclisis to pronouns (4.5.7). I suggested that the important difference is that PP determines a P-phrase because
it’s an extended projection of the lexical head N°, whereas pronominals are thoroughly functional, and therefore never determine P-phrases.

Here I further develop this idea, that P-phrases correspond not to maximal projections of lexical heads, but to their extended projections. This allows us to account not only for why PP determines a P-phrase, as an extended projection of N°, but also for why CP too is P-determining, because it’s an extended projection of V°.

On the other hand, this raises a number of analytical issues. For one, how shall we define extended projection? For another, why do NP and PP behave as a single extended projection in this respect, co-determining one P-phrase, while VP and CP each determine their own P-phrase?

Under Grimshaw’s (1991, 2000, 2005) theory of extended projection, a lexical head and its maximal or perfect projection (e.g. N°, NP) form an extended projection with one or more superordinate functional projections (e.g. PP), if they’re connected by continuous domination (PP > NP > N°), and share categorial features.

This theory is based, first, on a broad definition of projection:

(125) A definition of projection (Grimshaw 2005)
   X is a head of YP, and YP is a projection of X, iff:
   a. YP dominates X,
   b. the categorial features of YP and X are consistent,
   c. there is no inconsistency in the categorial features of all nodes intervening between X and Y (where a node N intervenes between X and YP if YP dominates X and N, N dominates X, and N does not dominate YP).

Based on this definition, a head’s extended projection is simply its largest projection.
More specifically, the nodes \((N^\circ, DP, PP)\) form an extended projection because the heads \((N^\circ, D^\circ, P^\circ)\) share ‘nominal’ features. In parallel fashion, \((V, IP, CP)\) are an extended projection because \((V^\circ, I^\circ, C^\circ)\) share ‘verbal’ features. Thus, an extended projection comprises a lexical head and a shell of like-category phrases.

By extended projection, Grimshaw argues, a lexical head endows its shells with properties relevant for selection by, or agreement with, higher heads. For example, a V head can endow its dominating CP with mood features selected by a higher, CP-taking verb. Likewise, features of N can percolate to its dominating DP or PP, where they enter into local agreement relations with nearby V or I heads. In other words, an extended projection combines the properties of its like-category heads.

Similarly, I propose that a lexical head endows its extended projection with lexicalness, at least as far as interface constraints are concerned. That is, I propose to revise the Grounding Hypothesis to match P-phrase not to the lexical maximal projection \((\text{lexP})\), but to the \textit{lexical extended projection} \((\text{lex}^{\text{ext}})\). The correspondences relevant for the analysis of BCS clitic prosody then become the following (compare 1.3.4):

\[
\begin{align*}
\text{comma phrase (CmmP)} & \rightarrow \text{intonational phrase} \\
\text{lexical extended projection (lex}^{\text{ext}}) & \rightarrow \text{phonological phrase} \\
\text{lexical word (lex)} & \rightarrow \text{prosodic word}
\end{align*}
\]

This revision respects the spirit of the Lexical Category Condition, and accounts for the prosodic grouping of function words with their complements.

Having revised the set of Prosodic Clitic Theoretic interface correspondences, we may replace the ad hoc ALIGN-P (see 4.5.7) with a more schematic constraint:
(127) ALIGN(lex$^{ext}$, L, P, L): align the left edge of the extended projection of every lexical head to the left edge of a phonological phrase.

Although I predict the existence of a corresponding right-aligning constraint, it’s either inactive in the grammar, or its effects aren’t apparent in the data. As far as the data show, P-phrases’ left edges are constructed by reference to syntactic structure, while their right edges are determined entirely by principles of prosodic well-formedness. In other words, BCS is a left-aligning language with respect to P-phrase determination.\footnote{Another left-aligning language is Japanese (Selkirk and Tateishi 1988). Some right-aligning languages are Xiamen (Chen 1987), Tohono O’odham (Hale and Selkirk 1987), and Chichewa (Kanerva 1989).}

This gets the desired result, which is that NP determines a left P edge only if it’s the largest projection of N°. If N° projects to PP, then PP, not NP, determines a P edge. In other words, L(lex$^{ext}$,P) groups prepositions with their NP complements.

As for conjunctions, I deduce that these are segregated from their conjuncts by P edges because they don’t fall in their conjuncts’ extended projections. However, it isn’t obvious that this should be the case. One might suppose, since conjoined NPs substitute for lone NPs, that the features of conjoined NPs percolate to CnjP. Nevertheless, the prosodification of conjoined clauses, too, will indicate that conjunctions are prosodically segregated from their complements (see 5.5.2, 5.5.4).

On the other hand, the claim that both VP and CP determine P-phrases seems to contradict the P-phrasing model predicted by L(lex$^{ext}$,P). If V projects to CP, then its extended projection should determine a P edge at CP, or if CP isn’t projected, then at IP. We expect a P edge at VP only if neither IP nor CP is projected.
I see several possible solutions to this problem. One possibility is that there is, in fact, no P edge at VP. In this case, however, other explanations would be required for the failure of complementizer proclisis to verbs and pronouns (4.5.5), as well as for some other phenomena to be discussed in chapter 5, which include the absence of peninitial clitic proclisis to elements in VP, and the different frequencies of complementizer and preposition promotion (see 5.2.6, 5.3.2, 5.5.3).

Assuming, then, that I’m right in locating a P edge at VP, another possibility is that the theory of projection should be revised to define both VP and CP as privileged projections of V. Perhaps VP and CP, in contrast to NP, are privileged as complete projections, in the sense that they encompass the role and feature grids of V° and I°, respectively, which are saturated by clausal arguments. I’ll leave this speculation here, however, as it would take us outside the scope of the present study.

A third possibility is that VP is a phase—that is, prosodified independently before higher structure is added, in some version of Multiple Spell-out (Epstein et al. 1998, Uriagereka 1999, Chomsky 2000, 2001). Then, even though VP may not end up being the largest projection of V°, it’s necessarily closed off by a P-phrase. As this seems to be the simplest solution, it’s the one that I’ll adopt.62, 63

A stronger version of the phase approach might identify all boundaries on function word parsing as phase edges. However, one perhaps undesirable consequence of


63 If the P edge at VP is determined by phase, and therefore firmer than other P edges, this might explain why complementizers in Piva-Drobnjak, under focus, undergo promotion rather than proclisis. That is, the firm P edge at VP absolutely rules out proclisis across it. However, this too is speculation, without a more precise characterization of the conditions on realizing focus on function words.
such an approach would be that all constituents identified as P-determining—that is, CP, VP, and NP or PP—must then be phases. Second, I’ve argued that *i, ni* proclisis results when a constraint that regularly puts a P edge at NP or PP is overruled by principles of focus realization. It seems less plausible that focus overcomes boundaries induced by phase, as this would significantly weaken the power of phases.

I therefore conclude in favor of a mixed P-phrasing and phase-based approach to constraining function word parsing. P-phrases are regularly left-aligned to the extended projections of lexical heads, including CP, PP, and NP, but this pattern can be overruled, in some dialects, by focus realization. In addition, the left edge of the greater VP is regularly aligned to P-phrase because VP is prosodified as a phase.

It may be that this account points to a theoretical redundancy in the explanatory power of phases and prosodic structures, which should be resolved by simplifying or eliminating one of these notions. For the present, however, I’ll leave that question to other investigations with broader scope, and continue here to focus on testing and developing the limits of the theoretical framework as applied to BCS.

Before concluding the discussion of P-phrasing, I’ll compare the present account of P-phrase determination to a couple of others. Of particular importance to function word parsing, as we’ve seen, is P-phrases’ role in restricting clisis by grouping some function words with their complements, and segregating others. I’ll therefore highlight the ways in which different accounts approach function word grouping.

As I mentioned earlier, Nespor and Vogel (1986) propose that clitics are grouped with their hosts not by p-word or P-phrase, as in this account, but by the *clitic group*, a
prosodic constituent conceived specifically for that purpose (see 1.3.3, 4.2.4). This is the algorithm for clitic group formation in that account:

(128) Clitic group formation (Nespor and Vogel 1986:154)

I. *C domain*: The domain of [clitic group] C consists of a [prosodic word] ω containing an independent (i.e. nonclitic) word plus any adjacent ωs containing
   a. a DCL [directional clitic, i.e. specified proclitic or enclitic], or
   b. a CL [clitic] such that there is no possible host with which it shares more category memberships.

II. *C construction*: Join into an n-ary branching C all ωs included in a string delimited by the definition of the domain of C.

This algorithm provides a couple of ways of grouping clitics with non-clitics. One is to specify a function word as a proclitic or enclitic (a), and the other is for a clitic to share ‘category memberships’ with a host (b). The former is simple stipulation, a case of the subcategorization approach that I’ve argued at length against (see 1.3.2, 4.2.4, 4.7). The latter is similar in spirit to the extended projection approach, but the present account achieves greater generality, ultimately ascribing grouping to a correspondence between P-phrases and extended lexical projections, rather than to a clitic group algorithm.

Zec and Inkelas (1990), in a study of BCS, English, and Hausa, propose the following P-phrasing algorithm specifically for English, though they assume something like it for BCS as well:
(129) Phonological phrase formation (Zec and Inkelas 1990:377)

(i) Branching Clause: From the bottom up, branching nodes are mapped into phonological phrases.

(ii) Anti-Straddling Clause: No two phonological words on opposite sides of an XP boundary may be phrased together to the exclusion of any material in either XP.

With its Branching Clause, the Zec and Inkelas algorithm captures the observation that P-phrases group function words with their complements. On the other hand, it doesn’t distinguish between conjunctions and prepositions, grouping both alike with a following NP, because both form branching nodes with their complements.

Addressing such differences among function words, Zec (2005) proposes to distinguish among proclitic and non-proclitic function words by assigning proclitics underlying subcategorization templates (see 1.3.2). I maintain that the present account of grouping in terms of general constraints on P-phrases is to be preferred.

4.6.5 Summary

In 4.6, I offered the outlines of an interface constraint account of P-phrase determination. The empirical evidence for the pattern of P-phrasing in the clause came from the case studies of preposition and introducer parsing, and was based on the premise that P edges serve as barriers to clisis. For example, P edges at VP, PP, and NP group prepositions with their complements, but block proclisis of complementizers and conjunctions to their complements. Evidence for a P edge at CP came from some subtler patterns in the parsing of complementizers (4.6.3).

Since this model doesn’t follow from the framework outlined in chapter 1, I proposed a revision to the Grounding Hypothesis. Striving to maintain the Lexical
Category Condition, I proposed that interface constraints relate P-phrases to the extended projections of lexical heads, rather than to their maximal projections. In addition, I offered a phase-based explanation for the P edge at VP, which is otherwise unexpected when V° also projects to IP or CP (4.6.4).

In the following conclusion to the chapter, I consider these findings within the larger empirical and theoretical goals of the dissertation.

4.7 Conclusions

In this chapter, I moved from the study of word-internal prosody and accent to the broader study of the prosodic clitic system, taking as case studies four categories that are traditionally considered proclitic. I asked, first, how these categories are prosodified, and second, how this is determined by the grammar. The results are a more accurate model of function word parsing across dialects than in previous work, and a unified account of word, phrase, and clitic prosody by general interface and prosodic constraints.

Based on several kinds of evidence for prosodic representations, I concluded that negation, prepositions, complementizers, and conjunctions are attested in three different parses across dialects—as proclitics, free clitics, or prosodic words (promoted). Setting aside, for the moment, some exceptional patterns, this table summarizes the incidences of these parses according to function word category and dialect:
(130) The parsing of some traditional proclitics in three varieties

<table>
<thead>
<tr>
<th></th>
<th>Piva-Drobnjak</th>
<th>received</th>
<th>modern</th>
</tr>
</thead>
<tbody>
<tr>
<td>negator <em>ne</em></td>
<td>proclitic</td>
<td>proclitic</td>
<td>proclitic</td>
</tr>
<tr>
<td>prepositions</td>
<td>proclitic</td>
<td>free ~ proclitic</td>
<td>free ~ promoted</td>
</tr>
<tr>
<td>conjunctions <em>i, ni</em></td>
<td>free</td>
<td>free</td>
<td>free</td>
</tr>
<tr>
<td>clause introducers</td>
<td>free</td>
<td>free ~ promoted</td>
<td>free ~ promoted</td>
</tr>
</tbody>
</table>

This conveys the variety of default parsing patterns—that is, those that obtain regularly in unexceptional syntactic contexts. Despite this variety, I showed that parsing differences across categories, contexts, and dialects are determined by a fairly general system of constraints. Dialect differences represent different grammars built from these constraints, while prosodic differences among syntactic categories result from how their different syntactic configurations are interpreted by particular grammars.

Although most of the patterns in (130) are determined by the grammar in a regular fashion, one pattern isn’t so regular, but is so frequent that it warrants inclusion in the table. This is preposition proclisis in the received standard, which, I claim, is motivated by special faithfulness to a conservative stratum of the lexicon (4.4.2, 4.4.6).

Some other patterns are phonologically regular, but result from exceptional syntax. One is promotion by independence, where a function word necessarily promotes because it’s an independent utterance (4.3.4). Similarly exceptional are promotion and proclisis by focus, which are dialect-particular strategies for realizing focus prominence on a function word (4.3.5, 4.5.3, 4.5.7).

Yet another exceptional pattern is complementizer proclisis, which results from V-to-C adjunction. The adjoined complementizer then procliticizes in the same way as *ne*, which regularly adjoins to its verb (4.3.3, 4.5.5).
These results reinforce the central claim that prosodic configurations reflect syntactic configurations, not arbitrary specifications. \textit{Ne} is consistently proclitic because it’s regularly adjoined to the verb, while syntactically free prepositions and introducers are more likely to be phonologically free clitics. Conversely, when complementizers end up in similar configurations to \textit{ne}, they get the same parse as \textit{ne}.

These results weaken the case for the subcategorization approach. The fact that individual words can vary in their parsing undermines the explanatory power of static clitic templates. Further, a system of arbitrary templates predicts neither the general restriction to only three parses, nor the correlation between parsing and context.

Besides furthering our understanding of prosodic clisis, this investigation has also contributed to our understanding of P-phrases, regarding both their surface effects on function word parsing, and their determination by the interface grammar. A model of P-phrasing proved crucial in order to account for parsing differences across function word categories that weren’t explained by word-parsing constraints alone. Generally speaking, P-phrase edges block proclisis and enclisis, and encourage promotion.

More specifically, I proposed that P-phrases are regularly left-aligned to CP, VP, and PP when it’s present, otherwise NP. Thus, P-phrasing groups prepositions with their NPs, but segregates other categories from their complements, except when bypassed by verb movement, or when overcome by principles of focus realization. With \textit{ne}, proclisis by V-to-Neg movement is regular (except in contexts of constituent negation), whereas complementizer and conjunction proclisis are restricted to contexts of V-to-C movement and conjunction-centered focus prominence, respectively.
Regarding interface conditions on P-phrasing, I proposed an elaboration of the Grounding Hypothesis, claiming that P-phrases correspond to extended projections of lexical heads, as opposed to their maximal projections. This accounts for why some P-phrases correspond to functional projections, notably PP and CP (4.6.4).

However, the full extent of the influence of P-phrasing on clisis becomes apparent only from the analysis of the entire clitic system—comprising not only the traditional proclitics, but the peninitial clitics too, which are the subject of chapter 5.
5.1 Introduction

Whereas the last chapter was an exploration and reanalysis of the evidence for proclisis, here I take up the phonological representations of the traditional enclitics. These include elements of at least two categories—pronominals and verbal auxiliaries—which, because of their similar prosody and word order, are generally treated as a class.

I’ll refer to these by the term *peninitial clitics* (PCs), in place of the more usual *second-position clitics*. One reason for this is that the PCs aren’t rigidly second, but have somewhat more flexible word order that’s better described as ‘almost initial’. The term *peninitial* is also neutral regarding whether there’s some syntactically significant second position, which is a point of contention among accounts of PC placement.

The traditional classification of PCs as enclitics is based on two main claims. First, that PCs form prosodic words, or accentual units of some kind, with preceding words. Second, that their peninitial word order results from a requirement that they be enclitic on, and therefore follow, some word in their clause (see 4.2, 5.2).

I’ll consider first whether the more direct evidence from word-level phonology supports the enclitic analysis. In contrast to my conclusions in earlier work (Werle 2004), I find that while PCs are undoubtedly enclitic in some contexts and dialects, they’re more typically free clitics parsed directly by phonological phrase. From this, it follows that peninitial placement is motivated by something other than enclisis.
I then proceed to the less direct evidence from phrase-level phenomena, especially word order. I discuss alternations in PC placement with respect to introducers, to clause edges, and to various clause-initial constituents, arguing that these patterns not only support a free clitic analysis, but show, more specifically, that PCs are avoided at the left and right edges of P-phrases. I conclude that the simplest characterization of the various options in PC placement is that PCs are peninitial in P-phrase.

The model of P-phrasing from chapter 4 is therefore a necessary component of the analysis. Building on that model, and based on alternations in PC placement, I propose that not only CPs, but all clauses, finite and non-finite, are left-aligned to P-phrase.

Another aspect of the discussion that’s related, but somewhat orthogonal, to PC prosody is PC syntax, and the nature of the interface that allows prosody to affect PC placement. Although PC placement plays an important part in the argumentation, providing crucial evidence for prosodic representations, I say as little as possible about PC syntax and the interface, relying rather on established models.

This chapter is organized as follows. In 5.2, I provide some background on the PCs, including a review of approaches to accounting for their syntax, prosody, and placement. Proceeding then to the evidence for PC prosody, I consider arguments first from word-level phenomena (5.3), and then from phrase-level phenomena (5.4).

Then in 5.5, I return to the analysis of phonological phrasing, citing additional evidence from PC placement, and comparing it to that from barriers to clisis. Last, I present my conclusions regarding PC prosody in 5.6.
5.2 Issues in peninitial clisis

5.2.1 Introduction

In this background section, I provide some context for understanding some of the issues arising from the analysis of peninitial clitic behavior. Although in this dissertation I’m mainly interested in clitics’ prosodic properties, the investigation of PC prosody inevitably leads to the connection between their prosody and word order, because their word order provides one of the strongest arguments that they’re enclitic.

Whereas with other clitics, I asked to what extent their prosody reflects their syntax, patterns in PC placement raise the opposite question too, which is whether the PCs’ prosody influences their word order. This, in addition to the empirical question of what the PCs’ prosodic representations are in the first place.

In the following sections I first offer overviews of PC placement and ordering (5.2.2), and of the PC inventory (5.2.3). Those who are most interested in theoretical issues may therefore wish to proceed directly to later sections.

I then summarize some of the formal accounts of PC placement, and their points of contention (5.2.4, 5.2.5). Last, I’ll adopt what I take to be some well established assumptions concerning the syntactic representation of the PCs (5.2.6), as a basis for an interface account of their prosody.

5.2.2 PC placement and ordering

The first detailed and accurate description of PC placement in the Generative Linguistic literature is that of Browne (1975/2004), who identifies most of the patterns
and issues still discussed today. Radanović-Kocić (1988) adds considerably to this. A concise and up-to-date description is provided by Franks and King (2000).

Although PCs are found in both main and embedded clauses, their placement in main clauses is more flexible. In main clauses, but can be found after the first word of the clause (a), after the first syntactic phrase (b), or later (c):

(1)  Second-word, second-daughter, and late placement

\begin{enumerate}
\item 2W: \text{[Svi su se naši snovi ] srušili.} \quad g: 1.3/3, ones: 4/7
\item 2D: \text{[Svi naši snovi ] su se srušili.} \quad g: 1.0/3, ones: 7/7
\item late: \text{[Svi naši snovi } srušili su se.} \quad g: 1.9/3, ones: 4/7
\end{enumerate}

All our dreams were dashed. (Q11)

The numbers at the right give a rough grammaticality score \((g)\) for each wording—one being the best—as well as how many speakers judged it a one \((ones)\) (see 1.4.2). PCs are never initial in their clause.\(^2\),\(^3\)

After Halpern (1992), the alternatives in (1)a and (1)b are called second-word (2W) and second-daughter (2D) placement, respectively. I’ll call the third possibility late placement. As these grammaticality scores indicate, the modern standards generally favor 2D placement in short sentences. Late placement is frequent in longer sentences (see 5.5), while 2W is characteristic of particular styles and dialects (see 5.2.5).\(^4\)

\(^1\) Browne (1975:105): ‘every presentation of the rules [of PC placement] so far in SC grammars and textbooks has been incomplete or even wrong. This paper is an attempt to fill the gap.’ Browne (1974) is less complete, focusing on the problem of deriving PC and full forms from the same underlying elements. Browne (1968) mentions peninitial elision, but only as a diagnostic for the left edge of the clause.

\(^2\) Another wording, \text{Svi naši su se snovi srušili}, where PCs follow a non-constituent, was judged less good, but not impossible. It received a score of 2.2, and ones from two of seven consultants, both from Zagreb.

\(^3\) In disallowing initial PCs, BCS differs from some other Slavic languages, such as Slovenian and Czech, where PCs can be clause-initial in some circumstances. See Franks and King (2000:41-42, 113-114).

\(^4\) Schütze (1994) refers to 2W and 2D placement as ‘first word’ (1W) and ‘first constituent’ (1C), respectively. Bošković (2001a) calls them ‘first word’ (1W) and ‘first phrase’ (1P).
Since I make frequent reference to alternative PC placements, I’ll often combine examples like those in (1) using a slash notation, which indicates that the PCs in slashes can occur in any, but only one, of the non-starred locations:

(2) /*Su se/ svi /su se/ naši snovi /su se/ srušili /su se/.

Also, since some PCs are easily confused with non-peninitial elements (see 5.2.3), I’ll adopt the practice, in this chapter only, of presenting all PCs in italics.

Placement in embedded clauses is more regular than in main clauses. Embedded PCs follow an initial complementizer (a), relativizer (b), or other introducer (c):

(3) PCs in embedded clauses
   a. Znam [da je teško čoveku da prizna [da je pogrešio]] // I know [C AUX hard person C acknowledges [C AUX was wrong]] // I know that it’s hard for a person to acknowledge that he’s wrong // (Ogledalo)
   b. … u Bratislavu, [gde ga čeka ruski predsednik Vladimir Putin]. … to Bratislava [where him waits Russian president Vladimir Putin] … to Bratislava, where Russian president Vladimir Putin awaits him. (Politika)
   c. // dok su u pozadini prikazivane crno-bijele fotografije. // while AUX in background shown black-and-white photographs // while in the background were shown black-and-white photographs. (Hina)

In descriptive terms, placement in embedded clauses is consistently 2W.5

---

5 Percus (1993) and Schütze (1994) discuss examples where PCs in embedded clauses don’t immediately follow a complementizer. For example:

(i) Ja mislim [da [u ovoj sobi] {Markova žena} je sretna].
   I think [C [in this room] [Marko’s wife] AUX happy]
   I think that in this room Marko’s wife is happy. (Percus 1993:17)

As far as I can determine, such examples are virtually unattested in natural contexts. It seems likely that this is a marginal case of late placement after an intrusive parenthetical, or embedded topic (see 5.4.5).
Following other work on PC placement, I’ll use the term *host* for the word or phrase that directly precedes PCs in 2W and 2D word orders. However, I intend this only as a descriptive term, and not as presupposing that the word or phrase in question serves as a prosodic host, in the sense of determining a prosodic word within which PCs are enclitic. In fact, I’ll conclude that only some PC hosts ever serve as hosts for enclisis.

In modern colloquial BCS, PCs are found almost exclusively in finite clauses, but in formal and archaic styles one also encounters PCs in infinitival clauses and noun phrases. For the present, I’ll restrict the discussion to placement in finite clauses, but will look in 5.5 at placement in non-finite contexts, in pursuit of a precise characterization of constraints on PC placement.

Whereas the term *placement* generally refers to the word order of the PCs with respect to other elements in their clause, the term *ordering* is reserved for their relative orders within PC sequences, or ‘clusters’. In clauses with two or more PCs, the PCs form an uninterrupted cluster, rigidly ordered according to the following template:

\[
\text{li} \rightarrow \text{AUX} \rightarrow \text{ETH} \rightarrow \text{DAT} \rightarrow \text{ACC} \rightarrow \text{GEN} \rightarrow \text{se} \rightarrow \text{je}
\]

This conveys, for example, that interrogative *li* precedes any other PCs in its clause, that the third-person-singular auxiliary *je* is ordered differently from other auxiliaries (*AUX*), and that the ordering of pronominal PCs is determined by their case. The full PC inventory is summarized in 5.2.3.

The following sentences exemplify most of these relative orders:
(5) PC cluster orders

a. Da li su naše vlasti, do sada, nešto uradile?
   C Q AUX our authorities to now something did
   Have our authorities done anything so far? (Jutarnje)

b. Komšije su nam ga vratile, hvala Bogu.
   neighbors AUX US.DAT him.ACC returned thanks God
   The neighbors returned him to us, thank God. (SN)

c. Nadam se da će mi se želja ispuniti neki drugi put.
   hope RFL C FUT me.DAT RFL wish fulfill some other time
   I hope that my wish will be fulfilled some other time. (Jutarnje)

d. Otad ga je ratificiralo 140 zemalja i EU //
   since then it.ACC AUX ratified 140 countries and EU //
   Since then, it’s been ratified by 140 countries and the EU // (Vjesnik)

Some combinations of PCs undergo alternations, or are forbidden, though this can vary by dialect. For example, in most modern standards the feminine accusative PC je is pronounced ju only when it cooccurs with the auxiliary je:

(6) Otkrio ju je švicarski astronom Fritz Zwicky //
   discovered it AUX Swiss astronomer Fritz Zwicky //
   The Swiss astronomer Fritz Zwicky discovered it // (Dnevnik)

(This isn’t to be confused with ga, the masculine and neuter accusative PC. See 5.2.3.)

Other combinations are impossible in some varieties, though they’re normal in others. These include combinations of accusative with genitive PCs (a), of the reflexive se with auxiliary je (b), and of se with accusative PCs (no examples).6,7

(7) Some restricted PC combinations

a. Zoran me ih je lišio.
   Zoran me.ACC them.Gen AUX deprived
   Zoran deprived me of them. (Franks and King 2000:29)

---

6 In dialects where se je combinations are impossible, these are reduced to se alone.
7 Progovac (2005) reports that Serbian forbids combining accusative PCs either with genitives, or with se.
Chapter 5 – Peninitial clitic prosody

b. // odnosno pokazalo se je da nije bilo oboljenja…
   // that is turned out RFL AUX C not+ AUX was disease …
   // that is, it turned out that there wasn’t any disease… (Jutarnje)

A special use of dative PCs is the ethical dative construction, in which a first- or second-person dative pronominal doesn’t represent a grammatical object, but expresses closeness between speaker and hearer. Ethical datives precede other dative PCs:

(8) Ja sam ti mu vjerovala, i on mi je lagao!
I AUX youETH him.DAT trusted and he me AUX lied
I trusted him, and he lied to me! (TH)

I’ll return to PC placement and ordering throughout this chapter. Alternations in the placement of PCs within the clause are of central importance in discovering their prosodic representations, by the premise that their placement optimizes their prosody. The ordering of PCs in clitic clusters doesn’t figure as prominently in the analysis, but helps to establish the details of the PCs’ syntactic representations.

5.2.3 The PC inventory

Also relevant to the analysis of the PCs is their morphology, particularly their alternations with morphologically related, non-peninitial ‘full’ forms. The following overview will serve, first, as a reference to the PC inventory. Second, I’ll address the significance of full-peninitial alternations for the analysis of peninitial forms.

I use full here in a purely descriptive sense, to refer to non-peninitial words that have peninitial counterparts. We’ll see that the different surface properties of full and peninitial forms provide useful clues to their formal representations. On the other hand,
the question of what, if anything, distinguishes full and peninitial counterparts at underlying levels is a further matter that won’t be resolved here.

The PCs include verbal auxiliaries, non-subject pronominals, the reflexive elements *se* and *si* (sometimes considered pronominals), and the question marker *li*. Of these, all but *li* form inflected paradigms with corresponding full forms.

I’ll begin with the auxiliary system. There are three peninitial auxiliaries: plain, conditional, and future. The plain auxiliary is used as a copula in the present tense, and together with a participial main verb to form the simple past. It takes these forms:

(9) The plain auxiliary

<table>
<thead>
<tr>
<th></th>
<th>full</th>
<th>negated</th>
<th>peninitial</th>
<th>full</th>
<th>negated</th>
<th>peninitial</th>
</tr>
</thead>
<tbody>
<tr>
<td>1SG</td>
<td>jēsam</td>
<td>nīsam</td>
<td><em>sam</em></td>
<td>1PL</td>
<td>jēsмо</td>
<td>nīsmо</td>
</tr>
<tr>
<td>2SG</td>
<td>jēsi</td>
<td>nīsi</td>
<td><em>si</em></td>
<td>2PL</td>
<td>jēste</td>
<td>nīste</td>
</tr>
<tr>
<td>3SG</td>
<td>jēst(e)</td>
<td>nije</td>
<td><em>je</em></td>
<td>3PL</td>
<td>jēsu</td>
<td>nīsu</td>
</tr>
</tbody>
</table>

This illustrates that auxiliaries, like full verbs, inflect for the person and number of their subject. But unlike most verbs, auxiliaries have irregular negative forms with affixal negation (the verb *imati* ‘have’ is negated irregularly; see 4.3.3). Further, while affirmative auxiliaries can be full or peninitial, negated auxiliaries are only full.

This paradigm also clarifies the unique behavior of *je*, which occurs alone as a peninitial auxiliary, but serves also as a stem for full forms. *Je* is also exceptional among PCs in its cluster-internal ordering, and in serving as a host for *li*. For these reasons, some scholars characterize *je* as an expletive (see below and 5.2.6).

These are the forms of the future auxiliary:
(10) The future auxiliary

<table>
<thead>
<tr>
<th></th>
<th>full</th>
<th>negated</th>
<th>peninitial</th>
<th></th>
<th>full</th>
<th>negated</th>
<th>peninitial</th>
</tr>
</thead>
<tbody>
<tr>
<td>1SG</td>
<td>hócú</td>
<td>néču</td>
<td>ĉu</td>
<td>1PL</td>
<td>hócemo</td>
<td>něčemo</td>
<td>ĉemo</td>
</tr>
<tr>
<td>2SG</td>
<td>hóčeš</td>
<td>něčeš</td>
<td>ĉeš</td>
<td>2PL</td>
<td>hóčete</td>
<td>něčete</td>
<td>ĉete</td>
</tr>
<tr>
<td>3SG</td>
<td>hóče</td>
<td>něče</td>
<td>ĉe</td>
<td>3PL</td>
<td>hóčě</td>
<td>něčě</td>
<td>ĉě</td>
</tr>
</tbody>
</table>

While the peninitial forms of the future auxiliary serve only to form the future tense, its full forms can also mean ‘want’.

The conditional auxiliary, in contrast to the others, has morphologically identical full and peninitial forms, which differ only in their distribution and accentuation:

(11) The conditional auxiliary

<table>
<thead>
<tr>
<th></th>
<th>full</th>
<th>negated</th>
<th>peninitial</th>
<th></th>
<th>full</th>
<th>negated</th>
<th>peninitial</th>
</tr>
</thead>
<tbody>
<tr>
<td>1SG</td>
<td>bȉh</td>
<td>nȅ bȉh</td>
<td>bȉh</td>
<td>1PL</td>
<td>bȉsmo</td>
<td>nȅ bȉsmo</td>
<td>bȉsmo</td>
</tr>
<tr>
<td>2SG</td>
<td>bȉ</td>
<td>nȅ bȉ</td>
<td>bȉ</td>
<td>2PL</td>
<td>bȉste</td>
<td>nȅ bȉste</td>
<td>bȉste</td>
</tr>
<tr>
<td>3SG</td>
<td>bȉ</td>
<td>nȅ bȉ</td>
<td>bȉ</td>
<td>3PL</td>
<td>bȉ</td>
<td>nȅ bȉ</td>
<td>bȉ</td>
</tr>
</tbody>
</table>

This paradigm also shows that, again unlike the plain and future auxiliaries, the negative forms of the conditional are formed regularly with ne.

As for pronominal PCs, these also alternate with full forms that have different distribution and morphology. But whereas full pronouns inflect for five cases, pronominal PCs are attested only in only three—accusative, genitive, and dative.

These are the pronominal PCs and their full counterparts:

---

8 Sources disagree on accent and length on future forms, probably reflecting conservative and innovative pronunciations. Benson has něčemo, něčete, which I take to be conservative, while Browne and Kordić give něčemo, něčete. For ĉe ‘FUT.3p’, Benson and Browne have ĉě, and Kordić ĉě. See 5.3.5.

9 In colloquial registers, the conditional is typically uninflected, all persons and numbers taking the form bi (Browne 1975, Franks and King 2000, Progovac 2005).


11 Full pronouns distinguish the nominative, accusative, genitive, dative, and instrumental cases. Their vocative and locative forms are identical with the nominative and dative, respectively.

---
(12) Pronominal PCs$^{12,13}$

<table>
<thead>
<tr>
<th></th>
<th>accusative, genitive</th>
<th>full</th>
<th>peninitial</th>
<th>full</th>
<th>peninitial</th>
</tr>
</thead>
<tbody>
<tr>
<td>1SG</td>
<td>mène</td>
<td>me</td>
<td>1PL</td>
<td>näs</td>
<td>nas</td>
</tr>
<tr>
<td>2SG</td>
<td>tèbe</td>
<td>te</td>
<td>2PL</td>
<td>väs</td>
<td>vas</td>
</tr>
<tr>
<td>3SG.MASC/NEUT</td>
<td>njèga</td>
<td>ga</td>
<td>3PL</td>
<td>njih</td>
<td>ih</td>
</tr>
<tr>
<td>3SG.FEM</td>
<td>njù, njè</td>
<td>je, ju</td>
<td>RFL</td>
<td>sèbe</td>
<td>se</td>
</tr>
</tbody>
</table>

dative
|       | mèni                 | mi   | 1PL        | nàma | nam        |
| 2SG   | tèbi                 | ti   | 2PL        | vàma | vam        |
| 3SG.MASC/NEUT | njèmu    | mu   | 3PL        | njima | im        |
| 3SG.FEM | njój, joj    | RFL | sèbi         | se, si |

I include here also the reflexives se, si, although se is sometimes analyzed as other than a pronominal (see 5.2.6, Radanović-Kocić 1988, Progovac 2005).$^{14}$

Apart from auxiliaries, pronominals, and the reflexive, there’s one other PC: li. It forms both main and embedded questions, generally following the complementizer *da* (a), or, somewhat less often in spoken BSC, a finite verb or full auxiliary (b):

(13) *Li* questions

a. Da *li* je Srbija država?
   c  Q AUX Serbia country
   Is Serbia a country? (Ogledalo)

---

$^{12}$ The forms *mene, meni, tebe, tebi, sebe, sebi, njega, njemu* have short rising accent in Vukovian, but are described today with falling accent (Kordić). This is supported by consultant OT, who has accent transfer in e.g. 'u mene, 'na meni, which is expected only with hosts that otherwise bear falling accent (see 2.3). Vuković reports the falling versions as typical for Piva, but rising versions for Drobnjak (1940:80).

$^{13}$ Full pronouns distinguish accusative and genitive only in strong njù, njè ‘her (ACC, GEN)’. The PCs *ju, je* express either case; *je* is the usual form, but becomes *ju* before the auxiliary *je*. See 5.2.2, 5.2.3.

$^{14}$ Dative *si* is found only in some dialects. In other varieties, *se* serves all peninitial reflexive functions. When *si* clusters with pronominal PCs, it’s ordered like a dative pronoun:

(i) Da *li* ste *si* ga juče(r) kupili?
   c  Q AUX RFL.DAT it.ACC yesterday bought
   Did you buy it/one for yourself yesterday? (Franks and King 2000:29)
b. Ima \textit{li nam} spasa?
   
   there is \textit{us} salvation
   
   Is there any hope for us? (Ogledalo)

\textit{Li} is unique among PCs in standing in a clear syntactic relationship to the word that precedes it, and having no full form. For these and other reasons, \textit{li} is a topic of study in its own right, and I'll say little about it here. For the interface account, it suffices to observe that \textit{li} attracts a host syntactically, and is related to question formation, and is therefore thought to be generated in the C layer of the clause (see 5.2.6).\footnote{For analyses of \textit{li}, see Franks and King (2000:259-267, 349-357) and Bošković (2001a:26-36, 2001b).\footnote{Browne (1974, 1975) characterizes the sequence \textit{da li} as the full form of \textit{li}, while Radanović-Kocić (1988:49-52) argues that \textit{da li} is what it appears to be: the complementizer \textit{da} plus the PC \textit{li}, where \textit{da} serves as a host for \textit{li} in lieu of a finite verb or auxiliary. See also Rivero (1993:571, n5), Vrzić (1996).}}

Although I won't attempt a full account of alternations between full and peninitial forms, I'll say something about how these bear on our present aims. Such alternations are relevant to the analysis of PC prosody mainly for what they reveal concerning the PCs' syntactic representations. Also relevant to the interface constraint approach is how full forms are prosodified, though I’ll offer only a few observations on this.

The various factors affecting full-peninitial alternations are discussed at length by Browne (1975:124-129) and Radanović-Kocić (1988:43-55). The most consistent differences between full and peninitial forms are their distribution and size. First, whereas PCs are peninitial, full auxiliaries and pronouns have the same word order as verbs and noun phrases, respectively. Second, full forms contain either the same or more—never less—phonological material than their peninitial counterparts.

Regarding their distribution, peninitial forms are generally unmarked, while full forms are required in particular contexts. For example, only full forms can bear focus:
(14) Full forms are required in contexts of focus
   a. Svjedok je TEBE okrivio. (*te)
      witness AUX YOU accused
      The witness accused YOU. (Browne 1975:124)
   b. Djeca ne samo da izgledaju umorna, već jesu. (*su)
      children not only C look tired but AUX
      The children don’t just look tired, they are. (Browne 1975:128)

Full auxiliaries can host li in li questions, but peninitial forms can’t:

(15) Only full auxiliaries can host li
   a. Hoće li Marko doći? (*če)
      FUT Q Marko come
      Will Marko come? (Browne 1975:127)
      AUX Q all ready
      Are we all ready? (Browne 1975:127)

Exceptionally, the bare form je—normally peninitial—also forms li questions. 17

Last, full pronouns are required following a preposition or conjunction:

(16) Only full pronouns are complements of prepositions and conjunctions
   a. za njih (*ih) ‘for them’
      bez tebe (*te) ‘without you’
   b. tebi i Milanu (*ti) ‘you and Milan (DAT)’
      ili njoj, ili njemu (*joj, *mu) ‘either her or him (DAT)’

The difference between full and peninitial forms is often seen as fundamentally
phonological, from which follow their other properties (Browne 1975, Radanović-Kocić

17 When serving as a host for li, the third-person-singular plain auxiliary exceptionally takes its peninitial form (je) rather than its full form (jeste, jest), e.g. Je li inspektor neovisan? ‘Is the inspector independent?’ (Dnevnik). Further, Browne (1975:132) reports that in colloquial style, especially in Zagreb, je is used in all contexts, e.g. Je li Milan tu? Je. Mislim da je. ‘Is Milan here? —Yes he is. I think he is.’
1988, Franks and King 2000, Zec 2005). That is, PCs are peninitial because they’re specified as clitics, or in some way phonologically weak.

By contrast, I follow Cardinaletti and Starke (1996, 1999) in characterizing the full-peninitial distinction as fundamentally morphosyntactic. More specifically, PCs have the minimum structure required to express Tense and Agreement features, whereas full forms have additional structure, which can include (i) invisible featureful content, (ii) visible featureful content, and (iii) featureless phonological material.

Because of their structural differences, full and peninitial forms are suited to different contexts, yielding their different distributional and phonological properties. While peninitial forms are suited to the realization of Tense and Agreement heads, full forms are better suited to phrasal contexts—such as the complements of prepositions and conjunctions—and to contexts of prosodic prominence.

One argument for this position is that the third-person pronominal PCs closely resemble adjectival agreement endings (Progovac 2005) (*star ‘old’):

(17) Third-person pronominal PCs resemble adjectival agreement\(^\text{18}\)

<table>
<thead>
<tr>
<th>adjective</th>
<th>PC</th>
<th>adjective</th>
<th>PC</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEN.G.S/M</td>
<td>star-og(a)</td>
<td><em>ga</em></td>
<td>DAT.G.S/M</td>
</tr>
<tr>
<td>GEN.G.S/F</td>
<td>star-e</td>
<td><em>je, ju</em></td>
<td>DAT.G.S/F</td>
</tr>
<tr>
<td>ACC.G.S/F</td>
<td>star-u</td>
<td><em>je, ju</em></td>
<td>DAT.G.S/F</td>
</tr>
<tr>
<td>GEN.P.L</td>
<td>star-ih</td>
<td><em>ih</em></td>
<td>DAT.P.L</td>
</tr>
</tbody>
</table>

\(^{18}\) This paradigm glosses over several contrasts in noun and adjectival declension that are neutralized in PCs. One is between masculine and neuter gender, and another between accusative and genitive case. A third contrast is between the ‘long’ and ‘short’ adjectival declensions. These forms are from the long declension.

In fact, the similarity of adjectival agreement to the pronominal PCs is traceable to the historical development of the long adjectival declension, whereby pronominal forms following inflected adjectives were reanalyzed as ‘long’ endings (Robert Rothstein, p.c.). What is important for the synchronic analysis suggested here, however, is that pronominal PCs, unlike full pronouns, appear to contain little or no phonological material that is not related to Agreement.
This suggests that pronominal PCs represent pure, minimal Agreement—that is, whatever is generated in Object Agreement heads.

Another argument against a fundamentally phonological distinction is that the different stressedness of full and peninitial forms is inconsistent. While PCs are always unstressed, it isn’t the case that full forms are always stressed. The accented full forms in the preceding paradigms represent a received Vukovian pronunciation. Indeed, in the received corpus, full auxiliaries and pronouns are always stressed.

But in other varieties, full pronouns are often clitic. Zec (1997, 2005) reports that monosyllabic full pronouns (e.g. ti ‘you’, nje ‘her’) are unstressed in Serbian, although disyllables promote. In Piva-Drobnjak, pronouns of all sizes are clitic, except following prepositions, or under focus (rečenični akcent ‘sentence accent’, Vuković 1940:85).

Even in Piva-Drobnjak, however, full auxiliaries are almost always stressed.19

In short, the available data indicate that full forms usually promote:

<table>
<thead>
<tr>
<th>(18) Frequencies of full form promotion</th>
</tr>
</thead>
<tbody>
<tr>
<td>full auxiliaries</td>
</tr>
<tr>
<td>full pronouns</td>
</tr>
</tbody>
</table>

See Cardinaletti and Starke (1999) for other arguments for the structural approach, based on the crosslinguistic properties of pronominal elements.20

---

19 One occurrence of the full future auxiliary is unstressed in the Piva-Drobnjak corpus: Rástržan ovì ràd: očeš tìmo, očeš ámo ‘This work is scattered hither and thither’ (V:217).
20 In fact, Cardinaletti and Starke distinguish three pronominal types—‘strong’, ‘weak’, and ‘clitic’—which have different distributional and prosodic properties on the surface, but differ underlingly only in their morphosyntactic structure. See in particular Cardinaletti and Starke (1999:193-195).
In my interface analysis of peninitial clitics, I take this to support the view that the PCs realize Tense and Agreement heads in the inflectional layer of the clause (see 5.2.6). The fact that they’re never stressed is then unsurprising in the present framework, which provides many barriers to function word promotion.

On the other hand, the consistent promotion of full forms in some dialects is unexpected. Why, for example, do full pronouns consistently promote in the received data, while heavy prepositions don’t? The interface constraint approach, taken with the structural account of the full-peninitial distinction, suggests that full pronouns’ greater propensity toward promotion is connected to their extra structure, but there is as yet no way of formalizing this more precisely in the PCT framework.

It seems, then, that further progress on the prosodification of full forms will require some sort of enrichment of PCT representations or constraints, and I therefore leave it to future work. Regarding peninitial clitics, on the other hand, I will assume that these represent bare Tense and Agreement morphology, and that this is substantiated enough to support an interface account of their prosody.

5.2.4 Approaches to PC placement


Theoretical approaches to PC placement are relevant to our present purposes in a couple of ways. One is that much of the evidence for PC parsing comes from patterns in
PC placement, on the premise that their placement somehow improves or optimizes their prosodic representations. This premise, however, is debated in the literature. I’ll therefore say why I choose to base much of the argumentation in this chapter on it.

Second, the interface account of clitic prosody depends on function words’ syntactic representations, but there’s perhaps even less agreement on how the PCs are to be represented syntactically. By some proposals, PCs aren’t syntactic words at all, but are inserted directly into phonological representations (see below). Another purpose here, then, is to evaluate the evidence for the claim that PCs are syntactically configured like other function words, and for how they’re configured.

The present review of approaches, therefore, isn’t intended to lead to a specific account of PC placement, but to evaluate existing accounts to the extent necessary to answer our present concerns. Namely, what are PCs’ syntactic representations, and to what extent is PC placement motivated by PC prosody?

The latter question is a principal point of contention, due to two conflicting ideas. On one hand is the insight that the complexities of PC word order might be reducible to a requirement that PCs be enclitic. On the other is the formal goal of minimizing interaction between the syntactic and phonological components of the grammar, which disfavors any word order principles that refer to phonological information.

Accordingly, formal approaches strike various compromises between a maximally restrictive interface, and allowing prosodic principles to influence PC placement. By way of summarizing the variety of accounts, I offer the following classification, ordered roughly from those approaches that assign most of the work of PC placement to the syntactic component, to those that see a large role for the phonology:
A classification of accounts of PC placement

<table>
<thead>
<tr>
<th>Approach</th>
<th>Syntax</th>
<th>Phonology</th>
<th>Bošković classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>strong syntax</td>
<td>placement</td>
<td>no role</td>
<td>strong syntax</td>
</tr>
<tr>
<td>copy selection</td>
<td>placement</td>
<td>filtering</td>
<td>weak phonology</td>
</tr>
<tr>
<td>Morphological Merger</td>
<td>placement</td>
<td>reordering</td>
<td>weak phonology</td>
</tr>
<tr>
<td>host raising</td>
<td>placement</td>
<td>reordering</td>
<td>weak syntax</td>
</tr>
<tr>
<td>Prosodic Inversion</td>
<td>placement</td>
<td>reordering</td>
<td>weak syntax</td>
</tr>
<tr>
<td>Clitic Movement</td>
<td>generation</td>
<td>placement</td>
<td>strong phonology</td>
</tr>
<tr>
<td>phrasal affixation</td>
<td>no role</td>
<td>placement</td>
<td>strong phonology</td>
</tr>
</tbody>
</table>

The table also compares the present classification to the influential one proposed by Bošković (2000). Although these make essentially the same comparisons among proposals, I’ve distinguished approaches that, to my mind, take significantly different views of the interface.

I’ll say first why single-level approaches—or in Bošković’s terms, *strong syntax* and *strong phonology*—don’t work, then offer some discussion of so-called *mixed approaches*, which give roles to both the syntactic and phonological components. In doing so, I review what I see as the crucial arguments for or against various approaches. For more data and discussion, see the summaries by Schütze, Franks, Franks and King, and Bošković mentioned at the beginning of this section.

At one extreme are strong syntax accounts, which have in common that (i) the PCs occupy some second position high and leftward in the clause, (ii) second position follows some clause-initial first position, and (iii) first position must be filled in the syntax (Rivero 1994, 1997, Dimitrova-Vulchanova 1995, 1999). The natures of first and second position, and the condition that first position be filled, vary.\(^{21,22}\)

\(^{21}\) In Rivero’s account, second position is the specifier of WackernagelIP, just below C, and first position comprises the head and specifier of CP, exactly one of which must be filled in order to license any PCs. For
At the other extreme are approaches that derive PC word order in the phonology. One is *Clitic Movement*, according to which the PCs are generated in the syntax in the same positions as their full counterparts—e.g. auxiliaries under Aux°, pronominals in VP—but move to their peninitial positions in the phonological component, by a phonological rule (Radanović-Kocić 1988, 1996, Hock 1992, 1996).\(^{23}\)

Another strong phonology approach is *phrasal affixation*, which analogizes clitic placement in phrasal domains to affix placement in words. PCs are claimed to have no syntactic representation except as phrasal features, receiving their placement, ordering, and phonological shape in the morpho-phonological component. Peninitial placement results from an Optimality Theoretic prioritization of a constraint requiring that PCs be suffixal—that is, noninitial—over some constraint favoring initial placement (Anderson 1992, 1993, 1996, 2000, 2005, Billings 2001, O’Connor 2002).\(^ {24}\)

Such extreme, single-level approaches are incompatible with facts that establish that PC placement is subject to both syntactic and phonological influences. Strong syntax approaches can’t account for phonological effects in PC placement that have no plausible syntactic explanation. Conversely, strong phonology approaches are contradicted by phenomena that show that PCs are configured in the syntax.

---

Dimitrova-Vulchanova, first position is FRONT—a general projection that replaces CP, and that hosts complementizers, topics, and other fronted elements—while PCs are right-adjointed to FRONT.

\(^{22}\) Some proposals by Progovac, Tomić, and Ćavar and Wilder are elsewhere classified as strong syntax accounts, but I characterize them as host raising accounts, because they assume some prosodic influence, however small, on PC placement. See 5.2.5.

\(^{23}\) Radanović-Kocić (1988:134): ‘*Clitic Movement: Move all [+clitic] elements within an IP [I-phrase] into the position after the first P [P-phrase] of the same IP.*’ Hock isn’t as explicit regarding how PC placement happens, focusing rather on arguing that it happens in the phonology as opposed to the syntax.

\(^{24}\) All phrasal affixation accounts that I’m aware of take a subcategorization approach, in that suffixiness (i.e. encliticness) is considered to be specified for each suffix (i.e. enclitic), as well as enforced by constraints, e.g. Anderson’s NON-INITIAL, or Billings’s SUFFIX. Regarding PC peninitiality, however, Anderson posits a separate EDGEMOST constraint for every affix, while Billings’s SCOPE is a more general constraint requiring that ‘elements precede the domain over which they take scope’.
One point that establishes a role for the phonology consists in examples where PCs must be late following an intrusive parenthetical element (here, *tvoja mama*), which induces an I-phrase edge immediately preceding the PCs’ usual location:

\[(20) \text{Late placement after a parenthetical (Radanović-Kocić 1996:437)}\]

\[\#_1\text{Ja, }\#_1[^{tvoja\ mama}, ^{/\text{sam ti/ obečala } /\text{sam ti/ igračku. }\#} \]

I \([\text{your mom } ]\) promised \text{AUX you toy}

I, your mom, promised you a toy.

While one observes late placement after various kinds of elements, parentheticals are a crucial case because they have minimal effect on the matrix syntactic structure—in particular, they don’t plausibly fill a hypothetical first or second position. This effect therefore contradicts strong syntax accounts, supporting rather the phonological generalization that PCs can’t immediately follow a prosodic break (see 5.4.3).

Another pattern in PC placement that’s difficult to explain in purely syntactic terms is the utterance-final effect, whereby PCs are avoided utterance-finally if there’s any other possible placement for them (see 5.4.2). Browne offers these examples, where the PC *će* can follow *doći* as long as it’s followed in turn by the adjunct *u utorak* (a), but removing the adjunct makes such placement final and ungrammatical (b):

\[(21) \text{The utterance-final effect (Browne 1975:120)}\]

a. Moja mladja sestra *doći* *će* *u utorak*.

b. Moja mladja sestra *će/ doći* /??*će/.

my younger sister come FUT on Tuesday

My younger sister will come (on Tuesday).
As with late placement, the simplest generalization here is that PCs are avoided next to prosodic breaks—that is, at the edges of constituents above prosodic word—but in a syntactic account, the presence or absence of an adjunct ought to have no effect.

Now, the arguments against purely phonological accounts come mainly from phenomena that show that PCs are part of the syntactic representation of the clause. These establish, moreover, that different PCs occupy separate, hierarchical positions, and that PC cluster orders mostly reflect their syntactic configuration. The phenomena in question are adverb interpretations, VP ellipsis, clitic climbing, and clitic splits, and are discussed most fully by Stjepanović (1997, 1998) and Bošković (2000, 2001a).

Perhaps the strongest argument that PCs are configured syntactically is based on their effects on adverb interpretations. Bošković (2001a) observes that adverbs with both manner and sentential readings (e.g. mudro ‘wisely’) can get either reading after an auxiliary PC (su) (a), but only a manner reading after a pronominal PC (ga) (b):

(22) Evidence from adverb interpretations: AUX > PRON (Bošković 2001a:52-53)

a. Oni su mudro prodali auto.
   they AUX wisely sold car
   sentential: ‘It was wise of them to sell the car.’
   manner: ‘They sold the car in a wise manner.’

b. Oni su ga mudro prodali.
   they AUX it wisely sold
   *sentential: ‘It was wise of them to sell it.’
   manner: ‘They sold it in a wise manner.’

Assuming that sentential adverbs are structurally higher than manner adverbs, Bošković proposes further that auxiliary PCs are above both kinds of adverb, but
pronominal PCs are only above manner adverbs. As a result, *mudro* in (a) could be in either adverb position, but in (b) can only be a low, manner adverb.

Bošković cites similar examples showing that sentential adverbs are below the auxiliary *je* and ethical datives, but above all other pronominal PCs (2001a:55-61). In short, adverbs and PCs are roughly in this hierarchical configuration:

(23) \[ \text{AUX, ETH PCs} > \text{sentential adverbs} > \text{pronominal PCs} > \text{manner adverbs} \]

However, Bošković explicitly denies that PCs occupy consistent positions, claiming for example that auxiliary PCs *can* be higher than sentential adverbs, but need not be. I address the more precise identity of these positions in 5.2.6.

Other arguments for PC configurations depend on more marginal phenomena, in the sense that the relevant examples range from marginally to thoroughly ungrammatical, depending on the speaker. One such phenomenon is VP ellipsis. Stjepanović observes that, for some speakers, an auxiliary PC (here, *ste*) can remain when a VP is elided (a), whereas eliding the auxiliary with the VP is ungrammatical (b):

(24) Evidence from ellipsis: AUX > VP (Stjepanović 1997:273, 276)

a. ?Oni *su* kupili novine, a i vi *ste* kupili novine (takodje).
   They AUX bought newspapers and and you AUX bought newspapers too
   They bought the newspapers, and you did too.

b. *Tu* knjigu *su* mi dali, a i vi *ste* mi dali.
   that book AUX me gave and and you AUX me gave
   They gave me that book, and you did too.
Assuming that only whole constituents are elided, Stjepanović takes this to show that the auxiliary lies outside and above VP.\footnote{Robert Rothstein (p.c.) points out that (24)b might be bad also because it lacks an overt oni ‘they’ to contrast with vi ‘you’, independently of whether an auxiliary is elided.}

Pronominal PCs, by contrast, can elide with the VP, as in (a) and (b) below. This indicates that these form a constituent with VP, and are structurally lower than auxiliary PCs. Moreover, while accusative \textit{ga} can elide, leaving dative \textit{mu} (a), the reverse is ungrammatical (c), indicating that datives are higher than accusatives.

\begin{itemize}
\item[(25)] Evidence from ellipsis: \textit{AUX} > \textit{DAT} > \textit{ACC} (Stjepanović 1997:274-275)
\item[a.] ?Mi \textit{smo} \textit{mu} \textit{ga} \textit{dali}, a i vi \textit{ste} \textit{mu} \textit{ga} \textit{dali}, (takodje).
\item[b.] ?Mi \textit{smo} \textit{mu} \textit{ga} \textit{dali}, a i vi \textit{ste} \textit{mu} \textit{ga} \textit{dali}, (takodje).
\item[c.*] Mi \textit{smo} \textit{mu} \textit{ga} \textit{dali}, a i vi \textit{ste} \textit{mu} \textit{ga} \textit{dali}, (takodje).
\end{itemize}

\begin{itemize}
\item{we AUX him it gave and and you AUX him it gave too}
\item{We gave it to him, and you did too.}
\end{itemize}

Progovac (1993) offers another argument against phonological placement based on \textit{clitic climbing}, where PCs construed in a lower clause are realized in a higher clause. She observes that whereas PCs can’t climb from a finite clause with indicative-like meaning (a), climbing is marginally possible from a subjunctive-like clause (b):

\begin{itemize}
\item[(26)] Clitics can climb out of subjunctive-like finite clauses (Progovac 1993:134)
\item[a.] Milan \textit{/*ga/} kaže [da \textit{ga/vi} vidi ].
\item{Milan says \textit{[C \textit{him} sees]}}
\item{Milan says that he can see him.}
\item[b.] Milan \textit{/?ga/} želi [da \textit{ga/vi} vidi ].
\item{Milan \textit{wants} \textit{[C \textit{him} sees]}}
\item{Milan wants to see him.}
\end{itemize}
A purely phonological account, according to which principles of PC placement have no connection to mood properties of the clause, can’t capture this difference.\textsuperscript{26}

Also marginal in acceptability are \textit{clitic splits}, where PCs don’t cluster, but are divided by intervening material. Arguably, differences in the acceptability of various splits correspond to whether they preserve PCs’ hierarchical configurations. For example, a parenthetical can marginally split a higher auxiliary PC from a lower reflexive PC (a), but the reverse is impossible (b):

\begin{enumerate}
\item [(27)] Evidence from clitic splits: \textbf{AUX > se} (Bošković 2001a:51, 54; Q29)
\begin{enumerate}
\item a. ?Oni \textbf{se, kao što sam vam rekla}, predstavili \textbf{se} Petru. \hfill g: 1.9/3, ones: 3/8
\begin{tabular}{llll}
they & AUX & like & \textbf{C} & AUX you told & introduced \textbf{RFL} Petar
\end{tabular}
\item b. *Oni \textbf{se, kao što sam vam rekla}, predstavili \textbf{su} Petru. \hfill g: 3.0/3, ones: 0/8
\begin{tabular}{llll}
they & \textbf{RFL} & like & \textbf{C} & AUX you told & introduced \textbf{AUX} Petar
\end{tabular}
\end{enumerate}
\end{enumerate}

They, as I told you, introduced themselves to Petar.

As shown here, judgments on the questionnaire support this observation.

The evidence from clitic splits also agrees with that from ellipsis concerning a structural asymmetry between datives and accusatives. Take the examples in (28), which combine splitting with climbing. While climbing both dative \textit{mu} and accusative \textit{ga} is possible (b), as is climbing \textit{mu} over \textit{ga} (c), climbing \textit{ga} over \textit{mu} is not (d):

\begin{enumerate}
\item [(28)] Evidence from clitic splits: \textbf{mu > ga}
\begin{enumerate}
\item a. ?Oni \textbf{mu}, kao što sam vam rekla, predstavili \textbf{ga} Petru. \hfill g: 3.2/3, ones: 0/8
\begin{tabular}{llll}
they & AUX & like & \textbf{C} & AUX you told & introduced \textbf{RFL} Petar
\end{tabular}
\item b. *Oni \textbf{ga}, kao što sam vam rekla, predstavili \textbf{mu} Petru. \hfill g: 3.4/3, ones: 0/8
\begin{tabular}{llll}
they & \textbf{RFL} & like & \textbf{C} & AUX you told & introduced \textbf{AUX} Petar
\end{tabular}
\end{enumerate}
\end{enumerate}

\textsuperscript{26} BCS doesn’t distinguish indicative and subjunctive clauses morphologically, though verbs of thinking and feeling tend to take complements introduced by the complementizer \textit{što}, rather than \textit{da} (Kordić).
(28) Evidence from clitic splits: DAT > ACC (Stjepanović 1997:271-272; Q44)

a. Marija želi [da *mu ga predstavi ]. g: 1.1/3, ones: 7/8
b. ?Marija mu ga želi [da predstavi ]. g: 2.5/3, ones: 2/8
c. ?Marija mu želi [da ga predstavi ]. g: 2.8/3, ones: 0/8
d. *Marija ga želi [da mu predstavi ]. g: 3.0/3, ones: 0/8

Marija wants [C him him introduces]
Marija wants to introduce him to him.

To summarize the discussion so far, strong syntax approaches can’t account for the observation that PCs are avoided next to prosodic breaks (see 5.4), while strong phonology accounts, according to which second position is defined in phonological terms, are contradicted by evidence that PCs occupy hierarchical syntactic positions.

5.2.5 The significance of host splitting

In response to evidence for both syntactic and phonological effects in placement, most scholars undertake mixed approaches that divide the work between the syntax and the phonology. I’ll discuss several mixed aproaches, concluding that the most promising is the host raising approach, by virtue of its ability to accurately generate cases of host splitting, where PCs interrupt an initial noun phrase or prepositional phrase.

Broadly speaking, mixed accounts have in common that they relegate most of the work to the syntax, which puts PCs more or less where they’re pronounced, but countenance some limited reordering in the phonology that ensures pen initiality when necessary. Where mixed accounts differ is in how reordering happens.

One influential mixed approach achieves reordering by Prosodic Inversion (PI), a phonological rule that satisfies a clitic’s prosodic subcategorization, when necessary, by reversing its order with respect to an adjacent prosodic word. To put it another way, if the
syntax strands PCs somewhere where they can’t be enclitic, such as clause-initially, then they invert with a following word by PI, resulting in peninitial placement and enclisis (Halpern 1992, 1995, Percus 1993, Schütze 1994, 1996, King 1996).27

A principal motivation for PI consists in cases where PCs divide a preposition and the first word of its complement from the rest of the PP:

(29) [U ovoj je sobi ] klavir.  
[in this AUX room] piano  
The piano is in this room. (Halpern 1995:46)

I’ll refer to splitting of initial NPs and PPs by PCs as host splitting. At first, host splitting seems to be described most efficiently in phonological rather than syntactic terms, since nouns, but not prepositions, are typically prosodic words. This supports the need for a rule like PI that puts PCs after the first p-word of their clause with an apparent disregard for syntactic constituency.

However, comparisons of the grammaticality of different host splittings show that PI is too strong. Take these examples of alternative 2W and 2D placements:

27 Halpern defines Prosodic Inversion as the elsewhere clause (b) of a general rule of clisis:

(i) Prosodic adjunction of clitics (Halpern 1995:5)

For a clitic X, which must have a prosodic host ω [prosodic word] to its left (respectively right),

a. if there is a ω, Y, comprised of material which is syntactically immediately to the left (right) of X, then adjoin X to the right (left) of Y.

b. else attach X to the right (left) edge of the ω composed of syntactic material immediately to its right (left).

Halpern credits several other scholars with proposals similar to Prosodic Inversion, including Marantz (1988, 1989), Sproat (1988), Taylor (1990), Sadock (1991), and Steele (1990).
(30) Host splitting (Browne 1975:113-114)

   [my FUT younger sister ] come on Tuesday
My younger sister will come on Tuesday.

   [last AUX year ] opened hotel-and-catering school
Last year they opened a hotel-and-catering school.

   [Soviet AUX guests] received and president Republic Austria Jonas
President Jonas of the Republic of Austria also received the Soviet guests.

d. [Lav /je/ Tolstoj] /je/ veliki ruski pisac.
   [Leo AUX Tolstoi] great Russian writer
Leo Tolstoi is a great Russian writer.

Such examples are much discussed in the literature on PC placement, with some
disagreement over their grammaticality.28

Nevertheless, we find certain trends. While dividing determiner-like adjectives
from their NP—e.g. moja ‘my’ in (30)a—is unmarked in some varieties, splitting full
adjectives from NP (b,c) is marked but possible, while splitting names (d) is marked to
impossible. Being a purely phonological rule, PI can’t distinguish these cases.

Other kinds of splitting are degraded to impossible in all dialects. These include
splitting a noun (a) or preposition (b) from its complement, or a conjoined NP (c):

(31) Some host splits are impossible

a. [Djevojka /*je/ koju Ivan voli] /je/ fina.
   [girl which Ivan loves] AUX pretty
The girl that Ivan loves is pretty. (Wilder and Čavar 1994:35)29

---


29 Wilder and Čavar set off the relative clause in this example by commas, but I’ve omitted these, taking them to be purely orthographic. Compare Radanović-Kocić’s presentation of restrictive relatives in 5.4.4.
b. [Prema */ga je/ Milanu] /ga _je_/ Marija bacila, a ne od njega. [toward Milan] him AUX Marija threw and not from him
Mary threw it toward Milan, not away from him. (Progovac 1996:417)

c. [Lingvistika */su/ i strukturalizam] /su/ postali moda. [linguistics and structuralism] AUX became fashion
Linguistics and structuralism have become fashionable. (Radanović-Kocić 1988:117)

Yet by their prosodic properties, these initial words are acceptable hosts. Nouns 
(*djevojka, lingvistika*) are inherently accentogenic, while prepositions (*prema*) can 
promote by focus or, in some dialects, by size. That such splittings are ungrammatical 
shows that PI isn’t an available rule.\(^{32, 33}\)

On the contrary, Wilder and Ćavar (1994) and Progovac (1996) establish that the 
possibility of splitting various phrases is independent of PC placement. For example, 
prenominal adjectives can be divided from their NP (a,b), and prepositional complements 
split (c), whether the intervening material consists of PCs or of other elements:

\[(32)\] NP and PP splits are possible independently of the presence of PCs

\[a.\] [Anina...] dolazi [... sestra].
[Ana’s...] comes [... sister ]
Ana’s sister is coming. (Progovac 1996:415)

\[b.\] [Zeleno...] _je_ Ivan kupio [... auto].
[green ...] AUX Ivan bought [... car ]
Ivan bought a green car. (Wilder and Ćavar 1994:36)

---

\(^{30}\) Progovac provides only the ungrammatical 2W wording, but I assume that 2D is grammatical here.

\(^{31}\) I’ve marked 2W as ungrammatical based on Radanović-Kocić’s discussion.

\(^{32}\) Although 2W before postnominal complements is generally degraded, questionnaire judgments on the 
following item varied widely. The score for 2D was 1.0 (ones: 7/7), and for 2W was 2.3 (ones: 1/7):

\[(i)\] [Vlada /?čel/ Bosne i Hercegovine] /čel/ aktivirati ovaj program.
[government Bosnia and Herzegovina] FUT activate this program
The government of Bosnia and Herzegovina will activate this program. (Q6)

\(^{33}\) See Halpern (1995:73-76) for a prosodic account of unsplittable constituents, or ‘fortresses’.

\(^{34}\) Progovac (1996:414, n4): ‘As is the case with any scrambled word order, [Anina dolazi sestra ‘Ana’s 
sister is coming’] is marked and involves emphasis on the possessive.’
c. [U veliku...] Jovan [... sobu ] ulazi.
   [in big   ...] Jovan [... room] enters
   Jovan walks into a big room. (Franks and King 2000:359)

On the other hand, an important difference between splitting by PCs and by non-PCs is that the latter is always marked, indicating that one or both portions of the split constituent are special information—that is, topic or focus. But host splits by PCs exhibit degrees of markedness across dialects. At one end are what we may call 2W dialects, where splits that are marked with intervening non-PC material are unmarked if only PCs intervene. At the other are 2D dialects—including most of the modern standards—where all splits are marked, whether by PCs or by non-PCs.

This point is perhaps the strongest test for mixed accounts, and is often ignored in the literature on PC placement. This may be ascribed to the predominance of 2D among the modern standards, to the difficulty in quantifying the differences between 2W and 2D dialects, and to the association of 2W with regional, archaic, and literary styles:

The choice between “first word” and “first phrase” in placement of enclitics is often a matter of individual taste, and different speakers and writers may express different preferences. In general it is more old-fashioned and literary to break up a phrase by putting the enclitics after the first word… In everyday and conversational style, enclitics are more likely to be put after the whole phrase. (Browne 1975:114)

With speakers who come from Western Hercegovina (the dialect of which constitutes the basis for Standard Serbo-Croatian), cliticization to the leftmost stress-bearing constituent is strongly preferred. (Tomić 1996:861, n46)

Further, although 2D is more common in the modern data, what appears to be unmarked 2W placement is attested even in the modern (J) corpus:
In short, it’s apparent that unmarked 2W placement is typical of some regions and styles, but it’s less clear what types of splitting are unmarked, marked, or impossible in particular varieties, or what interference there might be from received and prescriptive standards. It’s also apparent that before a clearer picture of 2W-2D variation is achieved, there can be no conclusive account of peninitial placement.

Nevertheless, we may distill from the preceding discussion at least three broad observations that an adequate account of PC placement must account for:

(i) The PCs’ consistent peninitiality is *phonologically motivated*.

(ii) PC placement and host splitting are *syntactically constrained*.

(iii) Dialects differ as to whether 2W or 2D is unmarked.

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35 It’s possible that splitting in (c) is in fact marked, the fragment *ni jedan* having fronted for focus. Still, this parallel 2D example shows that PCs don’t necessarily split *ni jedan* from its noun:

(i) // [ni jednu reč ] *im* ne bih verovao //
   // [nor one word] *them* not CND believed //
   // I would not believe a single word from them // (Ogledalo)
Whereas PI captures the phonological motivation for peninitial placement (i), it fails to address constraints on splitting (ii), and to distinguish 2W and 2D dialects (iii). As we’ll see, other mixed approaches find ways of constraining splitting, but likewise fail to account for 2W-2D variation. In the rest of this section, I’ll review these approaches, concluding in favor of host raising.

Another mixed approach, which I call *copy selection*, completely eliminates any movement at PF. Building on Chomsky’s (1995) copy-and-delete theory of movement, and Pesetsky’s (1998) Optimality Theoretic approach to the pronunciation of chains, the idea is that PCs form chains of copies during their syntactic derivations, but only those copies that optimally satisfy phonological constraints are pronounced (Franks 1998, 1999, 2000, Progovac 1998b, 1999, 2005, Franks and King 2000). In intuitive terms, the phonology filters—but can’t reorder—the output of the syntax.

The success of the copy selection approach therefore depends, first, on whether all PCs leave enough copies, both high and low in the clause, to constitute a single cluster following the highest viable host. While this is quite plausible for pronominal PCs, which might form chains with object positions in VP, it’s less obvious whether PC auxiliaries always leave copies low enough to be peninitial. (See Bošković 1995 for an analysis of auxiliary derivations, and 5.2.6 for further discussion of PC configurations).

A more serious problem for copy selection is unmarked host splitting. Since PCs are claimed to be pronounceable only where the syntax puts them, the only possible splits are those that are derived in the syntax. While this rules out ungrammatical splits, it can’t generate unmarked 2W splits. Take this unmarked split from the J corpus:
(34) [Po jedinstvenoj se stopi] tako u Estoniji oporezuje od 1994 // [by uniform RFL rate] thus in Estonia imposes tax from 1994 // Such taxation by uniform rate has been imposed in Estonia since 1994 // (Dnevnik)36

Under copy selection, this PP must have been split in the syntax, which requires some syntactic motivation—such as that that jedinstvenoj, but not stopi, is topical or focal, and fronts over se to a high topic or focus position. But this is the wrong prediction both for this example, and in general for unmarked 2W splits. Thus, whereas PI is too strong, generating ungrammatical splits, copy selection is too weak, failing to generate unmarked splits that have no plausible syntactic motivation.

Some other mixed accounts incorporate a form of Marantz’s (1988, 1989) rule of Morphological Merger (Bošković 1995, 2000, 2001a, Embick and Izvorski 1997). For Embick and Izvorski, Merger applies much like PI to rescue a PC that’s stranded clause-initially by the syntax, inverting it with a following word. This approach therefore suffers the same drawback as PI—that it’s too strong, predicting ungrammatical splits.37

Bošković calls on a weaker version of Merger to supplement what is otherwise a copy selection account. For Bošković, Merger can’t affect word order, but serves rather to merge the PCs with an initial word or phrase, in order to resolve the PCs’ lexically specified requirements that they (i) be suffixes, and (ii) be initial in I-phrase. Therefore this, like other copy selection accounts, can’t generate unmarked 2W.38

36 Both the paragraph and the article from which this example comes are about uniform tax rates, clearly making the entire PP topical. In addition, another unmarked PP split in the same article confirms that it’s written in a 2W dialect (or style): [u tim je zemljama] ‘in those AUX countries’.
37 Embick and Izvorski (1997) claim that reordering is either by Merger or by PI, but seem to favor Merger.
38 Bošković redefines Marantz’s Merger somewhat, based on his analysis of PC placement in BCS:
(i) Morphological Merger: At any level of analysis, independent constituents X and Y standing in a relation at that level (or heading phrases standing in a relation) may merge into a single word X+Y, projecting the relation between (the constituent headed by) X and (the constituent headed by) Y onto the affixation relation X+Y. (Bošković 2000:108)
In answer to these criticisms, I support the approach that I call host raising. This differs from other mixed approaches in that reordering happens by more or less normal movement. Host raising accounts have in common that if PCs are stranded by the syntax without a preceding host, then a host is provided by raising a lower word or phrase to precede the PCs (Wilder and Ćavar 1994, Ćavar and Wilder 1999, Progovac 1996, Tomić 1996). In other words, host raising is phonologically motivated movement.\(^{39}\)

However, in contrast to the abovementioned accounts, I explicitly characterize host raising as PF movement. More specifically, I assume a T-Model in which the syntactic derivation at some point splits into two branches, along which separate derivations proceed toward Phonetic Form (PF), or pronunciation, and Logical Form (LF), or interpretation (Chomsky and Lasnik 1977, Chomsky 1993). PF movement, then, is movement that happens along the PF branch.

This model has at least two important consequences for host raising. First, syntax and PF belong to the same continuous derivation, sharing, among other things, X-bar structures and movement. Moreover, since some X-bar structures necessarily persist during prosodic structure-building, providing a skeleton for the mapping to prosodic constituents, it’s plausible that there’s some point at PF when syntactic structures and constraints exist simultaneously with prosodic structures and constraints.

Assume that it’s at this point that host raising applies, if necessary, to improve the prosodic representation of the PCs. Because of the simultaneity of syntactic and prosodic

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By Merger, a PC merges with a preceding word or phrase, yielding a unit that simultaneously satisfies the requirements that PCs be suffixal, and that they be I-phrase-initial. See Bošković (2001a:83-92).

\(^{39}\) Wilder and Ćavar, Progovac, and Tomić agree that PCs are in C°, or right-adjointed to it. But for Wilder and Ćavar and Tomić, the only host raising is verb movement to C°, and applies only in the event that the syntax provides no host by topicalization (or alternatively, for Tomić, by focus fronting). In Progovac’s account, host raising can be verb movement to C°, or phrase movement to the specifier of CP.
constraints, host raising can be motivated by prosodic principles, yet still have the properties of movement—that is, displacement of a word or phrase to a c-commanding position, subject to the same or similar constraints as syntactic movement, such as island constraints and the Head Movement Constraint (though see 5.2.6).

Therefore host raising, unlike copy selection, can generate splits that have no syntactic motivation. Further, being subject to constraints on movement, host raising, unlike PI, can’t generate ungrammatical splits. Thus, host raising models the observations that peninitial placement is phonologically motivated, but syntactically constrained.

I don’t claim that host-raised elements raise to any particular position. Rather, I assume that any particular instance of host raising is the least marked movement available that satisfies whatever phonological principles motivate host raising. If a lower element must raise to precede the PCs, the one chosen will be the highest available constituent, and it will make the shortest move that achieves its purpose. For example, host-raised subjects might move to the specifier of AgrSP, while other phrases might raise to a generic topic position, or simply adjoin to the front of the clause.

The second important consequence of this model is that, whereas the effects of syntactic, or stem movement are inherited by both the PF and the LF branches, the PF derivation has no effect on interpretation, just as the LF derivation isn’t reflected in pronunciation (Sauerland and Elbourne 2002). For example, I assume that topic and focus movement happen in the syntax, and therefore affect interpretation, but that host raising, as PF movement, doesn’t affect interpretation.

Suppose, then, that 2W dialects are those where constraints on movement overrule those on splitting, with the result that it’s better to host raise only a single word
rather than an entire phrase, even if this yields host splitting. Importantly, such splits
can’t affect interpretation, because they happen at PF. This model, then, can account both
for the observation that what is splittable by PCs depends on what is splittable in general,
and for 2W dialects where splitting by PCs carries no special interpretation.

Conversely, 2D dialects are those where constraints on splitting overrule those
that limit movement, so that it’s better to raise an entire phrase than to split it. Yet just as
in 2W dialects, host raising doesn’t affect the interpretation of host-raised elements,
because it happens at PF.40

Host raising is criticized on the grounds that it involves ‘look-ahead’ to the
phonological component. But this is true only if host raising happens in the syntax, before
information on the prosodic well-formedness of PCs becomes available. On the contrary,
I contend that host raising happens at the same stage as prosodic structure-building,
where, as we’ve seen, at least some syntactic structure must persist to guide the
construction of p-words, P-phrases, and I-phrases, which correspond to lexical words,
lexical extended projections, and comma phrases, respectively.

In this discussion, I’ve compared a range of approaches to PC placement,
classifying them on a rough scale by how much work they assign to the syntactic versus
the phonological components of the grammar. I also highlighted some of the crucial
points of evidence that decisively eliminate some of these approaches.

40 This proposal for distinguishing 2D and 2W dialects is similar in spirit to those of Anderson (1996, 2000)
and Billings (2001), the important difference being that those are phrasal affixation accounts (see 5.2.4),
which see constraints on PC placement and PC host splitting as distinct from those that constrain syntactic
movement, whereas I seek to attribute both kinds of phenomena to the same constraints.
I concluded that the most successful approaches are those in which most aspects of the PCs’ placement and ordering are explained by their configuration in the syntax, but which allow some kind of reordering in the phonology, when necessary, to ensure that the PCs are noninitial in some phonological domain. Of these, I argued in favor of the host raising approach, on the grounds that it allows phonologically motivated host splitting, while properly constraining what host splits are possible in a particular dialect.

I proceed in the next section to offer a more precise characterization of PC syntax. The nature of the PCs’ prosodic representations, on the other hand, and of the principles that motivate reordering, will occupy us for the rest of this chapter.

5.2.6 The syntactic representation of the PCs

Having concluded that PCs are part of the syntactic representation of the clause, I question now how they’re configured in the syntax. This is of central importance to any interface constraint account, since that approach takes clitics’ prosodic representations to depend in part on their syntactic representations. Here I’ll adopt some assumptions concerning PC configurations to the extent necessary to support an interface account. For more extensive discussion, see chapter 11 of Franks and King (2000).

I’ll be interested in two general questions of particular importance to an interface account. First, are PCs syntactically free heads (like prepositions), or are they adjoined to other words (like ne)? Second, where are PCs with respect to syntactic phrase edges that determine the edges of P-phrases—in particular, CP and VP?

Based on the evidence reviewed in 5.2.4 that PCs occupy separate, hierarchical positions, and following most recent accounts of PC syntax, I identify the PCs with heads
in the inflectional layer of the clause—that is, between $C^o$ and VP (Franks and Progovac 1994, Bošković 2000, Franks and King 2000, Progovac 2005):

(35) PCs are separate inflectional heads

\[
\begin{array}{c}
\text{CP} \\
\text{CP} \quad \text{AgrSP} \\
\text{C}^o \quad \text{AgrS}^o \quad \text{TP} \\
\text{li} \quad \text{AUX} \quad \text{T}^o \\
(je) \quad \text{AgrO}^o \\
\text{DAT} \quad \text{ACC} \\
\text{GEN} \quad \text{Aux}^o \\
\text{se} \quad (je) \\
\text{AgrOP} \quad \text{AgrOP} \quad \text{AgrOP} \quad \text{AuxP} \\
\text{se} \quad (je) \\
\text{VP} \\
\end{array}
\]

I assume that the PCs are generated in or move to these positions in the syntax, and that their surface placement within the clause, and ordering within the PC cluster, directly reflect this syntactic configuration. In the rest of this section, I’ll address a number of issues connected to these assumptions.\(^{41,42}\)

The claims that $li$ is in $C^o$, auxiliary PCs in Subject Agreement, and pronominal PCs in Object Agreement heads are generally accepted among those studies that adopt a syntactic representation for PCs. There’s less agreement on the representations of $se$ and $je$, which I’ll justify below. In any case, what’s important to this study isn’t PCs’ formal labels, but factors that can affect their prosodification, such as their locations, and the fact that they’re heads, as opposed to phrases or a single complex constituent.

\(^{41}\) By this model of PC configurations, sentential adverbs must be between Tense$^o$ and AgrOP, and manner adverbs between AuxP and VP—at least when cooccurring with PCs. See 5.2.4.

\(^{42}\) The question of whether pronominal PCs are generated in VP, or in their surface positions in inflection, is interesting but not directly relevant to an account of their prosody. Regarding ethical datives, these behave high with respect to tests for PC configurations, which indicate that they’re above sentential adverbs, but it’s unclear whether they’re to be analyzed as Object Agreement. See 5.2.2, 5.2.4.
Se and je are less straightforwardly assigned representations because se is not quite pronominal, and je not quite an auxiliary. Although se saturates argument positions, it isn’t ordered by case like other pronominal PCs, and fulfills a superset of the functions of its full counterpart sebe. Similarly, je is ordered differently from other auxiliaries, but is auxiliary-like with respect to some syntactic tests for PC configurations.43, 44

Although accounts differ, there’s a consensus that se and je have an expletive character, connected to a lack of person, number, and case features (Radanović-Kocić 1988, Tomić 1996, Progovac 1998b, 2005, Cardinaletti and Starke 1999, Franks and King 2000). In this vein, I assume that PCs are subject to constraints on the surface orders of Agreement features (Grimshaw 1997, 1999, Legendre 1999, 2000).45

Assuming ordering by features, I propose, following Franks and King, that se is last among pronominals because it lacks case. As for je, I propose that its surface ordering by features can be reconciled with the proposed structural configuration of auxiliary PCs if it’s pronounced high in Tense° when no pronominals are present, but in a low Aux° head when it clusters with featureful pronominals. Although it isn’t crucial to any data that I’m aware of, we may further assume that, unlike other auxiliary PCs, je is never as high as AgrS° because it lacks Subject Agreement features.

44 The tests that indicate that je is above sentential adverbs, and by extension, above pronominal PCs, are ellipsis, clitic splits, and adverb interpretations (see 5.2.4; Stjepanović 1997:278, Bošković 2001a:55-61). Significantly, je can be shown to be high only when it doesn’t cluster with pronominals, which fits with my proposal that je is high only in that circumstance. For other analyses of je, see Radanović-Kocić (1988:45-49), Tomić (1996:837-841), Franks and King (2000:329-330), and Bošković (2001a:125-131).
45 There are several implementations of clitic ordering by features. While Grimshaw (1997, 1999) uses underspecification and feature-specific alignment and faithfulness constraints to account for clitic orders in Romance languages, Legendre (1999, 2000) accounts for Bulgarian and Macedonian clitic orders with alignment constraints, but without underspecification. Last, implementations of this approach that are specific to BCS derive clitic orders strictly by feature-driven syntactic movement and adjunction (Franks and Progovac 1994, Franks and King 2000, Progovac 2005).
Now, to return to the question of whether PCs are free or adjoined, recent work finds that both alternatives occur. Beside the evidence that PCs are heads, other facts indicate, further, that the verb moves and adjoins to them, overtly or covertly, during its derivation (Franks 1998, Progovac 1998b, 2005, Franks and King 2000).

First, the verb is the only head, apart from introducers, that precedes PCs. All other initial elements are phrases or fragments of phrases. Second, when a verb precedes PCs it must immediately precede them, indicating that this is its final destination. Third, the verb regularly adjoins to the negator *ne*, and sometimes to complementizers, indicating that it regularly moves through its entire extended projection.

Take this example of post-verbal PC placement:

(36)  Ne evidentira *se* formalna provjera identiteta, samo potpis pojedinca.  

No formal confirmation of identity is filed, only the individual’s signature. (*Avaz*)

This is one way that the derivation of this example might proceed, with the verb adjoining first to *ne*, and then to *se*:

(37)  V-to-I adjunction

```
  IP
   I
     Neg_2     NegP
       I         t_2
       V         VP
   ne     evidentira_1     t_1
   evidentira_1     formalna provjera...
```
It’s unclear whether such V-to-I movement ever violates the Head Movement Constraint (Chomsky 1986). Verb raising that provides a host for PCs has been characterized both as specially motivated Long Head Movement (Rivero 1991), and as normal head-to-head movement (Wilder and Ćavar 1994).

With respect to the host raising model laid out in 5.2.5, either alternative seems possible. On one hand, the verb might regularly undergo successive, constrained V-to-I raising, with host raising of the verb simply making this overt, perhaps by copy selection. On the other hand, if host raising is evaluated by an OT grammar, then the simplest account might be that the prosodic principles that motivate host raising overrule the Head Movement Constraint. I won’t attempt to resolve this question here.

In any case, it’s significant for an interface analysis that, when the verb precedes the PCs, they are likely adjoined in a complex head. Based on the interface accounts of V-to-Neg and V-to-C adjunction, this makes it likely that the PCs are parsed as internal enclitics, at least when following their verb.

On the other hand, the copy selection approach to PC placement (see 5.2.4) raises the possibility that some PC copies might form a complex head with a clause-initial verb, but remain unpronounced, giving way to lower copies in inflection (or even in VP), in which case the PCs wouldn’t be parsed in a head-adjoined structure. I revisit the question of whether post-verbal PCs are pronounced on the verb in 5.3, in connection to more detailed phonological evidence for PC parsing.46

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46 Another issue raised by the possibility of V-to-I adjunction is that, whereas PCs would adjoin to the verb’s right (e.g. vidi ga ‘sees him’), negation and complementizers adjoin to its left (ne vidim ‘I don’t see’, da vidiš ‘you should see’). One interpretation of these facts is that these can’t all be head adjunction. Another interpretation is that adjunction order maintains pre-adjunction order (Franks and King 2000:341).
This brings us to another question of relevance to this study—namely, where are PCs with respect to phonological phrase edges? Assuming the P-phrasing model proposed in 4.5, according to which both VP and CP regularly determine P edges, this amounts to asking where PCs and other clausal elements are pronounced with respect to the left edge of VP, and to the left edge of the clause.

I claim that the PCs are always pronounced in inflection, and that the VP typically remains intact at PF, the verb and other VP elements raising out of VP only (i) by V-to-C movement (e.g. in *li* clauses; see 5.2.3), (ii) by movement for topicalization, focus, or scope, or (iii) by PF movement—that is, host raising—to make PCs peninitial.

Let’s call this the *intact VP hypothesis*. It entails, first, that most elements that are pronounced following the PCs, including subjects, are still in VP. Second, main clauses with PCs frequently get their initial elements by host raising. For the interface analysis, this rules out the possibility of PC proclisis, because PCs consistently precede the P edge at the edge of the greater VP.

The intact VP hypothesis is supported by both syntactic and phonological phenomena. On the syntactic side, recall that in embedded clauses, all VP elements, including subjects, follow PCs (see 5.2.2). Further, functional heads in BCS are as a rule rigidly ordered with respect to their complements, as opposed to phrases, which move fairly freely. Last, work in BCS syntax indicates that some peripheral elements that are analyzed in other languages as raising to the I or C layers of the clause by PF, notably subjects and *wh* phrases, are relatively low at PF in BCS (see below).

On the phonological side, several points indicate that PCs are prosodically segregated from the greater VP. For one, PCs and complementizers never parse with
following elements (see 4.5.5, 5.3.2). Further, post-PC subjects can share a P-phrase with the verb, indicating that they’re VP-internal (see below). Last, patterns in complementizer promotion, and co-promotion with PCs, indicate that these categories are sandwiched between the P edges aligned to the VP and the clause (see 5.3.2, 5.5.3).

I’ll defend this position here, first, by reviewing those points of evidence that aren’t addressed elsewhere in the dissertation. Then I’ll address the opposing claim, articulated most fully by Bošković, that PCs can be pronounced inside VP.

Some data point to an absence of a P edge between a subject and a following verb, indicating that subjects are VP-internal. For example, Radanović-Kocić observes that a fronted object is necessarily followed by a break, blocking inter-word palatal assimilation (a), but such a break is optional between a subject and its verb (b):

(38) An optional break after subjects (Radanović-Kocić 1988:130)\(^47\)

a. Ovakav potez // čovjek odbacuje.  
   such move man rejects  
   A man should reject such a move.

b. Ovaj njihov paš (//) čuva kuću.  
   this their dog guards house  
   That dog of theirs is guarding the house.

I take the fronted object in (a) to be in a high topic position in the C layer, and therefore followed by an obligatory P break, whereas the initial subject in (b) could also be a topic, and followed by a break, or remain in VP, in which case there’s no break. Significantly, there are no PCs in these sentences, and therefore no phonological motivation for host raising. (See 5.5 for more on the properties of topics.)

\(^{47}\) I’ve inferred the ungrammatical pronunciation */šč/ from Radanović-Kocić’s description.
Zec (1997, 2005) offers more explicit examples of P-phrasing, according to which P-phrases can either separate subjects from their verb (a), or group them (b):

(39) Subjects can share a P-phrase with their verb

a. \{Jēdaľāsta \{ne čini prŏleče\}.  
   one swallow not makes spring  
   A swallow does not a spring make. (Zec 1997:41)

b. \{Pĕtar sĕdı \{u čělu stŏla\}.  
   Petar sits at head table  
   Petar sits at the head of the table. (Zec 1997:43)

Again, the fact that subject and verb can share a P-phrase indicates that the subject is inside the greater VP, and therefore inside the P phrase aligned to its left edge.

There’s also syntactic evidence that not only subjects, but also fronted \textit{wh} words can be fairly low at PF. First, in some multiple \textit{wh} questions, \textit{wh} words occur in any relative order (a,b), while in others they’re ordered by Superiority (c,d):

(40) Superiority in multiple \textit{wh} questions

a. \textbf{Ko koga} voli?  
   \textbf{who whom} loves

b. \textbf{Koga ko} voli?  
   \textbf{whom who} loves

   Who loves whom? (Stjepanović 1999:145)

c. \textbf{Ko koga} voli, taj o njemu i govori.  
   \textbf{who whom} loves that about him and talks

d. *\textbf{Koga ko} voli, taj o njemu i govori.  
   \textbf{whom who} loves that about him and talks

   Everyone talks about the person they love. (Bošković 1997b:88)

Bošković (1997a, 1997b, 2002) proposes that \textit{wh} Superiority effects correlate with the presence of an overt CP projection. In clauses with overt CP, the highest \textit{wh}
word undergoes *wh* movement to the specifier of CP, yielding Superiority. Otherwise, all *whes* adjoin in any order to some lower focus position between VP and CP. In short, *wh* words in simple matrix questions are in some low position below C.\(^{48}\)

Now consider the word order of multiple *whes* with respect to PCs. In simple matrix clauses with PCs, any—but only one—of multiple *whes* precedes the PCs:

(41) Exactly one *wh* word precedes the PCs in multiple *wh* questions

a. Ko *je* šta prodao?
   who AUX what sold

b. Šta *je* ko prodao?
   what AUX who sold

Who sold what? (Bošković 2000:91)

First, the possibility of either order shows that *ko* and šta are adjoined low, rather than high in CP—since, by Bošković’s analysis, *wh* movement to the C layer would yield Superiority. Further, the fact that only one can precede *je*—together with the model of PC configurations argued for above—indicates that the target of *wh* fronting (in the syntax) is below Tense (where I assume *je* to be). Otherwise, both *whes* ought to precede *je*.

I conclude that both *whes* follow *je* in the syntax, and exactly one raises at PF by host raising. I reason further that, if clause-initial *wh* words can be lower than PCs in the syntax, then it isn’t implausible that the syntax also leaves subjects in VP.

Bošković (2000, 2001a) proposes an opposite interpretation. Given that freely ordered *wh* words are low, he concludes that PCs can be equally low, and therefore don’t occupy consistent positions. But I maintain that it’s more plausible that PCs are fixed,

\(^{48}\) Contexts that Bošković identifies as having overt CP, thereby inducing *wh* Superiority, are embedded, long-distance, and *li* questions. To these, Stjepanović (1999) adds questions with multiple sluicing.
and *wh* words mobile. Apart from general arguments for host raising (see 5.2.5), the alternative orders in (41) show that *wh* words are ordered more freely than PCs.

Bošković (1995) offers another argument in favor of multiple PC locations based on their placement with respect to participles. The key data show that adverbs with both manner and sentential readings (here, *pravilno*) can get either reading preceding a participle (*odgovorio*) (a), but only a manner reading following a participle (b):

\[(42) \text{ Participles are below sentential adverbs (Bošković 1995:249)}\]

a. Jovan *je* *pravilno odgovorio* Mariji.
   Jovan **AUX** correctly answered Marija
   sentential: ‘Jovan did the right thing in answering Marija.’
   manner: ‘Jovan gave Marija a correct answer.’

b. *Odgovorio je* *pravilno* Mariji.
   **AUX** correctly Marija
   *sentential: ‘He did the right thing in answering Marija.’
   manner: ‘He gave Marija a correct answer.’

Bošković takes this to indicate not only that participles are below sentential adverbs, but further—since the PC *je* precedes a sentential adverb in (a), but follows a participle in (b)—that *je* occupies different positions in these examples.

Again, I contend that a host raising account is more plausible. By host raising, *je* may be assumed to occupy the same position in both examples. The difference is rather in the location of the participle *odgovorio*, which in (b) moves above *pravilno* in the syntax, accounting for its effect on *pravilno*’s interpretation, but raises above *je* only at PF. Although Bošković argues against such participle movement on syntactic grounds, in a host raising account this isn’t syntactic movement, but PF movement.⁴⁹

⁴⁹ Bošković (1995, 2000, 2001a) offers three other arguments in favor of the claim that PCs can occupy several different positions. The most complex is based on word orders in double participle constructions
I conclude, first, that PCs occupy separate head positions in inflection—except possibly when they follow the verb, in which case it’s likely that PCs and verb form an adjoined head. Second, I take the foregoing discussion, together with other evidence discussed elsewhere in the dissertation, to show that the PCs are consistently followed by a P-phrase edge that corresponds to the left edge of the greater VP. In support of this view, I’ve argued that the VP typically remains intact at PF.

5.2.7 Summary

This concludes the descriptive and theoretical introduction to peninitial clisis. On the descriptive side, I’ve summarized the PCs’ inventory, morphology, cluster orders, and placement in the clause. On the theoretical side, I addressed the connection between the PCs’ syntactic and prosodic properties. To that end, I offered a summary and criticism of accounts of PC placement, and a discussion of the PCs’ syntactic representations.

(1995:255-261), which I won’t try to reproduce here. Another is based on examples of the kind identified by Stjepanović, where pronominal PCs elide with the VP, but auxiliary PCs remain (see 5.2.4):

(i) ?Mi smo mu ga dali, a i vi ste mu ga dali, (takodje).
    we AUX him it gave and and you AUX him it gave too
    We gave it to him, and you did too. (Stjepanović 1997:274-275)

From this, Bošković concludes that pronominal PCs can be VP-internal. However, it seems equally plausible that pronominal PCs can elide with the VP because they form chains with coreferential argument positions in VP, or simply because they form a constituent (AgrOP) with the VP.

Last, Bošković suggests that the fact that finite verbs can serve as li hosts in li questions (a), while participles can’t (b), shows that the need for a PC host can’t drive verb movement:

(ii) a. Ljubi li nju?
    kisses Q her
    Does he kiss her? (Bošković 1995:251)

b. *Poljubio li je nju?
    kissed Q AUX her
    Did he kiss her? (Bošković 1995:251)

But li hosts are determined and constrained in the syntax (see 5.2.3, Franks and King 2000:225, 264-267), so this observation doesn’t bear on where PCs other than li are configured, or how they get their hosts.
From this I take several assumptions that form the basis for the investigation of PC prosody and placement in this chapter. I assume, first, that the PCs are configured in the syntax, occupying individual heads in the inflectional layer of the clause. I assume further that the verb moves through inflection during its derivation, but that the greater VP typically remains intact at PF, unless one or another of its parts raises in marked syntactic or semantic contexts, or to ensure that the PCs are peninitial.

To clarify this last point, I assume that PCs are sometimes reordered at PF to optimize their prosodic representations. Although I’ve argued that reordering happens most plausibly by host raising, this isn’t crucial to the interface analysis. The significance of reordering lies rather in the point that PC placement is influenced by prosodic well-formedness, so that, conversely, PC word order provides evidence for PC prosody.

In the rest of this chapter, I’ll develop and defend an account of PC prosody and placement based on these assumptions.

5.3 Word-level evidence for PC prosody

5.3.1 Introduction

Here, I begin the examination of evidence for the prosodic representations of the peninitial clitics. I start with the word-level phenomena of accent, nuclear length, and future sandhi, leaving until later other informative phenomena concerning prosody and word order at the level of the clause. This is because the word-level data provide more direct evidence for PC prosody, and because the resulting picture of word-level prosody provides a foundation for the clause-level analysis.
The most general conclusion that I take from the word-level analysis is that the PCs, like other clitic types, don’t have just one prosodic representation, but vary in their prosody. Specifically, PCs vary between enclisis and free clisis. I find further that, of these two parses, free clisis seems to be the more typical one.

One purpose in 5.3, then, is to establish this claim, against the standard view that PCs are strictly enclitic. Still, the arguments from word-level phenomena alone aren’t conclusive. A further purpose of this section, therefore, is to lay the groundwork for the phrase-level investigation in 5.4, where these findings find firmer support.

5.3.2 Preliminary evidence from accent

I’ll start by examining what accent can tell us about PC parsing. First, recall that I assume all of the following to be potential prosodic representations for function words:

\[\text{(43) Six function word parses} \]
\[
\begin{align*}
\text{internal proclisis} & \quad \text{(lex)}(\text{fnc lex}) & \text{internal enclisis} & \quad \text{(lex fnc)(lex)} \\
\text{affixal proclisis} & \quad \text{(lex)}(\text{fnc (lex)}) & \text{affixal enclisis} & \quad ((\text{lex}) \text{fnc})(\text{lex}) \\
\text{free clisis} & \quad \text{(lex} \text{fnc (lex))} & \text{promotion} & \quad (\text{lex})(\text{fnc})(\text{lex})
\end{align*}
\]

Of these representations, most can be excluded fairly straightforwardly for PCs. The main difficulty proves to be in selecting between enclitic and free clitic analyses.

Although it may seem unnecessary, I’ll first eliminate the possibility that PCs are proclitic. First, in contrast with prepositions, PCs aren’t attested after pauses, but are attested prepausally, showing that here, at least, they can’t be proclitic:
(44) Prepausal PCs (received)

Sama je. ‘(She)’s alone’ ... i nêstajê ih. ‘and they fade away’
Žuri se. ‘(She) hurries’ ... i nê vidê se. ‘and aren’t seen’
... i dájê mu. ‘and gives to him’ ... i nê miê se. ‘and doesn’t move’

Actually, while these examples show that prepausal PC placement is possible, in fact PCs are generally avoided utterance-finally (see 5.4.2). But in these short clauses this is the only possibility. With respect to PC placement, the ne-plus-verb unit counts as one word, and i is treated as extracausal (see 5.2.6, 5.5.2).

Even when PCs aren’t followed by explicit pauses, we may conclude that they’re never internal proclitics, because they never get accent transfer from following words, whether verbs (viêeli, zna), nouns (dan), or adjectives (bolje):

(45) PCs never receive accent transfer (Piva-Drobnjak)

// kad su (viêeli) štâ more bit. ‘when they saw what must be’
Ôno ti je vitmija, kojê se (znê) ... ‘that’s the clever girl who knows’
Úzôchešnjê će ti (dân) dånas dôêi! ‘You’ll have an unlucky day today.’
Bîlo bi ti (bôlje) // ‘it would be better for you’

Even preceding underlyingly toneless words that transfer accent to the first syllable of a proclitic, accent doesn’t transfer as far as a preceding PC:

(46) Accent from underlyingly toneless words doesn’t transfer to PCs

Piva-Drobnjak

// da ti se (nê nagnê) ... ‘so it won’t lean’
Úzôche mu (nê bîlo) // ‘it wasn’t bad for him’
Ôriz ñemo (nê mêsô) // ‘we’ll (have) rice with the meat’
received
Ništa mi (nê reêe) // ‘nothing to me said’
// da ga (nê bi) ništa vêzalo // ‘that he had no attachments’
Glêdâ je (ò oêi) // ‘looks her in the eyes’
Just as I found with complementizers (see 4.5.5), I’ll conclude that this reveals the presence of a P-phrase edge following the PCs, which blocks proclisis. Naturally, this conclusion is incompatible with an enclitic analysis. If, on the other hand, we find that PCs are typically free, then only an intervening P-phrase edge can block proclisis to a following word in a dialect like Piva-Drobnjak, where syntactically free prepositions regularly procliticize.50

Next, concerning affixal clisis, the analysis of proclitic prosody all but excludes this as a potential parse. First, the ranking $\text{NRC}(w) >> \text{L}(\text{lex},w)$, common across dialects, blocks affixal proclisis of ne (4.3.3). Second, the analysis of prepositions indicated that if a word isn’t an internal proclitic, then it isn’t an affixal proclitic either (4.4.5, 4.4.6). While affixal enclisis remains a possibility at this point, it will be decidedly ruled out by an argument from rightward tone shift (5.3.3).

Last, since PCs are never accented, we may conclude that they never promote. This leaves enclisis and free clisis as potential representations for PCs.

We may now consider the most common argument for enclisis. It’s claimed that PCs must be preceded in their clause by at least one stressed word. This, in turn, is argued to show that PCs are enclitic (Browne 1974, Inkelas and Zec 1988, Radanović-Kocić 1988, Zec and Inkelas 1990, Halpern 1992, Franks and King 2000).

50 Actually, there’s another possible explanation of what blocks PC proclisis—even under a free clitic analysis—which is that PCs resist stress because they’re deaccented.
Zec and Inkelas exemplify this claim with the pair of sentences in (47). They observe that when the introducer ali hosts the PC nam, then ali is necessarily stressed (a). Conversely, ali is unstressed only when it doesn’t host PCs (b):

(47) By some accounts, PC hosts must be stressed
a. Mi smo zvonili, ali nam niko nije otvorio.
we AUX rang but us nobody not+AUX opened
We rang but nobody opened the door for us. (Zec and Inkelas 1990:368)

In fact, while this may hold for some varieties, other evidence contradicts this claim. Progovac reports the opposite intuition for this example:

To my judgment (and to the judgments of some other speakers I have consulted, including Vesna Radanović-Kocić), in the unmarked (unaccented) form, ali is the most natural host for clitics… The contrast between accented and unaccented ali actually works in the opposite direction for me. In other words, a clitic is less natural after the emphasized ali (Progovac 1996:416, n6)

Progovac offers the following examples to illustrate these observations:

(48) By other accounts, PCs are natural after unstressed introducers
a. Mi smo zvonili, 'ali nam niko nije otvorio.
we AUX rang but us nobody not+AUX opened
We rang, but no one opened the door for us. (Progovac 1996:416, n6)

Progovac’s counterclaim is echoed by data from the received and Piva-Drobnjak corpora. Take this pair of examples from the received corpus, where the PC se follows stressed da (b), versus unstressed da (b):
Prosodic word-internal and free _se_ (received)

a. // i čitā (dā _se_) zabrānjūjē pūštati svīnjje po ūlīcama.
   // and reads C _RFL_ forbids let pigs on streets
   // and he reads that it’s forbidden to let pigs onto the streets. (MS:45)

b. // i nāvlaš ĭūpajūći, ūdarajūći, da _se_ čūjū ōdjēći, ūdarci //
   // and purposefully banging hitting C _RFL_ hear echoes blows //
   // and purposefully banging, hitting, so that echoes, blows are heard // (MS:123)

This illustrates some of the variation in introducer promotion preceding PCs, of which more in 5.5.2. Important here is that in (b), _da_ and _se_ are unstressed following a pause. They are therefore neither promoted nor enclitic, but free.

Example (a), on the other hand, illustrates what I call _co-promotion_, where a light introducer promotes with a following PC. This shows that (dā _se_) represents a single, non-recursive p-word, because it must accommodate a bimoraic foot in order to overcome the threshold on promotion imposed by _BIN(ft)_ (see 4.4.6). In co-promotion, then, PCs are enclitic—if we may say ‘enclitic’, recognizing that the p-word within which enclisis obtains depends partly on the presence of the enclitic itself.

The significance of co-promotion for the present point, however, is that it’s inconsistent. In Piva-Drobnjak, moreover, introducers rarely promote, either alone or by co-promotion with a following PC:

Co-promotion is rarely attested in Piva-Drobnjak

a. Slŏmna _im je_ planina, _da te_ Bŏg mĭli săčūvă.
   rugged them AUX mountain C _you_ God dear protects
   Their mountain is rugged and difficult, dear God protect you. (V:219)

b. Nātkapi mălo ŏ(d) ȕvera, _da ti _ se  nē nagnē sŏjeno nă jug.
   pile up little from north C _you RFL_ not leans hay on south
   Pile it up a little on the north, so your hay won’t lean to the south. (V:209)
Here *da* and PCs are unstressed after a pause, showing that they’re free.

The picture that emerges, then, is that PCs vary between enclisis and free clisis, with the relative likelihoods of these parses varying by dialect. Yet interestingly, PC placement is essentially the same across dialects. I therefore conclude by the end of this chapter that *PC placement isn’t motivated by enclisis*.

However, this still fails to provide a complete picture of PC prosody, because the possibility of free clisis now casts many putative cases of enclisis into doubt. Whereas a PC must be p-word-internal to co-promote with a light introducer (*dâ se*), what are we to conclude when PCs follow independently accentogenic words?

(51)  Peninitial clitics following independently accented words (received)

a. Rûke *su im* düge //
   arms AUX them long //
   Their arms are long // (MS:112)

b. Pojávio *si se* medu nâmâ //
   appeared AUX RFL among us //
   You appeared among us // (MS:113)

c. Mírni *su zâtoni i lûke* //
   calm AUX bays and harbors //
   Calm are the bays and harbors // (MS:117)

Since nouns, verbs, and adjectives (*ruke, pojavio, mirni*) determine p-words on their own, accent alone provides no clue as to whether following PCs are enclitic or free.

An argument in favor of enclisis in such cases is that, though PCs can co-promote with preceding introducers, multimoraic PC sequences never promote on their own, even when they include heavy PCs (*ćemo, ěte, bismo, biste*) (Zec 2005:94):
Peninitial clitic sequences never promote alone

a. Bârem čemo se k pólnočki sânjkati.
   at least FUT RFL to midnight sleigh-ride
   We’ll sleigh-ride at least until midnight. (MS:68)

b. // i ôndä iza kâpijë čêkä kâd ē joj se sinčić vrátiti…
   // and then behind gate waits when FUT her RFL son return…
   // and then she waits behind the gate for her son to return… (MS:125)

If such PC sequences are free, we might expect them sometimes to promote by size, as prepositions and introducers do. By the assumption that promotion by size is motivated in order to avoid parsing function words by P-phrase, the PCs’ failure to promote suggests that they’re enclitic (4.4.6). I’ll return to this and other phrase-level evidence for PC prosody in 5.4.\textsuperscript{51}

So far, then, the signs from accent are fairly clear that PCs can be enclitic or free. In some dialects, introducers regularly co-promote with PCs, and PCs always follow stressed words. In other dialects, introducers and PCs don’t necessarily co-promote, and PCs don’t always follow stressed words. Other accentual data are impossible to interpret at this point, such as the absence of PC promotion, and when PCs follow accentogenic words. I therefore proceed to consider some additional arguments from accent, as well as from some other word-level phenomena.

5.3.3 Evidence from rightward tone shift

So far in 5.3, I’ve argued that evidence from accent shows that PCs are sometimes enclitic, and sometimes free, but fails to distinguish these analyses when PCs follow

\textsuperscript{51} Actually, in the received corpus, where these examples are from, prepositions don’t promote by size (see 4.4.3), so we might not expect PCs to promote by size there either. However, even in dialects where preposition and introducer promotion are regular, it remains the case that PCs never promote.
accentogenic words. Here I’ll offer an argument in favor of the free clitic analysis, based on the phenomenon of rightward tone shift (see 2.3.6, 3.3.6, 3.3.7).

Recall that rightward tone shift accounts for a difference in the accentuation of toneful stems with final light versus final heavy syllables. While light-final stems are consistently accented on the penult of the stem (a), accent in heavy-final stems varies according to whether they bear an inflectional ending (b):

(53) Heavy-final stems with an ending exhibit rightward tone shift
a. jělen jělen-a ‘deer’ b. králj králj-a ‘king’
kukůruz kukůruz-a ‘corn’ júnák júnák-a ‘hero’

More specifically, heavy-final stems get stem-final rising accent in the presence of an ending (králja, júnaka). According to my analysis, tone spreads in order to align the moraic head of tone to the right edge of the stem, but is only possible when there’s a following syllable—in the same prosodic word—to which tone can spread.

Importantly, rightward tone shift is both phonologically motivated and regular. It can therefore serve as a test for PC enclisis. If a PC is enclitic on a bare, heavy-final stem, then it adds a syllable to the stem, and ought to condition rightward shift.

The examples in (54) apply this test to data from the received and Piva-Drobnjak corpora. These show that PCs (je, češ) don’t condition rightward shift following heavy-final stems (věslár, pūt), indicating that these PCs aren’t enclitic, but free:

(54) No rightward tone shift with a following PC
a. // věslár je sredovečan // (received)
   // oarsman AUX middle-aged //
   // the oarsman is middle-aged // (MS:52)
b. // svä̆k̄i pūt je ćonā ćostā młăkà // (received)
   // every time AUX she remained irresolute //
   // every time she remained irresolute // (MS:81)

c. Jō̆š koi pūt čĕš sĕ tī zapŭktat(i) uz ovū strānu. (Piva-Drobnjak)
   still which way FUT RFL you get windĕd along this side
   Regardless of which way (you go), you’ll get windĕd on this side. (V:201)

If je and češ were internal enclitics, thereby adding a syllable to their host, we would then
expect their hosts to exhibit stem-final rising accent (*veslār je, *pūt je).

Let us, however, reconsider the possibility that PCs are affixal enclitics following
accentogenic words. In that case, the failure of rightward shift in these sequences could
be attributed to the presence of a p-word boundary between host and clitic, across which
tone can’t spread. A problem for this alternative comes from its implementation. By our
current assumptions, this analysis would require at least the following ranking:

(55) A problematic ranking for affixal enclisis

\[
\begin{array}{c|c|c|c}
\text{veslār}_{N} je & \text{EXH(P,s)} & \text{R(lex,w)} & \text{NRC(w)} \\
\hline
\text{a.} & (vėslār) je & *! & \text{R(lex,w)} \\
\text{b.} & (veslār } je) & & *! \\
\text{c.} & ((vėslār) je) & & \\
\end{array}
\]

Although R(lex,w) hasn’t yet been ranked in the interface constraint account of
cletic prosody, I’ve proposed that NRC(w) outranks EXH(P,s) in at least two varieties—
namely, the received and modern standards (see 4.4.6). That is, the affixal enclitic
analysis involves a ranking paradox, unless we posit additional constraints.

I therefore conclude that the evidence from rightward tone shift provides a strong
argument that PCs are typically free clitics.
5.3.4 Evidence from future sandhi

We find evidence for PC parsing in non-accentual phenomena as well. One such phenomenon is what I call future sandhi, where a future clitic contracts with a preceding verb. Taken together with syntactic evidence of V-to-I adjunction, this indicates that PCs are always syntactically adjoined and enclitic on preceding verbs, but fails to shed light on whether PCs are enclitic or free after nouns and adjectives.

One way of forming the future in BCS is with a future auxiliary, either strong or peninitial, plus an infinitival main verb. When the verb occurs later in the clause than the auxiliary, it retains its full infinitival ending (-ti) (a), but when it precedes a future PC, the verb contracts with the clitic, losing its final vowel (b):

(56) Future sandhi
   a. Zbog niskih temperatura koje će potrajati i sljedećih nekoliko dana…
      due to low temperatures which FUT continue and next few days…
      Due to the low temperatures that will continue for the next few days… (Hina)
   b. Smanjena isporuka plina tim potrošačima potrajat će do zatopljenja.
      reduced delivery gas those consumers continue FUT to warming
      Reduced gas delivery to those consumers will continue until it warms up. (Hina)

The data in (57) summarize future sandhi across verb shapes. First, verb and clitic are generally written separately in the western part of the BCS-speaking area (W), but as one word in the east (E), though this doesn’t reflect a pronunciation difference (see 1.2). Further, while infinitives in -ti merely contract (a), those in -sti contract and assimilate in palatality to the clitic (b), while those in -ći are unaffected (c):
(57) Future sandhi (Kordić, J corpus)

<table>
<thead>
<tr>
<th>infinitive</th>
<th>plus PC (W)</th>
<th>plus PC (E)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. imati</td>
<td>imat če</td>
<td>imače</td>
</tr>
<tr>
<td>pitati</td>
<td>pitat če</td>
<td>pitače</td>
</tr>
<tr>
<td>razgovarati</td>
<td>razgovarat če</td>
<td>razgovarače</td>
</tr>
<tr>
<td>rasti</td>
<td>rast če</td>
<td>rašče</td>
</tr>
<tr>
<td>susresti</td>
<td>susrest če</td>
<td>susrešče</td>
</tr>
<tr>
<td>propasti</td>
<td>propast če</td>
<td>propašče</td>
</tr>
<tr>
<td>c. reći</td>
<td>reći če</td>
<td>reči če</td>
</tr>
<tr>
<td>otići</td>
<td>otići če</td>
<td>otiči če</td>
</tr>
<tr>
<td>moći</td>
<td>moći če</td>
<td>moči če</td>
</tr>
</tbody>
</table>

Significantly, only verbs undergo future sandhi. This minimal pair shows that while the verb dati contracts with a future PC (a), the similar noun mati doesn’t (b):

(58) Future sandhi happens only with verbs

a. Dat če im mati dar.
   give FUT them mother gift
   Mother will give them a gift. (AB)

b. Mati če im dati dar.
   mother FUT them give gift
   Mother will give them a gift. (AB)

Contraction therefore evinces a close phonological or morphological relationship, or both, between verb and clitic. In fact, some have proposed that verbs that undergo future sandhi aren’t infinitives, but bare stems, and that the following auxiliary is an affix, as opposed to a clitic (Tomić 1996, Progovac 2005).

By contrast, I contend that the auxiliary is a syntactically free prosodic clitic. One argument for this is that the -t- of the infinitival ending is retained in the western spelling, suggesting that it’s psychologically present. Another is that infinitives in -ći don’t lose
their ending at all. Last, the more general phenomenon of V-to-I adjunction, which is supported by independent facts, provides an alternative account of future sandhi.

As I discussed in 5.2.6, I follow several other analyses in assuming that the PCs overtly occupy high inflectional heads, that the verb successively adjoins to them during its derivation, overtly or covertly, and that verb-PC orders reflect overt V-to-I adjunction. I therefore propose that future sandhi, like *ne* and complementizer proclisis (see 4.3.3, 4.5.5), results from verb adjunction to a syntactically free function word.

This is one way that V-to-I adjunction might proceed, with copy selection ensuring the right linear ordering of PCs (see 5.2.2, 5.2.5):

(59) Future sandhi reflects V-to-I adjunction

`\[
\begin{array}{c}
\text{IP} \\
\text{I} \\
\text{I} \\
\text{IP} \\
\text{I} \\
\text{I} \\
\text{VP} \\
\text{V} \\
\text{I} \\
\text{\textit{ce}} \\
\text{I} \\
\text{I} \\
\text{NP} \\
\text{V'} \\
\text{V} \\
\text{NP} \\
\text{VP} \\
\text{\textit{detti}} \\
\text{\textit{datti}} \\
\text{\textit{datti}} \\
\text{\textit{datti}} \\
\text{\textit{datti}} \\
\text{\textit{dar}} \\
\end{array}
\]

‘Mother will give them a gift.’

As with other cases of clisis by adjunction, I assume that adjunction of a lexical to a functional head endows the complex X° with lexical status. As a result, free clisis (a) is harmonically bounded by internal enclisis (b), ensuring that the complex head is parsed either by internal enclisis (b) or by affixal enclisis (c):
Future sandhi results from V-to-I adjunction

\[
\begin{array}{|c|c|c|c|}
\hline
\text{[da-ti]_V će} & \text{NRC(w)} & \text{R(lex,w)} & \text{WRAP(lex,w)} & \text{EXH(P,s)} \\
\hline
\text{(dat) će} & \ast & \ast & \ast & \ast \\
\text{(dat će)} & \ast & \ast & \ast & \ast \\
\text{((dat) će)} & \ast & \ast & \ast & \ast \\
\hline
\end{array}
\]

Thus, in contrast to PCs that follow non-verbs (e.g. *veslar je ‘oarsman AUX’; see 5.3.3), PC enclisis to a preceding verb is assured by the constraint set.

However, the question remains whether adjunction results in internal or affixal enclisis. Unlike other clitics to which the verb adjoins, PCs don’t precede the verb, but follow it. As a result, neither accent transfer nor the analysis of proclisis distinguishes among analyses of post-verbal PC parsing. As for rightward tone shift, verbs of the right accentuation for this test are few, and I have no information on their accentuation under sandhi.\(^{52}\)

I’ll adopt the internal enclitic analysis based on several supporting, but non-decisive arguments. First, no such sandhi is observed across undoubted p-word edges. Second, there’s clear evidence from non-standard dialects that PCs are internal enclitics on verbs (see 5.3.6).

Last, it’s only the admission of L(lex,w) and R(lex,w) as different constraints that makes affixal enclisis a possibility. In the absence of any positive evidence that these are differently ranked, I surmise that R(lex,w) is similarly ranked below NRC(w) (see 4.4.6), favoring internal enclisis (tableau not shown).

All this entails that not just future auxiliaries, but all PCs, are internal enclitics when they follow verbs. This is an significant result, and bears on the interpretation of

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\(^{52}\) For example, the verbs péti ‘lift’ and kléti–kléti ‘curse’, when undergoing future sandhi *(pet će, klet će)*, are expected to retain rising accent on their stem-final syllable only if the future PC is an internal clitic.
other evidence for PC prosody in non-standard dialects (5.3.6). On the other hand, the
claim that enclisis reflects V-to-I adjunction means that future sandhi is uninformative
regarding whether PCs are enclitic on preceding nouns and adjectives.

5.3.5 Evidence from nuclear length

Another point that seems at first to favor an enclitic analysis for PCs is that some
dialects support a length contrast in the future auxiliaries ćē, ćē ‘FUT.3SG, 3PL’. However,
an examination of the conditions on length across dialects undermines the significance of
this fact, showing that it doesn’t distinguish between free and enclitic analyses.

One PC, the third-person-plural future auxiliary ćē, is attested with a long vowel
in some dialects, including Piva-Drobnjak (a) and the received standard (b,c):

(61) The third person plural future auxiliary clitic (Piva-Drobnjak, received)

a. Dâj ūm šta bilo, svē ćē poriljati.
give them whatever all FUT devour
Whatever you give them, they’ll devour everything. (V:213)

b. Na pútu uz prúgu trácnice ćē me āvijek privláciti //
on way by train line tracks FUT me always attract //
On the path by the railroad, the tracks will always fascinate me // (MM:13)

c. Nego lâzile bi, kao āvēk prēd njōm, štā ćē da kâžū //
rather crept CND like always before her what FUT C say //
Rather, they’d creep like always around her, (wondering) what to say // (MS:124)

Recall that in the Vukovian standard, long nuclei are possible only in a word’s
accented syllable and the syllables following it, while pre-accentual nuclei are only short
(see 3.4.2). The fact that ćē contains a long nucleus, then, suggests that it’s enclitic on a
preceding, accented word.
On the other hand, it’s doubtful that the modern standards maintain length in čē. While Benson and Browne report this clitic as čē, Kordić, who gives more weight to modern usage, gives it as čē. Still, its attestation in more conservative varieties, at least, requires some explanation.

In the received corpus, čē is unique among clitics of all categories in containing a long nucleus. Prepositions, whether promoted or clitic, contain only short nuclei. While some introducers and full pronouns exhibit length when they promote, these otherwise contain only short nuclei.53

Take these examples of the pronoun to ‘that’ and introducer pa ‘and, so, then’, which, though heavy when they promote, are light when clitic:54

(62) Apart from čē, clitics contain only short nuclei in the received corpus

Kǎkav bi tǒ Bòžič bǐo… ‘what kind of Christmas would it be’
Snážni su to ljūdi širôkǐh plêcā… ‘they are strong people, broad of shoulder’
// pâ poštō nije nikoga imala // ‘and since she had no one’
Pa tāj njën plâč bīo je tâkō dúbok // ‘and her weeping was so profound’

Why should čē be different, if not because it’s enclitic? A possibility is that its length is protected in order to maintain a contrast with the third-person-singular form čē, whose vowel is short. A look at the Vukovian forms of the future auxiliary shows that they distinguish number in the third person only by accent and length (see 5.2.3):

---

53 In the ekavian variant of the received standard, there are at least two words with long nuclei that might be considered prepositions: prē ‘before’, pôslē ‘after’ (compare ijekavian prije, poslije). However, I’ve argued that these are more likely adverbs than prepositions. See 4.4.4.

54 Non-peninitial pronouns are almost always accented in the received corpus, the only exceptions being some cases of the deictics to, ono ‘that’. These are probably instances of what Progovac (1998c) analyzes as ‘event pronominals’, representing not entities, but events, and having no natural English translation. Introducers, by contrast, are frequently unaccented in the received corpus. See 4.5.2.
I therefore propose that in the grammar of the received corpus, length in ĉē is a prescriptive exception. This course is supported by the observations that this variety otherwise completely lacks length in clitics, that such an explanation is also required for preposition proclisis (4.4.2, 4.4.6), and that there’s a plausible additional motivation for such exceptionality, namely to maintain the contrast with singular ĉĕ. In formal terms, I assume that length in ĉē is protected by a special faithfulness constraint—presumably MAX(mora)_1—indexed to the Vukovian stratum of the vocabulary.

In short, ĉē runs counter to the regular phonology of the received corpus, and doesn’t support an enclitic analysis of PCs for that variety.

In Piva-Drobnjak, by contrast, length in ĉē isn’t exceptional. Rather, we find long nuclei in many other unaccented words as well (here, kō, dvā, tī, ovō, pā, tā):

(64) Prosodic word-external long nuclei in Piva-Drobnjak

a. SlȉbȄȄa:ni su kō dvā bliznîka.
   similar AUX like two twins
   They’re as similar as two twins. (V:196)

   resume you this again even though AUX it abandoned
   You’ll start this again, even though you abandoned it. (V:215)

c. Mišljàk da vȑšem śùtra, pā me prȅgrebe tā nèsreća.
   thought C thresh tomorrow then me prevents that misfortune
   I thought to thresh tomorrow, but that misfortune prevented me. (V:214)

We may assume that these words are free clitics, both because they’re syntactically free, and because they’re attested even after pauses, e.g. pa in (c).
Further, while some clitics consistently contain long nuclei (e.g. kô, tâ, dvâ), we find other clitics that exhibit long or short nuclei more or less at random. Even some PCs exhibit such variation, exemplified here with *im, ig, se*:  

(65) Some PCs are variably attested with long vowels in Piva-Drobnjak

Rêkla *im se* dêvôjka // ‘the girl told them’
Nê znâm *im ništa ţdavo.* ‘I don’t know anything bad about them.’
// pâ *ig* svê davôlisô. ‘and he totally ruined it’
// trêbalo *bi ig* ţ jamu bâčit // ‘they should be chucked in a hole’
// nê more *mu se* ništa šärkriti. ‘one need not hide anything from him’
Lâko jôj *se* progûniš // ‘you conduct yourself easily with her’

At least with respect to *im* and *ig*, Vuković finds no rule to this variation (1940:84).

We find similar variation with the future auxiliary. The context in this example shows that *ćê*, though plural in form, is singular:

(66) Napamb*FAaȄt* *ćê* dôči nákâ kômênsîja.
I tell you FUT come that kind payment in kind
I tell you there will come such a reckoning. (V:208)

Moreover, the words *napamet, ěe* are unaccented after a break, showing that they’re free clitics, yet both contain long nuclei. I conclude that, in contrast to the received standard, free clitics in the Piva-Drobnjak dialect can have both long and short nuclei.

At this point, then, we may also conclude that length on *ćê* can’t tell us whether PCs are free or enclitic. In the received corpus, *ćê* is probably a prescriptive exception,

---

55 In Piva-Drobnjak, one finds both *ih, ig* corresponding to standard *ih* ‘them.ACC’.
56 Sic: ‘it’. Here *ig* refers to the notionally singular, but morphologically plural *grablje* ‘rake’.
57 The vowel of the PC *joj* ‘her.DAT’ is always long in the Piva-Drobnjak data (six occurrences).
58 Sic: *napamet* ‘I tell you’. Vuković (1940:208): *‘nápamêt, adv., kako kažu, kako pričaju’*. The lack of accent on *napamet* is probably accurate, rather than a typographical error. It’s consistent with one other occurrence of unaccented *napamet*, as well as with other discourse adverbs in the Piva-Drobnjak data, which are often unaccented, e.g. *jâmîfm – jámîfm* ‘it seems to me’, *čudo – čûdo* ‘why?’.
and in Piva-Drobnjak, length is contrastive both inside and outside prosodic words. In short, the information from length is inconclusive to the question at hand.

However, before ending this section, I’ll say a little more about length conditions in Piva-Drobnjak, in order to evaluate the consequences for the account of the licensing and neutralization of nuclear length that I proposed in chapter 3.

First, length in Piva-Drobnjak isn’t completely unrestricted. Inside prosodic words, we observe the same pre-accentual neutralization as in Vukovian. These data on the prefixes raz- (a) and na- (b) show that in accented and post-accentual syllables their vowels are usually long, but in pre-accentual syllables are only short:

(67) Length neutralization in Piva-Drobnjak

<table>
<thead>
<tr>
<th>accented and post-accentual</th>
<th>pre-accentual</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. răstrţan</td>
<td>‘scattered’</td>
</tr>
<tr>
<td>răzloţan</td>
<td>‘reasonable’</td>
</tr>
<tr>
<td>nă răzgovŏr</td>
<td>‘in conversation’</td>
</tr>
<tr>
<td>b. năgrdan</td>
<td>‘big, ugly (MASC)’</td>
</tr>
<tr>
<td>năgrdĕ</td>
<td>‘disfigured creature’</td>
</tr>
<tr>
<td>răzdiţeli</td>
<td>‘divided up’</td>
</tr>
<tr>
<td>răzmloţila</td>
<td>‘multiplied’</td>
</tr>
<tr>
<td>năgrdijă</td>
<td>‘bigger, uglier (FEM)’</td>
</tr>
</tbody>
</table>

The distribution of length in non-alternating forms, too, shows that Piva-Drobnjak adheres to the Vukovian length condition. While length is common in post-accentual syllables, it’s unattested in (p-word-internal) pre-accentual syllables.

In other words, the Piva-Drobnjak and received varieties impose the same conditions on length inside prosodic words, but only Piva-Drobnjak maintains length contrasts outside prosodic words too. How then are we to understand length conditions in Piva-Drobnjak in terms of the formal analysis of nuclear length?

---

I argued in 3.4, based on a comparison of length conditions in Vukovian and Belgrade varieties, that pre-accentual nuclei are neutralized to short in order to optimize leftward alignment of the head foot. In this respect, Piva-Drobnjak is identical to these other varieties, and supports the same account. Moreover, length in free clitics is irrelevant to head foot alignment. Since they’re parsed by P-phrase, their long nuclei can have no effect on the alignment of word-internal feet.

I propose, rather, that the fate of long nuclei in free clitics is decided by the same principles that were proposed to apply to post-accentual heavy nuclei. Specifically, I claimed that dialectal differences in length conditions consist in whether unstressed heavies are avoided by shortening or by non-syllabification—which depends, in turn, on the ranking of MAX(mora) with Exhaustivity constraints (see 3.4.5, 3.4.6).

Under this approach, the fact that Piva-Drobnjak maintains length contrasts in free clitics means that it avoids heavy unstressed syllables by selectively failing to syllabify some moras, parsing them instead by the next higher prosodic constituent, which in this case is P-phrase. The crucially violated constraint, then, is EXH(P,m):

(68) In Piva-Drobnjak, length in free clitics is contrastive

<table>
<thead>
<tr>
<th></th>
<th>WSP</th>
<th>MAX(mora)</th>
<th>EXP(P,m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. ( \text{pā me pregrebe}_V ) → ( \text{pā }_\text{me.}(\text{prē.gre.be.}) )</td>
<td></td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>b. ( \text{pā }_\text{me.}(\text{prē.gre.be.}) )</td>
<td></td>
<td>*!</td>
<td></td>
</tr>
<tr>
<td>c. ( \text{pā }_\text{me.}(\text{prē.gre.be.}) )</td>
<td>*!</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

‘but prevented me’

By contrast, the received corpus evinces the reverse ranking of MAX(mora) and EXH(P,m), by its neutralization of length in free clitics:
In the received corpus, length in free clitics is neutralized\(^{60}\)

<table>
<thead>
<tr>
<th>pā tāj njēn plač(_{N})</th>
<th>WSP</th>
<th>Exp(P,m)</th>
<th>Max(mora)</th>
</tr>
</thead>
<tbody>
<tr>
<td>.pā.<em>(tāj.)(njēn.)(plač.</em>)</td>
<td>**!</td>
<td></td>
<td></td>
</tr>
<tr>
<td>.pā <em>(tāj.)(njēn.)(plač.</em>)</td>
<td></td>
<td>*</td>
<td></td>
</tr>
</tbody>
</table>

‘and her weeping’

This completes the account of nuclear length that was begun in 3.4. I’ve claimed that dialectal differences in length contrasts reflect different rankings of Exhaustivity constraints, with more extensive contrasts resulting from lower rankings of Exhaustivity with respect to Max(mora). This brings the number of Exhaustivity constraints involved in the overall analysis to four: Exh(w,s), Exh(w,m), Exh(P,s), and Exh(P,m).

I argued that this approach to variation in length conditions is to be preferred to the alternative proposal that length is licensed only in feet, as that involves a poorly motivated constraint, as well as less consistent footing across dialects (see 3.4.5). The present approach, by contrast, involves minimal rerankings of fairly fundamental constraints provided by the framework: WSP, Max, and Exhaustivity.

Yet another approach is to suppose that Piva-Drobnjak permits length on free clitics because syllable weight is invisible or irrelevant at the level of P-phrase, so that heavy syllables parsed directly by P-phrase don’t violate WSP. However, we would then have no explanation for why the received standard neutralizes length in free clitics.\(^{61}\)

The result of the analysis of nuclear length for the investigation of PC prosody is a well supported criterion for the significance of length in prosodic clitics. By this

\(^{60}\) Deictics (tāj) and possessive pronouns (njēn) regularly promote in the received corpus. I don’t attempt to account for this, though it may be connected to the promotion of full pronouns. See 5.2.3 for discussion.

\(^{61}\) See Ito and Mester (1992:32-33) regarding the proposal that weight distinctions are visible only one or two steps up the Prosodic Hierarchy—for example, bimoraic syllables are heavy with respect to feet, but not with respect to prosodic words.
analysis, length in čē doesn’t bear on whether čē is prosodic word-internal, and therefore favors neither an enclitic nor a free clitic analysis of PC prosody.

5.3.6 Enclisis in non-standard dialects

As we’ve seen, there’s little positive evidence at the level of the word for either an enclitic or a free clitic analysis. Before concluding the word-level investigation, therefore, I’ll consider some data from non-standard dialects that fairly clearly support an enclitic analysis. However, the fact the most of these data involve verbs means that they add little to what has already been learned from phenomena in the standards.

One pattern evincing PC enclisis is reported by Peco for the Šumadija-Vojvodina dialect zone of northern Serbia (1971:154-155). In this pattern, verbs with stem-final rising accent, even when pronounced without inflectional endings, nevertheless retain their rising accent when followed by a PC:

(70) PCs share tone with a preceding verb (Šumadija-Vojvodina)\(^{62}\)

\begin{align*}
\text{okrēn se} & \quad \text{‘turn!’} \\
\text{vrāt se} & \quad \text{‘return!’} \\
\text{jāv se} & \quad \text{‘report!’} \\
\text{kāž mi} & \quad \text{‘tell me!’} \\
\text{kāž mu} & \quad \text{‘tell him!’}
\end{align*}

If, as I’ve claimed, rising accent represents tone linked across both syllables of a single foot, this shows that the verb’s final syllable shares a foot with the PC, and that they therefore share the same prosodic word. That is, these PCs are internal enclitics.

Peco reports another phenomenon from Šumadija-Vojvodina, but particular to the Srem dialect, that’s sensitive to PCs (1971:156). Here, a general loss of length in final

\(^{62}\) These glosses are mine, and are tentative, because these verbs lack their usual inflectional endings.
syllables is reversed preceding PCs. This lengthening is productive, not only protecting underlying length (a), but also creating length on nuclei that are otherwise short (b):

(71) PCs cause lengthening of preceding nuclei (Srem)\textsuperscript{63}

\begin{tabular}{l|l|l|l}
 & Vukovian & Srem & \\
\hline
a. zëmljë & zëmljë & zëmljë je & ‘land (GEN) AUX’ \\
držį & †držį & držį se & ‘behaves, keeps’ \\
pozòvû & †pozòvû & pozòvû me & ‘(they) call me’ \\
b. sèlo & †sèlo & sèlô je & ‘village AUX’ \\
sramôta & †sramôta & sramôtä je & ‘shame AUX’ \\
ùzmi & †ùzmi & úzmî ga & ‘Take it!’ \\
\end{tabular}

Since shortening apparently applies to prosodic word-final syllables, the blocking of shortening on a syllable indicates that a following PC is an internal enclitic.

Zec (1993:398), citing Ćupić (1977:205, 210), reports an alternation found in the Bjelopavljić dialect, where the Neo-Štokavian accent shift is incomplete (see 2.2.5). In this dialect, falling accent remains unshifted when medial (nârôda), shifting leftward only in order to avoid being final (*nârôd > národ). Relevant here is that word-final accent is prevented from shifting if followed by a PC (b,c) (glosses are Zec’s):

(72) PCs prevent word-final accent from shifting leftward (Bjelopavljić)

\begin{tabular}{l|l}
a. národ & ‘people (NOM.SG)’ \\
nârôda, nârôdimâ & ‘people (GEN.SG, DAT.PL)’ \\
b. pa je bílo & ‘and there was’ \\
bîlô je & ‘there was…’ \\
c. svi da ste mi dôbro dôšli & ‘welcome all of you’ \\
dôbrò mi dôšli & ‘welcome to me’ \\
\end{tabular}

\textsuperscript{63}Daggered (†) examples aren’t furnished by Peco, but I infer them from his description. Glosses are mine.
Thus, whereas accent shifts leftward in bišo, dobrō, it remains unshifted when these words host PCs (bilō je, dobrō mi) indicating that they share a prosodic word.

These data also indicate that in Bjelopavljić, leftward tone spread is compelled not by head foot alignment, but by foot binarity, to avoid a final light foot: *do(brō), (dobre). Interestingly, Bjelopavljić also lacks pre-accentual shortening (narōda, bilō), another phenomenon that I attributed to head foot alignment (see 3.4.3). That two effects of the same constraint are attested in Vukovian, but not Bjelopavljić, is readily captured by constraint reranking, and may be taken as additional support for that account.

More important for our present purpose, however, is what the clear attestation of enclisis in these dialects indicates regarding PC prosody in the standards. The traditional conclusion would be that these data only make plainer that which is the case across dialects, that PCs are enclitic. Another possibility, more in line with my findings in this chapter, is that such clear enclisis calls attention to the absence of similar evidence in standard varieties, supporting a free clitic analysis for the standards.

I advance a third possibility: that the examples of enclisis in (70) through (72) are all cases of clisis by adjunction to the predicate of the clause. By this analysis, these represent the same phenomenon as PC enclisis to preceding verbs, which I’ve proposed is regular across the standards (see 5.3.4). In other words, these non-standard varieties differ only in the pronunciation of PC enclisis, and don’t demonstrate that PCs are enclitic on other accentogenic words, such as nouns referencing subjects and objects.

For the most part, this follows straightforwardly from the syntactic and interface analysis so far, because most of these data involve PC enclisis to verbs, e.g. kąż mi ‘tell me!’, požovū me ‘they call me’, bilō je ‘there was’. On the other hand, the few examples
of non-verbal hosts present a problem for this hypothesis. These are an adverb (dobre) and three nouns (zemlje, selo, sramota):

(73) Non-verbal enclitic hosts in the non-standard data

<table>
<thead>
<tr>
<th>literal gloss</th>
<th>predicate-to-I gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>dobrô mi dôšli</td>
<td>‘well me came (PL)’</td>
</tr>
<tr>
<td>zêmłjê je</td>
<td>‘land (GEN) is’</td>
</tr>
<tr>
<td>sêlô je</td>
<td>‘village (NOM) AUX’</td>
</tr>
<tr>
<td>sramôtâ je</td>
<td>‘shame (NOM) AUX’</td>
</tr>
</tbody>
</table>

It’s possible that these hosts are to be analyzed as predicate heads—or in the case of dobrô, as a modifier of the predicate head došli—that have adjoined to the PC in the same way as main verbs in clauses with verbal predicates. That is, I suggest that standard V-to-I adjunction corresponds in these dialects to a more general phenomenon of predicate-to-I adjunction, whereby not only main verbs, but also predicative nominal, adjectival, and adverbial heads raise to inflection. If this is the case, then these fragments are to be understood as something like the ‘predicate-to-I’ glosses in (73).

However, this can only be speculation at this point, because these examples don’t come with enough context to confirm or disconfirm whether zemlje, selo, sramota are indeed the predicate heads of their respective clauses. Nor am I aware of any independent evidence for general predicate-to-I movement. I therefore leave the investigation of the predicate-to-I hypothesis to future work.

Regarding the wider account of PC prosody, I adopt a cautious interpretation of these data. I conclude, first, that they support the claim that PCs are regularly enclitic on immediately preceding verbs. On the other hand, while they clearly show that PCs can be
enclitic on non-verbs in some non-standard varieties, it isn’t clear whether this means anything for the analysis of PC prosody in standard varieties.

5.3.7 Summary

In 5.3, I considered what several word-level phenomena might reveal regarding peninitial clitic prosody. These included accentual phenomena like co-promotion and rightward tone shift, as well as future sandhi, length on the future auxiliary če, and certain non-standard accent and length alternations between PCs and their hosts.

The clearest finding of this section is, perhaps, how little evidence there is for PC parsing at the level of word-to-word interactions. Nevertheless, I argued based on these data that in contrast to their traditional characterization as enclitics, PCs are in fact typically free clitics.

Specifically, I found that PCs are certainly enclitic when they co-promote with light introducers (e.g. dȁ se) but certainly free after unstressed, postpausal introducers (e.g. // da se). I proposed, further, that PCs are regularly enclitic on immediately preceding verbs, based on the syntactic evidence for V-to-I adjunction, and phonological evidence from future sandhi and clear enclisis in non-standard dialects.

The more difficult question was whether PCs are enclitic or free following nouns, adjectives, and adverbs. I contend that the combined evidence from tone shift and future sandhi indicates that the only accentogenic words to which PCs encliticize are the main verb of their clause. On the other hand, the evidence from nuclear length and enclisis in non-standard dialects was compatible with this finding, but inconclusive. In short, the
simplest interpretation of the word-level evidence is that, at least in standard varieties, PCs are enclitic only on verbs and introducers, and otherwise free.

Still, this conclusion remains tentative, based mainly on the absence of evidence for enclisis, rather than positive evidence for free clisis. I therefore proceed in 5.4 to the consideration of other, phrase-level phenomena that can confirm or refute this. In particular, I address the consequences of the free clitic analysis for the analysis of PC placement, and its connection to PC prosody.

5.4 Phrase-level evidence for PC prosody

5.4.1 Introduction

The investigation of peninitial clitic parsing continues here with the consideration of prosodic and word order evidence at the level of the phrase. This builds on the word-level analysis in 5.3, where I proposed that PCs aren’t strictly enclitic, as in the standard view, but are typically free clitics. That proposal has consequences for the usual analysis of PC placement, which holds that PCs are peninitial in order to be enclitic.

I begin, therefore, by evaluating the free clitic analysis with respect to some alternations in PC placement. First, by the utterance-final effect, PCs are avoided at the ends of utterances. Second, in late placement, PCs are avoided immediately following parentheticals, topics, and a few other constituent types.

I argue that these alternations support the free clitic analysis, their effect being to avoid parsing PCs at the edges of phonological phrases, where free clisis would interfere with the proper alignment of phonological phrases to prosodic words. In short, PCs are free and peninitial in P-phrase.
Consequently, I also take these phenomena to support the more general claim that PC placement is motivated, in part, by principles of prosodic well-formedness. Last, the proposed relevance of P-phrases to PC placement lays the groundwork for a more complete and better supported analysis of P-phrasing, which is presented in 5.5.

5.4.2 The utterance-final effect

The claim that PCs favor free clisis over enclisis receives further support from an alternation in PC placement with respect to the ends of utterances. This pattern prompts a more detailed inquiry into the potential realizations of free clisis, and into the relevance of prosodic structures above the word for PC placement and parsing.

We’ve seen that PCs are sometimes found at the ends of utterances. Take the short sentence Sama je ‘She’s alone’, where this is the only possible placement for je (see 5.3.2). Nevertheless, it’s been noted at least since Browne’s seminal articles that PCs are disfavored utterance-finally when other placements are possible.

The sentences in (74) illustrate this effect. These exemplify 2D placement (a) and late placement (b,c), which are both possible here (see 5.2.2). However, a comparison of (b) and (c) shows that late placement is an option only if it doesn’t make će final:

(74) PCs are disfavored at the ends of utterances

a. Moja mladja sestra će doći.

b. ??Moja mladja sestra doći će.

c. Moja mladja sestra doći će u utorak.

my younger sister FUT come on Tuesday

My younger sister will come (on Tuesday). (Browne 1975:120)
Because *utorak* ‘on Tuesday’ is an adjunct, its effect on the syntactic and phonological structure of preceding material is, presumably, minimal. We may assume that *če* is in the same syntactic position in both (b) and (c), yet (b) is worse.

An example from the questionnaire shows the same effect. The wordings in (75) compare PC placements in a sentence consisting of an NP predicate and a PC, but no overt subject. Although *je* can split the initial adjective phrase (a), or the AP from its head noun (b), the order where it follows the entire predicate is ungrammatical (c):

(75) PCs are disfavored at the ends of utterances

a. [[Izuzetno *je* sposoban] direktor].
   g: 1.3/3, ones: 5/6
b. [[Izuzetno sposoban] *je* direktor].
   g: 1.9/3, ones: 2/6
c. *[[Izuzetno sposoban] direktor] *je*.
   g: 3.0/3, ones: 0/6

(He) is an exceptionally capable manager. (Bošković 2000:83; Q31)

The grammaticality of utterance-final PC placement varies. Compare these scores with those of example (1)—*Svi naši snovi srušili su se* ‘All our dreams were dashed’—which some speakers find acceptable (see 5.2.2). Nevertheless, there’s general agreement that final PC placement ranges from degraded to ungrammatical.

Let’s call this restriction the *utterance-final effect*. Judging from these examples, the generalization is something like this: a PC placement that’s grammatical with respect to preceding material is nevertheless ungrammatical if (i) it’s utterance-final, and (ii)

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64 I adapt this example from Bošković, who gives it as *Izuzetno sposoban je (on) direktor*, and intends it as a counterexample to Prosodic Inversion, rather than as relevant to the utterance-final effect.

65 In reference to what I call the utterance-final effect, Franks (1998:32), Franks and King (2000:345), and Anderson (2005, chapter 6) consider a constraint NONFINAL that forbids a PC from immediately preceding an I-phrase edge, but don’t explore the underlying motivation of such a constraint.
some other placement is possible. Since finality is apparently independent of syntactic configuration, it seems likely that the explanation for this is phonological.

Relevant for PC prosody is that there is an analysis according to which medial PC placement is phonologically less marked than final placement, and it requires that PCs be free, not enclitic. To see this, consider these models of PC parsing, differing according to whether PCs are parsed by p-word (a), P-phrase (b), or I-phrase (c):

(76) Three models of peninitial clitic parsing

a. enclitic in p-word:  (izuzetno /je/) (sposoban /je/) (direktor /*je/)

b. free in P-phrase:  (izuzetno) /je/ (sposoban) /je/ (direktor) /*je/

c. free in I-phrase:  (izuzetno) /je/ (sposoban) /je/ (direktor) /*je/

In our usual terminology, model (a) represents enclisis, while the others represent free clisis, but distinguished by whether PCs are free in P (b) or free in I (c). Regarding the division into Ps and Is, I assume that such a sentence typically forms a single I-phrase, but the P-phrasing given here is provisional, for the sake of discussion.

A comparison of these models shows that free clisis offers an explanation for why final placement should be more marked than medial placement, but enclisis doesn’t. Specifically, free clisis distinguishes these placements by the fact that medial placement is also medial in P or I, while final placement puts je at the right edge of P or I. If je is enclitic, then it’s always final in p-word, regardless of its position in the utterance.
In other words, final free clisis interferes with the strict layering of prosodic constituents, whereas final enclisis is no worse than medial enclisis in this respect. While free clisis always violates Exhaustivity, final free clisis also affects alignment—either of P-phrases to p-words, or of I-phrases to P-phrases. Furthermore, since both Is and Ps are right-headed, final free PCs prevent the proper alignment of I or P to its head.

By this reasoning, the utterance-final effect suggests that PCs are free clitics. Like other evidence for PC parsing, this must be considered in the context of the broader picture of word, phrase, and clitic prosody. However, we may ask at this point what consequences this might have for the overall analysis.

First, consider what motivates normal peninitial placement under the free clitic analysis. By my assumption that the syntax puts PCs in inflection, above the predicate, je in this example will be clause-initial and P-phrase-initial, unless reordered at PF:

(77) \{P \textit{je} \{P (izuzetno) (sposoban)(direktor)\}\} \\
[IP AUX [NP [AP exceptionally capable ] manager ]]

In other words, failure to reorder violates the left-alignment of P-phrases to p-words:

(78) ALIGN-L(P,w): the left edge of every phonological phrase is aligned to the left edge of some prosodic word.

To satisfy this constraint, the suboptimal output of the syntax can be improved by host-raising the NP-initial lexical word \textit{izuzetno} to precede the PC \textit{je}—perhaps to some general topic or adjoined position (see 5.2.5, 5.2.6)—thereby aligning the initial P edge to a p-word. However, there are at least two analyses of how the resulting structure is
divided into P-phrases, which hinge on whether the splitting of the NP predicate affects its determination of a P break following the PC (b,c):

\[
\text{(79) Two prosodifications of a host-raised structure}
\]

\[
\begin{array}{c|c}
\text{ALIGN-L(P,w)} & \text{je [NP [AP izuzetno sposoban] direktor]} \\
a. \{ je \{ (izuzetno)(sposoban)(direktor) \} \} & *! \\
b. \rightarrow \{ (izuzetno) je \{ (sposoban)(direktor) \} \} \\
c. \rightarrow \{ (izuzetno) je (sposoban)(direktor) \}
\end{array}
\]

‘He’s an exceptionally capable manager.’

The question is whether, following host raising of \text{izuzetno}, the unraised NP remnant [\text{NP izuzetno sposoban direktor}] still determines a left P edge (b), or whether host raising in effect extends the NP to the beginning of the clause, in which case the P-phrasing model predicts that there should be no P break after \text{je} (c).

I’ll assume that (b) is the right analysis, for a couple of reasons. First, the observed constraints on host splitting indicated that host raising is essentially movement, albeit PF movement (see 5.2.5). It therefore seems appropriately cautious to assume that a remnant NP is still an NP, and therefore determines a P-phrase.

Moreover, the analysis of complementizer proclisis (4.5.5) indicated that PCs precede a P edge that corresponds to the left edge of the VP. Although the predicate in (79) isn’t a VP, but an NP, I assume that any lexical predicate—whether VP, NP, or AP—likewise determines a P edge that separates it from any PCs in the clause.

By this reasoning, the present example shows that host raising can have the effect of putting a PC at a \textit{right} P edge, in order to avoid putting it at a \textit{left} P edge. I therefore conclude that left alignment of P-phrases to p-words outranks right alignment:
(80) Host raising prioritizes left P alignment over right P alignment

<table>
<thead>
<tr>
<th>[IP je [NP [AP izuzetno sposoban] direktor]]</th>
<th>ALIGN-L(P,w)</th>
<th>ALIGN-R(P,w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.  { je { (izuzetno)(sposoban)(direktor) }}</td>
<td>*!</td>
<td>*</td>
</tr>
<tr>
<td>b.  → { (izuzetno) je }{ (sposoban)(direktor) }</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This has consequences for the analysis of the utterance-final effect. The judgments in (75) showed clearly that medial PC placement in this example is strongly preferred to final placement. Yet both medial and final placement put je at a right P edge. To distinguish these, then, it seems that we require reference to prosodic heads.

Specifically, I propose that final PC placement is marked because it prevents the alignment of a prominent P-phrase (head of I) to a prominent p-word (head of P):

(81) ALIGN-R(ΔI, ΔP): the right edge of every head of intonational phrase is aligned to the right edge of some head of phonological phrase.

This makes the desired distinction between medial and final placement. While both alternatives put je at a right P edge, only final placement prevents the alignment of the prominent P-phrase { p sposoban direktor } to its head word (direktor) (b):

(82) The utterance-final effect

<table>
<thead>
<tr>
<th>[IP je [NP [AP izuzetno sposoban] direktor]]</th>
<th>R(ΔI, ΔP)</th>
<th>R(P,w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.  → # { (izuzetno)ΔP je }{ (sposoban)(direktor)ΔP }ΔI #</td>
<td>*!</td>
<td>*</td>
</tr>
<tr>
<td>b.  # { (izuzetno)ΔP }{ (sposoban)(direktor)ΔP je }ΔI #</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

By contrast, the plain alignment constraint R(P,w) doesn’t distinguish these candidates. I conclude that the utterance-final effect is motivated by the alignment of prosodic heads, and that it supports a free-in-P model over an enclitic-in-word model.
The utterance-final effect, then, is the first phrase-level phenomenon that’s shown here to favor a free clitic analysis of PC prosody. In the rest of this chapter, I’ll show that other alternations in PC placement, too, support the conclusion that PCs are necessarily peninitial—and preferably nonfinal—because clause edges correspond to P edges, and PCs are avoided at P edges. In short, *PCs are free and peninitial in P-phrase.*

### 5.4.3 Late placement

I’ve argued that the utterance-final effect supports the free clitic analysis of PCs, based on the premise that this alternation serves to improve the prosody of the clause. As evidence for PC prosody, however, this suffers the drawbacks not only that the premise itself is controversial (see 5.2.4), but moreover, that we’ve so far seen only circumstantial evidence that it is the phonological phrase—and not some other constituent—that serves as the domain with respect to which PC placement is determined.

Therefore, in the rest of 5.4, I look at another alternation—late placement—that supports both the influence of prosodic constraints on PC placement, and the significance of P-phrase in determining PCs’ prosodic well-formedness. Whereas the utterance-final effect represented an avoidance of PCs at *right* P edges, I’ll claim that the various patterns in late placement have in common that they keep PCs from *left* P edges.

Late placement—also called ‘delayed placement’, ‘skipping’, or ‘clitic third’—describes a class of word orders in which the PCs don’t immediately follow an initial word or syntactic phrase, but occur later in their clause. Although it’s been discussed at least since Browne (1975), it continues to receive conflicting accounts.66

---

In his description, Browne observes that PCs can be late after a strong, explicit pause (a), after a less explicit, possibly weaker prosodic break following a topic (b), or after a long initial constituent (c):

(83) Late placement (Browne 1975:119-120)
   a. [Njegova posljednja knjiga] … ovaj… dosadna mi je.  
      [his latest book ] this boring me AUX  
      His latest book… er… is boring.
      [my girlfriend] // saw AUX yesterday bear  
      My girlfriend saw a bear yesterday.\(^67\)
   c. [Prvi /je/ sekretar afganistske ambasade u Rimu /je/ izjavio /je/ da…  
      [first AUX secretary Afghan embassy in Rome] announced C …  
      The First Secretary of the Afghan Embassy in Rome announced that…

In example (c), 2W, 2D, and late placement are all possible (see 5.2.2).\(^68\)

Descriptively speaking, we may say that late placement ignores some initial element in the determination of second position. I’ll call this the *ignored element*. Further, though the non-ignored element that immediately precedes late PCs is typically the verb, in fact this can be any kind of constituent that can also precede non-late PCs, including, for example, adverbs (a) and prepositional phrases (b):

\(^67\) This sentence could also be given a translation that more explicitly indicates the discourse-newness of *moja djevojka*, e.g. ‘You know my girlfriend? She saw a bear yesterday’. See Browne (1975:120).

\(^68\) In discussing this example (*Prvi sekretar…*), Browne characterizes 2W as ‘ordinary style’ (which I take to mean a standard literary style of that time), 2D as preferable for many speakers, and late placement as typical of journalistic style. Although late placement is normal in both speech and writing, Browne finds that it’s particularly common in journalistic style: ‘Newspaper and official style is especially fond of putting enclitics after the verb without regard to theme-rheme structure or pauses’ (1975:120).
(84) Late PCs following non-verbs

a. [Severni deo Srbije], [Vojvodina], pretežno je ravničarski // [northern part Serbia] [Vojvodina] predominantly AUX level // The northern part of Serbia, Vojvodina, is predominantly level // (VRS)

b. [Zaključivanjem Sporazuma o stabilizaciji i pridruživanju] [po prvi put] [conclusion agreement on stabilization and cooperation] [for first time]

če se uspostaviti ugovorni odnosi između RH i EU.

**FUT RFL** establish treaty relations between RH and EU

By the conclusion of the Agreement on Stabilization and Cooperation, treaty relations will be established for the first time between the RH and the EU. (VRH)

Example (a) also goes to show that late placement is in principle possible after one, two, or any number of ignored elements—though as always, the PCs can never occur later in their clause than immediately following the verb.69

Formal accounts of late placement vary. According to prosodic accounts, late placement is conditioned by a prosodic break that immediately precedes the PCs. This break prevents enclisis, forcing the PCs to encliticize to a later host (Browne 1975, Radanović-Kocić 1988, Zec and Inkelas 1990, Halpern 1992, Schütze 1994, Bošković 1995, Franks 1998, Franks and King 2000).

However, prosodic accounts differ both by what sort of break they assume this to be, and by what conditions the presence of the break. Most follow Radanović-Kocić in assuming that the relevant break is an I-phrase edge, except Zec and Inkelas, who identify it as an edge of P-phrase. As for what conditions the break, this is variously assumed to

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69 Radanović-Kocić offers this rather extreme example of the possibility for late placement to ignore several initial constituents (1988:64):

(i) **U pjevanju svakoga stiha /sel/ posljednja stopa /sel/ ovako /sel/ po dvaput /sel/ govori /sel/.
   **In recitation every verse RFL last foot thus by twice says
   In the recitation of every verse the last foot is thus twice repeated.**
reflect the weight or topicality of the ignored element (following Browne), or its syntactic dislocation from the clause (following Halpern).

Syntactic accounts also suppose that ignored elements are dislocated to some extraclausal position, but ascribe late placement to the need for another element to fill the resulting syntactic gap (Progovac 1996, 2000, 2005, Tomić 1996). While there might be a prosodic break corresponding to the left edge of the clause, this is nevertheless coincidental under such an account. 70

Taking yet a third approach, Ćavar and Wilder (1999) agree with syntactic accounts in taking ignored elements to be left-dislocated, but claim that late placement results neither from a prosodic break, nor from a syntactic requirement that some position be filled, but from a rather complex condition requiring that PCs be phonologically enclitic within CP, a syntactically defined domain. 71

Following some scholars, I will conclude that the key to selecting among accounts of late placement is to distinguish different late placement contexts (Schütze 1994, Ćavar and Wilder 1999). Contexts differ by what sorts of constituents PCs are late after, by those constituents’ function and size, and by their effects on prosodic phrasing.

More specifically, the analysis of late placement remains unresolved partly because accounts are inconsistent regarding whether late placement is found after an inclausal topic, or an extraclausal, dislocated constituent. Furthermore, prosodic accounts differ regarding whether the relevant break is an edge of I-phrase or of P-phrase.

70 Tomić is the most specific regarding the target of preposing. She claims that an ignored element is a topic in the specifier of TopicP, which is followed by a focused element in the specifier of CP, the latter serving as host for any PCs. However, a topic can also host PCs in that account, if the specifier of CP is empty.
71 Ćavar and Wilder derive this condition by an account in which PC movement and adjunction are cyclic in such a way that these operations can’t see potential hosts for enclisis outside CP (1999:462-464).
The resulting taxonomy of contexts reveals that these aren’t all explained under a syntactic approach, but are unified by their effects on prosodic phrasing. However, in contrast to most prosodic accounts, I claim that the crucial trigger is an edge not of I-phrase, but of P-phrase. Thus, the inquiry into late placement supports both the general claim that PC prosody influences PC placement, and the specific characterization of PCs as peninitial in P-phrase.

Another result is to garner support for the claim that a topic position intervenes between complementizers and PCs, which I proposed in connection to variable placement after introducers. The enumeration of late placement contexts helps to establish that this position exists, and to distinguish it from similar fronting constructions.

5.4.4 Late placement is prosodically motivated

To begin with, Radanović-Kocić (1996) shows conclusively that late placement is—at least sometimes—triggered phonologically. The crucial examples are those where an ignored element is an intrusive parenthetical phrase that interacts with the prosodic structure of the matrix clause, but not its syntactic structure.

One such context is that following a parenthetical appositive. This pair of examples shows that PCs normally follow an initial subject pronoun (a), but must be late when the pronoun is modified by a parenthetical appositive (b):

(85) Late placement after a parenthetical appositive (Radanović-Kocić 1996:437)

a. Ja \textit{sam ti} obećala igračku.
   I \texttt{AUX you} promised toy
   I promised you a toy.
b. Ja, [tvoja mama], */sam ti/ obećala /*sam ti/ igračku.
I [your mom] promised AUX you toy
I, your mom, promised you a toy.

Although the parenthetical *tvoja mama* interrupts the clause phonologically, it
doesn’t affect its interpretation. We may therefore be fairly certain that the subject *ja* is in
the same position in both sentences. The only important difference between them, for the
purpose of determining PC placement, is the break following *tvoja mama*.

Another parenthetical context is that following a non-restrictive relative clause.
These examples, one containing a restrictive relative (a) and the other a non-restrictive
relative (b), are almost identical in their syntax, but only the latter is both obligatorily
followed by a break, and obligatorily conditions late placement:

(86) Late placement after a non-restrictive relative (Radanović-Kocić 1996:437)
       that my sister [which AUX in Sarajevo] you RFL remembers
       My sister who is in Sarajevo remembers you. (restrictive)
    b. Moja sestra, [koja je u Sarajevu], */vas se/ sjeća /*vas se/.
       my sister [which AUX in Sarajevo] remembers you RFL
       My sister, who is in Sarajevo, remembers you. (non-restrictive)

Such examples also support the characterization of late placement as triggered by
an I-phrase break. Indeed, parenthetical appositives and non-restrictive relatives are
among those elements that typically determine I-phrases. However, according to the
account of phonological phrasing developed here, it happens that the relevant breaks—
preceding *obećala* (a) and *sjeća* (b)—are P edges as well:
Late placement after parentheticals makes PCs peninitial in P-phrase

a. #₁ #₁₁ #₁₁ #₁₁ #₁₁ #₁₁
   {P Ja} {P tvoja mama} {P obećala sam ti} {P igračku}
   [ I [ your mom ] promised AUX you [ toy ]].
   I, your mom, promised you a toy.

b. #₁ #₁₁ #₁₁ #₁₁ #₁₁ #₁₁ #₁₁
   {P Moja sestra} {P koja je P u Sarajevu } {P sjeća vas se }
   [ my sister [ which AUX [ in Sarajevo] remembers you]].
   My sister, who is in Sarajevo, remembers you.

As we’ll see, only some late placement contexts involve an I break, but all involve a P break, showing that P-phrasing, and not I-phrasing, is the common factor.

Naturally, it’s still possible that some cases of late placement, such as after left-dislocated elements, have purely syntactic explanations. However, these examples serve to show that the prosodic approach is both necessary and sufficient. In the rest of 5.5, I’ll argue further that late placement contexts, like PC placement domains in general, are unified by their correspondence to the left edges of P-phrases.

5.4.5 A taxonomy of late placement contexts

Having established that late placement after parentheticals is phonologically motivated, let’s consider late placement after initial elements. Initial ignored elements are variously claimed to be prosodically heavy, topics, or syntactically dislocated, and to induce late placement by introducing either an I edge, or a P edge.

In fact, a review of fronting-induced late placement contexts indicates that all of these occur. Based on a comparison among fronting constructions, I conclude that these comprise at least three types, which are distinguished by the type of initial constituent (heavy, topical, or dislocated), by whether they necessarily induce an I break, and by
certain asymmetries in their formation. Yet despite their different properties, these have 
in common that they induce a P-phrase edge that triggers late placement.

The properties of different fronting constructions have inspired conflicting 
accounts of late placement. For example, Radanović-Kocić (1988) finds that the deciding 
factor is an element’s weight. Specifically, elements of two or more prosodic words tend 
to induce late placement (a), with longer ones increasingly likely to do so (b):

(88) Initial ignored elements are prosodically heavy (Radanović-Kocić 1988:109, 111)
       [some time ] AUX talked about you
       We talked for some time about you.
    b. [Jezičke razine više od rečenice] vrlo su …
       [linguistic levels higher than sentence] very AUX…
       Linguistic units higher than the sentence are very…

Radanović-Kocić analyzes ignored elements, moreover, as independent I-phrases.

By contrast, Zec and Inkelas (1990) identify initial ignored elements syntactically 
as topics, and prosodically as P-phrases. In that account, topics are subject to a constraint 
that they be heavy P-phrases—that is, that they contain at least two prosodic words. Thus, 
light topics are impossible (a), while heavy topics are well formed (b):

(89) Initial ignored elements are topics (Zec and Inkelas 1990:375)72
       [in Rio ] stayed AUX two years
       In Rio, they stayed two years.
    b. [U Rio de Žaneiru] ostali su dve godine.
       [in Rio de Janeiro ] stayed AUX two years
       In Rio de Janeiro, they stayed two years.

72 The syntactic and prosodic bracketings in these examples are mine.
That such cases involve some sort of weak prosodic break, despite the lack of explicit punctuation, is supported by native speaker intuitions:

the PP in [U Rio de Žaneiro ostali su dve godine] is actually followed by a pause, an overt manifestation of the boundary. In fact, the construction is bad if the pause is not present. (Bošković 1995:264, n27)

If the first syntagm consists of two words, an enclitic may lean on the second word, because there does not have to be a pause after it. A pause is felt only after longer groups of words. (Bennett 1987:275, quoting Brabec 1964-1965:146-147)

So far, then, accounts disagree over whether an initial ignored constituent is necessarily a topic, and whether it’s followed by an I or P edge, but agree that it must be heavy.

However, Radanović-Kocić acknowledges that late placement is possible also after single words, though in such cases, authors tend to mark the presence of a break by explicit punctuation (Radanović-Kocić 1988:106-108, Progovac 1996:424-425):

(90) Initial ignored elements can be single words (Radanović-Kocić 1988:106)
    a. Noću je ovde mirmije.
        night AUX here more quiet
    b. Noću, ovde je mirmije.
        night here AUX more quiet

At night it is more quiet here.

Based in part on such examples, some propose that ignored elements aren’t distinguished prosodically by weight, but syntactically, by having dislocated to some extraclausal position (Halpern 1992, Schütze 1994, Wilder and Ćavarić 1994, Progovac 1996, Tomić 1996). Moreover, among those that address prosody above the word,
dislocation accounts agree that the dislocatum is followed by an I break, which would account for the explicit pausal punctuation in such cases.

In support of dislocation, Progovac offers this example, where the ignored word *noću* precedes the *wh* phrase *ko*, indicating that *noću* is external to CP:  

(91) Noću, ko *bi* ovde došao?
night who CND here came
At night, who would come here? (Progovac 1996:425)

Since, by most accounts, the edge of the clause coincides with some prosodic break, the dislocation approach to late placement is not only plausible, but seems the best alternative to the inconsistent generalization that initial elements must be heavy.

However, certain asymmetries suggest that these conflicting claims refer to different constructions. One asymmetry concerns adjuncts and non-adjuncts (Schütze 1994, Wilder and Čavar 1994, Čavar and Wilder 1999). First, ignored single words tend to be adjuncts (e.g. *noću* ‘at night’). Conversely, clause-bound elements like negative quantifiers can’t be ignored in late placement (a), though other quantifiers can (b):

(92) No late placement after a negative quantifier (Wilder and Čavar 1994:43-44)
   a. [U nikakvom slučaju] *bi* rekli, da *je* Ivan pametan.
      *[U nikakvom slučaju], rekli *bi* da *je* Ivan pametan.
      [in no case ] CND said C AUX Ivan intelligent
      By no means would they say that Ivan is intelligent.
   b. [U svakom slučaju] *bi* rekli, da *je* Ivan pametan.
      *[U svakom slučaju], rekli *bi* da *je* Ivan pametan.
      [in every case ] CND said C AUX Ivan intelligent
      In any event they would say that Ivan is intelligent.

73 On the other hand, according my assumptions, *wh* phrases aren’t necessarily as high as CP (see 5.2.6). Still, the fact that *ko* precedes *bi* in this example shows that it’s at least as high as *bi*’s location in inflection. This indicates that *ko* must raise to be a host, and that no other viable host precedes *bi* in its clause.
This supports the dislocation approach to such cases, since dislocation is just the sort of operation that ought to distinguish adjuncts, on the one hand, from more clause-bound elements on the other. It moreover offers grounds for distinguishing dislocation from topicalization. Whereas topics are inclausal, heavy, and induce P edges, dislocata are extraclausal, need not be heavy, and induce I edges.74

This characterization of topics is supported by another asymmetry, this one between subjects and non-subjects. Radanović-Kocić finds that late placement is optional after heavy subjects (a), but is preferred or obligatory after heavy non-subjects (b,c):

(93) Late placement after subjects and non-subjects (Radanović-Kocić 1988:108-110)
   a. [Kolutovi plavičastog dima ] /su se/ penjali /su se/.
   [circles bluish smoke] AUX RFL rose
   Bluish circles of smoke were rising.
   b. [Za svečanu priliku ] /?je/ BBC /je/ odbacio dvosmislenost.
   [for special occasion] BBC AUX gave up double talk
   For the special occasion the BBC gave up its double talk.
   c. [Svoje probleme i dileme ] /*če/ lingvistika /če/ rešavati…
   [self’s problems and dilemmas] linguistics FUT solve …
   Linguistics will solve its problems and dilemmas…

Let’s assume, first, that the lack of pausal punctuation in these examples indicates the presence of the weaker, P-phrase break characteristic of topicalization. This suggests, then, that when a non-subject is fronted, it’s usually by topicalization, whereas a subject

74 Schütze (1994:449) notes the following apparent exception to the claim that adjuncts can’t dislocate. Here lica is followed by a break, and induces late placement, though it’s an object of the verb:

(i) [Lica ] , ne razaznaje im.
   [faces] not distinguishes them
   He doesn’t distinguish their faces. (Radanović-Kocić 1988:107)
can precede the PCs either because it’s a topic, and followed by a break, or simply because it’s the highest viable PC host, in which case there’s no break.

This agrees, furthermore, with other phonological evidence independent of PC placement for the presence of a P edge following initial non-subjects (see 5.2.6). I therefore take this to support Zec and Inkelas’s analysis of topics as P-phrases, and as subject to a weight restriction, alongside the analysis of dislocata as I-phrases.

Last, to return to Browne’s and Radanović-Kocić’s claim that some initial elements are ignored just because they’re heavy, we may ask whether these are just examples of topicalization. This is suggested by the fact that ignored topics and ignored heavies are alike in that they’re heavy, and are apparently P-phrases, failing to get explicit pausal punctuation that would indicate the presence of an I break.

The following data from Bošković (2000) provide evidence for late placement after heavy constituents independently of topicalization. The initial phrases in these examples are almost identical, except that the lighter phrase in (a) optionally induces late placement, whereas the heavier phrase in (b) does so obligatorily:

(94) Late placement after a heavy constituent (Bošković 2000:97)
    a. [Tvome prijatelju] /su/ prodali /su/ knjigu.
       [your friend] AUX sold book
       To your friend, they sold the book.
    b. [Njegovom najboljem prijatelju] /*su/ prodali /su/ knjigu.
       [his best friend] sold AUX book
       To his best friend, they sold the book.

Bošković observes, moreover, that the same heavy phrase can follow a wh phrase (šta)—and, incidentally, a PC (su)—showing that it isn’t necessarily a high topic:
I therefore conclude that contexts of late placement after an initial ignored element comprise at least three types, distinguished by whether the ignored element is dislocated from the clause (a), an incausal topic (b), or just heavy (c):

(96) Three late placement contexts
   a. \#_I ___ #_
      \{ P Noću \} \{ P ovde je \} \{ P mirnije \} \}
      [ night ] [ here aux [ more quiet ] ]
      At night, it is more quiet here.
   b. \#_I ___ #_
      \{ P U Rio de Žaneiru \} \{ P ostali su \} \{ P dve godine \} \}
      [ in Rio de Janeiro ] stayed aux [ two years ]
      In Rio de Janeiro, they stayed two years.
   c. \#_I ___ #_
      \{ P Njegovom najboljem prijatelju \} \{ P prodali /su/ \} \{ P knjigu \} \}
      [ his best friend ] sold aux [ book ]
      To his best friend, they sold the book.

Adding to these our conclusions concerning late placement after parenthetical elements, we arrive at the following taxonomy of late placement contexts:

(97) Late placement contexts and their properties

<table>
<thead>
<tr>
<th>ignored element</th>
<th>must be heavy</th>
<th>break type</th>
<th>other properties</th>
</tr>
</thead>
<tbody>
<tr>
<td>heavy constituent</td>
<td>yes</td>
<td>P-phrase</td>
<td>—</td>
</tr>
<tr>
<td>topic</td>
<td>yes</td>
<td>P-phrase</td>
<td>optional with subjects</td>
</tr>
<tr>
<td>dislocatum</td>
<td>no</td>
<td>I-phrase</td>
<td>frequently an adjunct</td>
</tr>
<tr>
<td>parenthetical</td>
<td>no</td>
<td>I-phrase</td>
<td>—</td>
</tr>
</tbody>
</table>
To summarize the findings of this section, certain inconsistencies across accounts of late placement were resolved by a review of the properties of late placement contexts, which indicated that there are at least four types. These are nevertheless unified by the fact that they induce late placement by the presence of a prosodic break, and while only some of these contexts induce I edges, all of them induce P edges.

For the claims made in this chapter on PC prosody, then, the significance of these findings regarding late placement consists, first, in the conclusion that late placement is prosodically motivated, which supports the general premise that PC placement provides evidence for PC prosody. Second, the commonality of P edges across late placement contexts supports the claim that PCs are typically free and peninitial in P-phrase.

5.4.6 Phonetic evidence for phrasing in late placement

Before concluding this analysis of late placement, I’ll supplement the foregoing evidence distinguishing I and P breaks—namely, punctuation—with some instrumental evidence from audio recordings. This will support one of the main claims of 5.5, that topics and dislocata are parsed as P-phrases and I-phrases, respectively.

The following sentence, from a text that was read and recorded by several consultants, begins with the lone adverb napokon, which exhibits the properties of a dislocated phrase. It’s an adjunct, fronted, and set off in writing by an explicit comma. Accordingly, it was consistently pronounced in its own I-phrase:
A dislocated constituent forms an independent I-phrase\(^{75}\).

\[ \text{finally} \quad \text{when RFL will before me totally suddenly appeared} \]

Finally, when the big gate of the school building appears suddenly before me, I’ll stop daydreaming. (adapted from MM:13)

The following pitch track of this sentence shows that every I-phrase bears a characteristic phrase accent on its final p-word, and is set off by pauses. The first two phrases bear continuation rises (H\(^-\)), and the last a declarative fall (L\(^-\)):

(99) A dislocated constituent forms an independent I-phrase (HZ)

| H\(^-\) | H\(^-\) | L\(^-\) |
|#₁ Napokon, ##₁ kad se budu preda mnom, sasvim iznenada, pojavila |
| finally | when RFL will before me totally suddenly appeared |

Significantly, napokon bears its own rise, showing that it’s an independent I-phrase.

This next example illustrates the prosody of the topic construction. This was read and recorded with both 2D and late placement of je, which I took to correspond to plain and topicalized readings of the subject (*Lolino malo jare*):

---

75 Recordings of this text were made with nine consultants, with some minor differences in wording to make it as natural as possible for speakers of different varieties. The phrase sasvim iznenada, although it’s set off orthographically by commas, is a P-phrase. This can be seen in the accompanying pitch track, which shows that it’s bracketed by noticeable pauses, but doesn’t bear I-phrase intonation.
(100) Late placement after a topic

 LNG aux ate rosy raspberries
 Lola’s little goat ate some rosy raspberries.

A pitch track of the late placement version shows that the subject is a P-phrase. First, the utterance contains just one phrase accent (L⁻), showing that it contains only a single I-phrase. Second, we see what appears to be a pleat between jare and pojelo—that is, an upward reset in the pitch downtrend—which is proposed to occur optionally between P-phrases:

(101) A topicalized constituent forms a P-phrase (HZ)

(Current silence after jare isn’t a pause, but the closure of the /p/ in pojelo).

Last, the pitch track of the 2D wording is almost identical to that with late placement. It’s unclear whether the slight rise following jare is steep enough to be considered a pleat, but whether it is or not doesn’t affect the analysis of its P-phrasing, which differs from the late wording only in the location of je:

76 This example was recorded with three consultants—two from Zagreb, and one from Belgrade. The accompanying pitch tracks, as for the preceding example of dislocation, are from consultant HZ.
A pre-PC subject forms a P-phrase (HZ)

What is clear from these data, however, is that the dislocatum napokon in (99) is an I-phrase, while the topic Lolino malo jare in (101) isn’t. These therefore support the identification of dislocata and topics with I-phrases and P-phrases, respectively.

5.4.7 Summary

In 5.4, I turned from word-level phonological evidence for PC prosody to the significance of evidence at the level of the phrase, especially from alternations in PC placement. I argued that both late placement and the utterance-final effect serve to keep PCs peninitial in phonological phrases, in order to avoid the potential alignment violations caused by free clisis.

Based on an investigation of late placement, I offered a taxonomy of contexts, which are distinguished by whether PCs are late following parenthetical, heavy, topical, or dislocated elements. Significantly, while a syntactic account is plausible in contexts of dislocation, other contexts favor a prosodic account.

Key to this point was late placement after intrusive parentheticals, which affect prosodic structure, but not syntactic structure, thereby supporting the prosodic approach to late placement. In addition, late placement after inclusal topics showed that late
placement isn’t triggered by I-phrase edges, as in some accounts, but by P-phrase edges, supporting the claim that PCs are peninitial in P-phrase.

Besides providing support for the claim that PCs are typically free, this analysis depends on the account of P-phrasing proposed in chapter 4. Building on that account, I claimed that the domains within which PCs are peninitial don’t represent any particular syntactic constituent, being unified rather by their correspondence to P-phrases.

Next, having established the connection between P-phrasing and PC placement, I draw further support for the account of P-phrase determination proposed in 4.6 from the broader pattern of PC placement within various syntactic domains.

5.5 Further evidence for phonological phrasing

5.5.1 Introduction

In this last analytical section of chapter 5, I return to the analysis of phonological phrasing that I began in chapter 4. Whereas in chapter 4 the evidence for P-phrases and their edges came mostly from barriers to clisis, here I discuss another source of evidence for the proposed P-phrasing model, exploring further the interaction between phonological phrasing and PC placement.

To those alternations in PC placement that were discussed in 5.4—late placement and the utterance-final effect—I add here two others. First, PCs follow some introducers directly, but must occur later after others. Second, PCs are observed to be peninitial in domains other than the clause, including non-finite clauses and possessed NPs.

I claim that, while these various domains don’t correspond to any particular phrasal category, they’re unified syntactically as extended projections of lexical heads,
and phonologically by their correspondence to P-phrases. I conclude that the best characterization of PC word order, as proposed in 5.4.2, is that the syntactic and prosodic components of the grammar conspire to make PCs free and peninitial in P-phrases.

The outcomes of this discussion are, first, to bolster the present account of the peninitial effect, and second, to support the proposed P-phrasing model with evidence from two separate sources, namely barriers to proclisis, and PC placement.

5.5.2 PC placement after introducers

I’ll begin with the relevance of PC placement after introducers for the proposed account of P-phrasing. We find that clause introducers differ with respect to whether PCs must follow them immediately, or must follow a subsequent word or phrase (Browne 1974). Most fall into the former group, which I’ll call strong introducers:

(103) Strong introducers

… da mi nali jejoš malo vina. ‘to pour me a little more wine’ (Q10)
// što bi dovelo do zatvaranja… ‘which would bring to a close’ (J)
// ako je vjerovati studiji… ‘if the study is to be believed’ (J)
… kad sam te zvao telefonom? ‘when I called you by telephone’ (Q18)
… ili ćemo stanovništvo podijeliti… ‘or we’ll divide the population’ (J)
// niti smo se obračunavali… ‘nor have we used force’ (J)
… pa si otporna na zimu. ‘so you’re used to winter’ (Q30)
// te ga pozvao da se ukloni… ‘and called on him to leave’ (J)
// kako bi se po istoj metodologiji… ‘how by the same methodology’ (J)
// dok se čeka novi predsjednik… ‘while one awaits a new president’ (J)

As these examples show, there are strong introducers of all introducer categories, including complementizers (da, što, ako, kad), conjunctions (ili, niti), and adverbial elements (pa, te, kako, dok). Nor is this list complete. Many other words could be included here, depending on one’s definition of ‘introducer’ (see 4.5.1).
By contrast, those introducers that can’t immediately precede PCs, which I’ll call weak, comprise only the four conjunctions *i, ni, a, no*:

(104) Weak introducers\(^{77,78}\)

\[
\begin{align*}
  &\ldots i \text{ slat } \text{ćemo vam reviju…} & \text{‘and we’ll send you the journal’ (J)} \\
  &\ldots ni \text{ da } bi \text{ ih prstom makli.} & \text{‘wouldn’t lift a finger to move them’ (J)} \\
  &// a \text{ ona } mu \text{ je dala limune.} & \text{‘but she gave him lemons’ (DK)} \\
  &// no \text{ dali su } nam \text{ limune.} & \text{‘but they gave us lemons’ (Q40)}
\end{align*}
\]

Alternate word orders where PCs immediately follow weak introducers, or fail to immediately follow strong introducers, are ungrammatical.

Last, some introducers exhibit variable behavior, immediately preceding PCs in some cases, but not in others. I’ll call these variable introducers:

(105) Variable introducers

\[
\begin{align*}
  &// ali /sul/ bili /sul/ zločest prema meni. & \text{‘but they’ve been naughty to me’ (Q23)} \\
  &… jer /jel/ ona /jel/ njena mama. & \text{‘because she’s her mom’ (Q33)}
\end{align*}
\]

Setting aside for now the problem of variable introducers (see 5.5.5), I’ll address first the basic alternation in PC placement after strong versus weak introducers.

Example (106) will help to clarify the strong-weak puzzle. Here, two more or less structurally equivalent IPs are subordinated by the strong introducer *što*, and coordinated by weak *i*. Interestingly, PC placement in each IP depends on its introducer. Whereas the PCs *vam se* are IP-initial after *što*, the PC *ste* is IP-medial after *i*:

\(^{77}\) Strictly speaking, *ni* isn’t a weak introducer because it doesn’t introduce IPs. See 5.5.4.

\(^{78}\) The questionnaire results indicate that *no* ‘but’ isn’t as weak as other weak introducers. One younger consultant from Belgrade preferred to treat *no* as strong. Other Belgrade speakers treated *no* as weak, but rated its strong use at two (‘I wouldn’t say this, but someone else might’) (Q40). See 1.4.2.
Different PC placements following a strong versus a weak introducer\(^79\)

Sve ono \(\textit{štto} \) [\(\text{IP } \textit{vam se} \) prošle godine \(\textit{ćinilo} \) loše \(\) i \(\text{IP } \textit{silno} \) \(\textit{ste} \) all that \(\text{C} \) [\(\text{you RFL last year seemed wrong} \) and \(\text{keenly AUX} \) željeli promijeni]), posložite sada.
wished change \(\) reconcile now

To all that which [has seemed wrong to you during the last year], and (which) [you’ve keenly wished to change], be reconciled now. (\textit{Jutarnje})

One approach to the strong-weak alternation is purely phonological. Browne (1974) proposes that the alternation correlates with whether or not an introducer is accented. Whereas a strong, stressed introducer can support a following enclitic, a weak, unstressed introducer can’t, forcing the PC to find some later host (see 5.3.2). Inkelas and Zec (1988), Hock (1992), and Zec (2005) also adopt this account.

However, this doesn’t seem to hold for all varieties. While it’s true that weak introducers are generally unstressed, we find that strong introducers are often unstressed too, with no effect on PC placement. In the received corpus, for example, there’s no apparent correlation between introducer strength and stressedness:

(107) Introducers aren’t necessarily stressed preceding PCs (received)

// đâ \(ju \) je jèdva pòpitì mògao // ‘so that he could hardly drink it’
// da čèš nam dònijèti zvijëzdù… ‘that you would bring us a star’
// štò \(ju \) tâkô râno bûdï // ‘that he woke her so early’
// štò \(je \) nìjìa mùànjkàlo // ‘which they were missing’
// kâd te nà tô nagòvàrà // ‘if he convinced you of that’
// kad \(ju \) je vîdìòò òòëòt… ‘when he saw her again’
// dôk se nìje gùstò spùstìò… ‘until it came down thickly’
// dok si tî mëd’ nàma // ‘while you’re among us’
// të se skrèñuli glàvë ka bûdîma // ‘and turned their heads to the hills’
// te joj je bîlo žào // ‘and she was upset’

\(^79\) It isn’t obvious whether the second clause in this example is in fact a bare IP, or a CP with a null complementizer. In either case, I contend that this has no bearing on the present problem, because these different placements are motivated by a phonological condition—specifically, the left alignment of P-phrases to p-words (see below)—to which phonologically null elements are irrelevant.
Moreover, we saw that stressed introducers are even less common in Piva-Drobnjak (see 4.5.2, 5.3.2). Yet alternations in PC placement after strong versus weak introducers are consistent across dialects. I conclude that an introducer’s stressedness can’t be what determines its strength or weakness with respect to PC placement.

Another approach to the problem reduces the distinction among introducers to distinct syntactic configurations. The general idea is that strong introducers are internal to the clause, while weak ones are clause-external (Bennett 1986). Their placement with respect to PCs then follows not from the phonological properties of the introducer itself, but from whatever principles make PCs peninitial in their clause.

Naturally, implementations of the inclausal-extraclausal approach differ in how the grammar mediates the correlation between structure and placement. Schütze (1994) proposes that the left edge of the clause corresponds to an I-phrase break, blocking PC enclisis to an extraclausal introducer. Ćavari and Wilder (1999) reject an account in terms of prosodic breaks, proposing instead that PCs are subject to a condition that they be enclitic within CP (see 5.4.3).81

80 I have no corresponding example with unstressed ili because, while there are examples of unstressed ili in the received corpus, there are none where it immediately precedes PCs.

81 As pointed out by Schütze (1994:459) and Franks and King (2000:233), the premise that strong and weak introducers are respectively inclausal and extraclausal could also provide the basis for a strong syntax version of the inclausal-extraclausal approach. That is, some inclausal ‘first’ position is saturated by strong introducers, but is left vacant by weak introducers, and must be filled by some other element. However, no account that I’m aware of takes a purely syntactic approach to this particular puzzle.
I propose to adapt the inclausal-extraclausal approach to the present findings concerning PC parsing, PC placement, and phonological phrasing. Following Schütze, I trace the strong-weak alternation ultimately to a syntactic difference between strong and weak introducers, as mediated by prosodic structure.

But I differ from Schütze regarding the details of clause and PC prosody, and in what, specifically, makes an introducer inclausal or extraclausal. First, I claim that PCs aren’t enclitic, but free, and that the relevant break isn’t an I edge, but a P edge.

Second, I claim that strong introducers are inclausal, and weak ones extraclausal, in the sense of being internal or external to the *extended projection* of a clause head. The left edge of the extended clause corresponds, in turn, to a P-phrase edge that defines the domain within which any PCs in the clause are peninitial.

I’ll show, moreover, that PC placement domains aren’t even necessarily clauses, but comprise various syntactic constituents whose common property is that they determine P-phrases. One result of the investigation of post-introducer PC placement is, therefore, to support the generalization that PCs are peninitial in P-phrase.

Take, for example, the contrasting placements in (106), reproduced in (108), where PCs are IP-initial after strong *što* (a), but IP-medial after weak *i* (b). By my proposal, the complementizer *što* is inclausal and strong because its clause projects to CP, whereas *i*, a conjunction, lies outside of the extended clause that it introduces. As a result, *što* and *i* are respectively inside and outside the P-phrase that contains any following PCs:
Only strong introducers are initial in phonological phrases

a. \( \{P \, \text{što } \text{vam se } \text{prošle godine } \text{činilo } \text{loše } \ldots \} \)
\[ \text{CP } \text{C} \quad \text{IP } \text{you RFL last year seemed wrong } \ldots \]
that which has seemed wrong to you during the last year

b. \( \ldots \text{i } \{P \, \text{silno } \text{ste } \text{željeli } \text{promijeniti } // \}
\[ \text{Cnj'} \text{ and } \text{IP } \text{keenly AUX wished change } \]
and you’ve keenly wished to change

But once we relativize PC placement not to introducers, but to P-phrases, we find that the PCs in both clauses are consistently peninitial in their respective P-phrases.

This proposal therefore builds on the analysis of P-phrasing proposed in chapter 4. It depends, first, on the claim that the extended clause, whether IP or CP, determines a left P-phrase edge. Moreover, just as NP conjunctions are excluded from the P-phrase determined by NP, and PP conjunctions from PP, we find that clausal conjunctions are excluded from the P-phrase determined by the extended clause.

On the other hand, the present account seems to involve some inconsistencies. For one, while some conjunctions (\(i, ni, a, no\)) are indeed weak with respect to PC placement, others (\(ili, ali, niti\)) are strong or variable (see above). I address issues related to strong and variable conjunctions in 5.5.4 and 5.5.5.

Another apparent inconsistency has to do with the finding that not only PCs, but introducers too are often free clitics. If PCs are peninitial because, as free clitics, they’re avoided at P edges, why then are free introducers not also peninitial?

To see this puzzle more clearly, consider first placement after a weak introducer, which requires some reordering to make PCs peninitial in P-phrase. In this example, this is achieved by raising silno ‘keenly’ to precede the PC ste:
Now consider placement after a strong introducer. In this case, I’ve claimed that no reordering is necessary because a strong introducer is inclusual, so that it shares its P-phrase with any PCs in its clause, making them peninitial in P-phrase. But if peninitial placement is motivated by phrase-to-word alignment—and if even strong introducers, as we’ve seen, can remain clitic preceding PCs—then shouldn’t a host raise sometimes, as in (b), to prevent parsing a free clitic introducer at a left P edge?

(110) No reordering after a strong introducer

\[
\begin{array}{c|c}
\text{CP} & \text{ALIGN-}(P,w) \\
\end{array}
\]
\[
\begin{array}{c}
\text{a. } \circ \{ \text{što } \text{vam se } \{ \text{prošle godine} \} \text{činilo}… \} \ 	ext{*!} \\
\text{b. } \rightarrow \{ \text{prošle} \{ \text{godine} \} \text{što } \text{vam se } \{ \text{činilo}… \} \\
\end{array}
\]

‘which to you last year seemed’

If the present account of PC prosody and placement is correct, then we must conclude that candidate (b) is ruled out on other than prosodic grounds. I therefore propose that host raising to a position above a clause introducer is blocked by constraints on movement. I’ve already claimed, since host raising is PF movement, that it’s governed by principles similar to those governing syntactic movement (see 5.2.5).

Similarly, I’ve discussed the evidence that the verb sometimes adjoins to other heads in its extended projection, including PCs and complementizers (see 4.5.5, 5.2.6, 5.3.4, 5.3.6). Yet even in putative adjoined structures, the verb precedes PCs, but follows...
complementizers. This suggests that some principle—perhaps scope—blocks CP-internal elements from preceding a complementizer.

In this section, I offered another argument for the free clitic analysis of PC prosody, based on alternations in PC placement after introducers. I proposed that strong and weak introducers fall respectively inside and outside a P edge at the left of the clause. PCs are then forbidden immediately following weak introducers because, as free clitics, they would otherwise interfere with the left-alignment of P-phrases to p-words.

5.5.3 \textit{Phonological evidence for introducer phrasing}

Next, I offer some phonological evidence for the phrasing of strong and weak introducers. I’ll present two arguments based on data from the received corpus, one from the parsing of introducers between pauses, and the other from co-promotion of introducers with peninitial clitics. These will support my claim that strong introducers share a P-phrase with any following PCs, while weak introducers don’t.

The first argument is based on the parsing of introducers between pauses. In the received corpus, when strong introducers occur between pauses, they promote:

(111) Interpausal strong introducers promote
   a. \textbf{Pà,} mà da ga níko od òstàlíh nè pítà, òn \textit{im} kàzuży…
   \textbf{then} at all \textit{c} him no one of remaining not asks he them tells …
   Then, when not one of those remaining asks him, he tells them… (MS:121)
   b. // \textbf{pà,} od stràha što \textit{se} òna ne òbžiré ná nj, pàdà i òn…
   // \textbf{then} from fear \textit{c} RFL she not looks back on him falls and he…
   // then, fearing that she might not turn to look at him, he fell too… (MS:119)
   c. // \textbf{tè,} mijèšajùći \textit{se} s vèselím glàsovima pòsleníkâ, tâkò \textit{je} jàsno …
   // \textbf{and} mixing RFL with happy voices workers thus \textit{AUX} clearly…
   // and, mixing with the happy voices of the workers, thus clearly did… (MS:75)
These appear, at first, to be cases of promotion by independence (see 4.3.4). \( Pa \) and \( te \), already following breaks, are separated from their clauses by parenthetical comma phrases. As a result, they find themselves between I edges, and must promote:

(112) Interpausal strong introducers promote by independence

a. \#_1 \ pȁ \ ##_1 \ ma \ da \ ga \ niko \ od \ ostáříh \ nê \ pîtä \ ##_1 \ ôn \ … \ #

b. \#_1 \ pȁ \ ##_1 \ od \ strâha \ što \ se \ ôna \ ne \ ôbzirê \ nâ \ nj \ ##_1 \ pâdâ \ … \ #

c. \#_1 \ tȅ \ ##_1 \ mijêšajúči \ se \ s \ vêsefîm \ glâsovîma \ pôslenîkâ \ ##_1 \ tâkô \ … \ #

The fact that \( te \) is monomoraic shows, moreover, that such promotion is forced by prosodic context, rather than by the weight of the introducer.

However, prosodic isolation alone isn’t enough to force promotion. We see this by the fact that weak introducers, in the same context, fail to promote:

(113) Interpausal weak introducers fail to promote

a. \( A, \) čêkâj ū, dok ūklopõmo môtiku ū šake!

\textbf{but} wait you while put in hoe in hands

But wait you, while we put a hoe in our hands! (MS:61)

b. \( I, \) ūstâvši, ćizvâdî iz špâga od čâkšîrê kûtîju…

\textbf{and} having stood takes out from pocket of trousers box …

And, standing, he took from the pocket of his trousers a box… (MS:57)

c. \( I, \) kao ūvêk, ôdmâh \( bì \) ūmû pô kući pôčêla …

\textbf{and} as always immediately \textbf{CND} there in house began …

And as always, she would immediately begin there in the house… (MS:123)

Even though \( a \) and \( i \) are isolated between pauses, they remain clitic. By the assumption that pauses necessarily coincide with I-phrase edges, we must conclude that they’re parsed at the edge of a recursive I-phrase:

82 ‘We put a hoe in our hands’: in other words, ‘you’re too fine for us’.
Interpausal weak introducers are parsed by a recursive I-phrase

a. #$ a #$ čěkāj tí #$ #1 dok … #$  
b. #$ i #$ úštěvší #$ #1 ţuvadţi … #$  
c. #$ i #$ kao ţuvěk #$ #1 ţədмāh … #$ 

The framework rules out the possibility that $a$ and $i$ might represent independent I-phrases, and yet not promote, because every I-phrase requires a head. That recursive I-phrases are possible is assumed in the PCT framework, by the violability of Nonrecursivity (see 1.3). See Ladd (1986), who proposes similar I-phrasings for English, based on edge phenomena like pauses and final versus nonfinal intonation.

Assuming that the recursive I-phrase analysis is correct, what does this indicate about introducer parsing in general? I propose that this difference in the interpausal parsing of strong and weak introducers derives from the presence of a P-phrase edge that separates weak introducers, but not strong ones, from the rest of their clause.

This proposal rests on at least two premises. One, that a left clause edge is left-aligned to a P-phrase, and two, that strong introducers are clause-internal, while weak ones are clause-external. The following diagrams depict the consequences of these assumptions in contexts following a pause, and preceding a parenthetical:

Strong and weak introducers between pauses

a. strong introducer: #1 {p (på) } #1 {p od (stràha) … } … #  
and [clause then ] [CnmP from fear ] 
b. weak introducer: #1 i #1 {p kao (řuvěk) } ## #1 {p … } … #  
and [CnmP like always ] [clause … ]
First, the fact that both *pa* and *i* follow a pause means that they follow a left I edge. Further, the fact that they precede a parenthetical means that they precede a left I edge as well. The important difference is that strong *pa* is furthermore left-aligned with a P-phrase, because it’s at the left edge of a clause.

As a result, *pa* must promote, because it’s stranded between a left P edge and a left I edge. Since a P-phrase can’t contain an I-phrase, the stranded *pa* must be at least a P-phrase itself, and therefore a p-word, since the P-phrase must have a head. On the other hand, it isn’t clear whether *pa* is also an independent I-phrase, or is parsed by a recursive I-phrase. I assume the former, though either way *pa*’s promotion is assured.

Weak *i*, by contrast, has more options. It might promote or not, depending on whether the grammar prefers I recursion or function word promotion. It appears that the grammar of the received corpus prefers the former. In short, the fact that strong *pa, te* promote between pauses, whereas weak *i, a* don’t, is explained by the claim that strong and weak introducers are respectively inclausal and extraclausal, and the resulting differences in their phonological phrasing.

Another pattern that supports strong and weak introducers’ different orientations with respect to the clause also has to do with promotion. We’ve seen that both introducers and prepositions can promote by size—that is, when heavy (see 4.4.3, 4.5.2). However, their propensities toward promotion don’t covary across dialects. Whereas both word classes promote in the modern data, in the received data only introducers do:
In the received corpus, introducers sometimes promote, but prepositions never do:

<table>
<thead>
<tr>
<th></th>
<th>Piva-Drobnjak</th>
<th>received</th>
<th>modern</th>
</tr>
</thead>
<tbody>
<tr>
<td>light prepositions</td>
<td>proclitic</td>
<td>free ~ proclitic</td>
<td>free</td>
</tr>
<tr>
<td>heavy prepositions</td>
<td>proclitic</td>
<td>free ~ proclitic</td>
<td>promoted</td>
</tr>
<tr>
<td>light introducers</td>
<td>free</td>
<td>free</td>
<td>free</td>
</tr>
<tr>
<td>heavy introducers</td>
<td>free</td>
<td>free ~ promoted</td>
<td>promoted</td>
</tr>
</tbody>
</table>

Take these examples from the received corpus, which show that prepositions \((oko, preko)\) never promote in this variety, even when heavy:

\[(117)\] Prepositions don’t promote by size (received)

a. \(oko\) k\(\vec{r}sta\) \(\bi\) \(\upalkje\) sv\(\vec{c}ce\) \(\tiho\) \(\bar{g}orele.\)
   around cross CND lit candles peacefully burned
   Around the cross, lit candles would be burning peacefully. (MS:118)

b. // nu \(\ov\a\) s\(\vec{d}lj\ack\a\lida\) \(\preko\) k\(\vec{oj}\ih\) \(\je\) \(\tolik\o\) \(\j\d\d\) //
   // but these \(\vec{v}\)illage \(\vec{f}\)aces \(\vec{t}\)hrough which \(\vec{a}\)UX \(\vec{so}\) \(\vec{m}\)any \(\vec{s}\)orrow\(\vec{s}\) //
   // but these rustic \(\vec{f}\)aces, through which \(\vec{s}\)o \(\vec{m}\)any \(\vec{s}\)orrows \(\vec{h}\)ad (\(\vec{p}\)assed) // (MS:71)

Introducers, by contrast, can promote alone if heavy (a), or co-promote with PCs (b):

\[(118)\] Introducers can promote or co-promote by size (received)

a. \(\vec{u}\)\(\vec{s}\)ne \(\vec{s}\)u \(\vec{\z}\)\(\vec{\a}\)trept\(\vec{\a}\)le, \(\vec{\a}\)\(\vec{l}\)\(\vec{i}\) ne progov\(\vec{\o}\)ri\(\vec{\i}\)\(\vec{\e}\).
   lips AUX began to tremble but not began to speak
   (His) lips began to tremble, but didn’t speak. (MS:115)

b. \(\vec{u}\)\(\vec{i}\\vec{\i}\)\(\vec{\i}\)\(\vec{\i}\) m\(\vec{a}\)h i \(\vec{o}\)\(\vec{t}\)ac m\(\vec{\e}\)\(\vec{n}\)\(\vec{\u}\)\(\vec{\n}\) pr\(\vec{\e}\)\(\vec{\d}\)\(\vec{\d}\) nj l\(\vec{\u}\)\(\vec{l}\)\(\vec{\i}\)\(\vec{\c}\)u, \(\vec{d}\)\(\vec{a}\) \(\vec{m}\u)\(\vec{\o}\) \(\vec{\j}\)\(\vec{e}\) n\(\vec{\a}\)\(\vec{p}\)\(\vec{\u}\)\(\vec{n}\)\(\vec{i}\).
   at same time and father put before him pipe C \(\vec{h}\)i\(\vec{m}\) it fills
   At the same time, his father too put his pipe in front of him to be filled. (MS:62)

At first, this seems to contradict my claim that introducer and preposition parsing are governed by the same interface constraint analysis. By that analysis, the unmarked parse for free function words in the received corpus is free clisis, with preposition
proclisis a marked alternative enforced by special faithfulness (4.4.6). Why then do heavy complementizers sometimes promote in that variety?

The proposed P-phrasing model suggests an account of this. Consider first how a heavy preposition is parsed by P-phrases. According to the model, the left edge of PP determines a left P-phrase edge, but no such edge intervenes between the preposition and its NP. Therefore, a free clitic preposition violates only P-phrase Exhaustivity:

\[
\{ P \ \text{Oko} \ (k\text{\'rsta}) \ldots \} \\
[PP \ \text{around} \ [NP \ \text{cross} \ldots]
\]

Consider now the P-phrasing of a strong introducer, which by hypothesis lies just inside the left edge of the clause. I’ve argued that both the greater VP and the extended clause regularly determine left P edges. By this model, when an introducer in the region between these edges fails to promote, it must be parsed by a recursive P-phrase:

\[
// \{ P \ \text{ali} \ P \ (\text{ne progov\'ori\v{s}e}) \} \\
// \ [\text{clause but} \ [VP \ \text{not began to speak}] \}
\]

(I set aside for now a number of further issues connected with \textit{ali}. See 5.5.4, 5.5.5.)\textsuperscript{83}

By promoting, on the other hand, such an introducer creates an improved prosodic structure, either by serving as the head of an independent P-phrase (a), or, possibly, by reducing the severity of the layering violation between the two left P edges (b):

\textsuperscript{83} The introducer \textit{ali} comes with a number of additional complications. For one, it isn’t strictly speaking a strong introducer, but variable. For another, it isn’t strictly clause-internal, being a conjunction, though I’ll conclude that it’s treated as inclausal with respect to P-phrase determination. Nevertheless, \textit{ali} provides the best example for the present point, because it’s the most frequent heavy introducer.
(121) Introducer promotion improves introducer parsing between P-phrase edges

a. // {P (āli) }{P (ne progovòriše) } 

b. // {P (āli) }{P (ne progovòriše) } 

// [clause but [VP not began to speak] ]

However, while both of these structures represent improvements over that with unpromoted ali, it isn’t clear which actually occurs. Parse (a), where ali is an independent P-phrase, creates a perfectly layered structure by satisfying P-phrase Nonrecursivity. However, the fact that even promoted introducers are only weakly stressed might be taken to show that they don’t bear P-level prominence.

Parse (b), where ali is merely an independent p-word, seems more compatible with the level of prominence observed on promoted introducers. On the other hand, while it seems, intuitively, to improve layering by removing an Exhaustivity violation between two left P edges, no constraint in the current constraint set expresses a preference for such a structure. Nor can Exhaustivity alone motivate promotion here, because violations of EXH(P,s) are preferred to promotion in this variety (see 4.4.6).  

Nevertheless, this example suffices to support the claim that strong introducers are inclausal with respect to P-phrase determination, because this provides an explanation for why strong introducers, but not prepositions, promote in the received corpus.

To summarize the points of this section, I compared the promotion of the strong introducers pa, te, ali on the one hand, to that of prepositions and the weak introducers i, a on the other. This made apparent certain differences in their promotion patterns, which

---

84 One way of capturing this effect is by local constraint conjunction. For example, *[NRC(P) & EXH(P,s)]:\ ‘Within a single P-phrase, a P-phrase does not parse a P-phrase, and a P-phrase does not parse a syllable’.
I took as independent, phonological evidence for the claim that strong introducers, but not weak ones, are inclusal with respect to P-phrase determination.

5.5.4 **PC placement after strong conjunctions**

Before leaving the discussion of post-introducer placement, I’ll address the issues raised by strong conjunctions and variable introducers. For the most part, introducers are strong or weak with respect to PC placement as expected according to their syntactic category. That is, complementizer and adverbial introducers are inclusal and strong, and conjunctions extraclausal and weak.

However, this approach is complicated by a couple of irregularities. One is the attestation of variable introducers, which can behave either strong or weak. Another is that conjunctions aren’t consistently weak, but can also be strong.

Therefore, before leaving the discussion of post-introducer placement, I’ll take a closer look at these irregularities. I’ll argue that they’re consistent with the claims that only strong introducers are inclusal with respect to phonological phrase determination, and, by extension, that PC placement domains correspond to phonological phrases.

Let’s begin with the problem posed by strong conjunctions. Setting aside for the moment ali’s variable behavior, the strong conjunctions include ili, ali, and niti:

(122) Strong conjunctions (J corpus)

… ili je vjetrovima ispuhujući u svemir. ‘or blowing it by winds into space’

// ali se još uvijek dobro sjećam. ‘but still I always remember well’

// niti se uzdiže na bilo koji način. ‘nor praises himself in any way’
If the present approach is correct, then we must conclude either that *ili, ali, niti* don’t have the same extraclausal configuration as other conjunctions, or that they are, for some reason, treated as inclausal with respect to P-phrase determination. I’ll offer a couple of arguments in favor of the latter possibility, based on the strong conjunctions’ morphology, and on their interaction with other inclausal elements.

The argument from morphology is based on the observation that strong *ili, ali, niti* resemble the weak conjunctions *i, a, ni*, respectively, but with extra segmental material:

(123) Weak conjunctions (J corpus)

```
// i žao mi je što to nisam uradio.  ‘and I’m sorry that I didn’t do that’
// a nekima će pomoć biti smanjena.  ‘and to some help will be reduced’
… ni da bi ih prstom makli.  ‘wouldn’t lift a finger to move them’
```

In fact, it isn’t entirely accurate to call *ni* a weak introducer, because it never introduces IPs, that function being reserved to its counterpart *niti*. The only clauses that *ni* introduces are CP clauses, in which any PCs are hosted by a complementizer:

(124) Vežu i ljudima na pleća tovar teška bremena, a sami tie and people on shoulders loads heavy burden but selves

```
ni [da bi ih prstom makli].
nor [C CND them finger moved]
```

They tie heavy burdens to people’s shoulders, but they themselves would not even lift a finger to move them. (Svjetlo)

Nevertheless, I treat *ni* with the weak introducers because it patterns with them in other important ways, such as in undergoing proclisis, and having a strong counterpart.

Arguably, the extra morphology on *ili, ali, niti* is related to inclausal projections. To begin with *ili* and *ali*, these are at least etymologically derived from the conjunctions *i*
and a plus \textit{li} (Entwhistle and Morison 1949:158-159, Chernykh 1993 I:479). This raises the possibility that the \textit{li} in \textit{ili, ali} signals the presence of features that originate in the C layer of the conjunction’s complement clause, where I assume the PC \textit{li} to be (see 5.2.6).

Moreover, \textit{ili} alternates synchronically with \textit{li} in the \textit{whether…or} construction. In these examples, the first conjunct is marked by \textit{li}, while the second is introduced by \textit{ili}:

(125) \textit{Ili} alternates with \textit{li}

a. Ne znaju [ima \textit{li} \textit{ili} nema državljanstvo neke zemlje ].
not know [has Q or [not+has citizenship some country]
They don’t know whether or not he has citizenship in some country. (Avaz)

b. Bez obzira na to [da \textit{li ste} sami ] \textit{ili} [sa svojim drugovima] …
regardless on that [C Q AUX alone] or [with self’s friends ] …
Regardless of whether you’re alone or with your friends … (Jutarnje)

information on that [C Q AUX or [not+aux issued order] not+aux for public
Information on whether or not they issued an order isn’t for the public. (Avaz)

I characterize this as an alternation because \textit{li} is missing in the second conjunct. That is, whatever features are realized by \textit{li} in the first conjunct are, apparently, realized or licensed by \textit{ili} in the second. Since \textit{li} is clearly inclausal—presumably in C°—this pattern suggests that, though \textit{ili} is extrACLausal in the sense that it takes an entire clause as complement, it may be inclausal in the sense that it bears features originating in C°.

Significantly, this is exactly the sense that’s relevant for determining PC placement. I’ve proposed that P-phrases are left-aligned to extended lexical projections, which are demarcated by categorial features (see 4.6.4). That is, CP is an extended projection of V° because C° and V° share verbal features.
I therefore propose that, since ili arguably bears features originating in C°, ili is also part of the extended projection of V° in a way that its weak counterpart i isn’t. Then, by the accounts of P-phrasing and PC placement proposed here, ili is inclausal with respect to P-phrase determination, and strong with respect to PC placement:

(126) … \{P ili čemo stanovništvo podijeliti \} \{P žao mi je što to nisam uradio \} ‘or we’ll divide the population’
‘and I’m sorry that I didn’t do that’

Still, without a more precise account of strong conjunction syntax, these arguments are circumstantial. Moreover, I know of no argument for the featural content of ali parallel to that from the ili-li alternation. Nevertheless, I offer as plausible the match among ili and ali’s morphology, etymology, and strong introducer status.

We may make a similar argument that the extra morphology on the strong conjunction niti, as compared to its weak counterpart ni, is associated with inclausal features that make niti part of the extended projection of its clausal complement.

First, we may assume both niti and ni to be conjunctions because they’re in mostly overlapping distribution, both taking complements of almost any category, and usable in parallel in the neither…nor construction:

(127) Ni bure niti ljetne omare ne mogu prikriti tu tajanstvenost //
      nor storms nor summer swelters not can hide that mystique //
Neither storm nor summer swelter can hide that mystique // (Svjetlo)

However, a property that distinguishes these conjunctions is that niti, but not ni, can also negate an IP complement. For example, niti can negate a plain auxiliary like sam (a), but ni requires a same-clause negator (ne) or negative auxiliary (nisam) (b):
(128) Only *niti* negates IPs

a. *Niti sam* tako nešto napisao, *niti mi* slična bezočnost pada na pamet //
   *nor AUX* thus something wrote *nor me* similar insolence falls on mind //
   I have neither written anything like it, nor does such insolence occur to me // *(Politika)*

b. Nikad *nisam* bio član *ni* jedne partije i uvek *sam* mislio da…
   never *not+AUX* was member *nor* one party and always *AUX* thought *C* …
   I was never a member of a single party, and I’ve always though that… *(Ogledalo)*

In other words, *niti* can fulfill the same function as the regular negator *ne*. Then, if
*ne* is in the verb’s extended projection, as is apparent from V-to-Neg raising (see 4.3.3), it
seems that *niti* is too, when it negates clauses. In terms of the theory of extended
projection, *niti*, but not *ni*, can bear ‘verbal’ features (see 4.6.4). We may further deduce
that *niti*’s extra syllable (as compared to *ni*) corresponds to these additional features.

To summarize the evidence reviewed in this section, the strong conjunctions *ili*, *ali*,
*niti* differ from their weak counterparts *i*, *a*, *ni* not only in directly preceding any PCs
in a complement clause, but in bearing extra morphology that is shared with inclausal
elements: *ili* with the PC *li*, and *niti* with the negator *ne*.

I therefore propose that, while both strong and weak conjunctions are conjunction
heads, strong conjunctions can bear features that originate in a complement clause. This
makes them part of their complement’s extended projection, inclausal with respect to P-
phrase determination, and strong with respect to PC placement:

(129) Only strong conjunctions are grouped by P-phrases with a complement clause

\[
[ \text{Cnj}^\circ \{ \text{clause} \ldots \}]
\]

a. \{\text{p ili} \ ćemo stanovništvo podijeliti \  ‘or we’ll divide the population’\}
\{\text{p ali} \ se još uvijek dobro sjećam \ ‘but still I always remember well’\}
\{\text{p niti} \ sam tako nešto napisao \ ‘nor have I written anything like it’\}

385
I conclude that the exceptional behavior of strong introducers is consistent with the present accounts of PC placement and P-phrase determination. Further, the variety of PC placement domains seen so far—which include CP, IP, and the constituent formed by a strong conjunction and its IP complement—argues for the extended lexical projection, as opposed to the clause, as the better correlate of P-phrase.

5.5.5 **PC placement after variable introducers**

The other irregularity in post-introducer placement is that represented by the variable introducers *ali* ‘but’ and *jer* ‘because’, which can behave either strong or weak with respect to PC placement. That is, PCs in clauses introduced by *ali* and *jer* can immediately follow these introducers, or can follow some later element:

(130) Variable introducers

\[
\text{\emph{ali}} /\text{\emph{si}}/ \text{\emph{bili}} /\text{\emph{si}}/ \text{\emph{zlo\v{c}est prema meni}.} \quad \text{‘but they’ve been naughty to me’ (Q23)}
\]

\[
\ldots \text{\emph{jer}} /\text{\emph{je}}/ \text{\emph{ona}} /\text{\emph{je}}/ \text{\emph{njena mama}.} \quad \text{‘because she’s her mom’ (Q33)}
\]

I’ll propose, first, that variable introducers are also strong, in the sense that they’re grouped with their clause by P-phrasing. Second, instances where these fail to host PCs involve a high topic that intervenes between introducer and PCs. As in the discussion of strong conjunctions, the evidence for this proposal is suggestive rather than conclusive, but serves to recast the variable introducer phenomenon as fitting within the overall analysis proposed in this chapter, rather than as a problematic exception.
I’ll start by establishing just which introducers exhibit variable behavior, since there’s some disagreement on this point in the literature. Those introducers that have at one time or another been identified as variable include ali, jer, pa, and ili. However, it appears that of these, only ali and jer are variable in the sense intended here.\(^\text{85}\)

To begin with, a survey of the J corpus shows that only ali and jer ever fail to host the PCs in their clause, with only ali doing so with much frequency:

\begin{table}[h]
\centering
\begin{tabular}{llll}
\textbf{Variation in post-introducer PC placement (J corpus)} & \\
& occurrences & hosts PCs & fails to host PCs \\
ali ‘but’ & 316 & 61 & 24 \\
jer ‘because’ & 235 & 113 & 2 \\
pa ‘and, so, then’ & 166 & 66 & 0 \\
ili ‘or’ & 335 & 22 & 0 \\
\end{tabular}
\end{table}

Questionnaire data echo this pattern. Judgments on the following questionnaire items indicated that ali and jer can immediately precede PCs, or not:

\begin{itemize}
\item[(132)] Ali and jer are variable introducers
\item[(132a)] Mačkice su dobre, ali su bili loše prema meni. g: 1.0/3, ones: 5/5
Mačkice su dobre, ali bili su loše prema meni. g: 1.6/3, ones: 3/5
They’re good kittens, but they’ve been naughty to me. (Q23)
\item[(132b)] Jana je nominirala Mariju jer je ona njena mama. g: 1.0/3, ones: 8/8
Jana je nominirala Mariju jer ona je njena mama. g: 1.3/3, ones: 6/8
Jana nominated Marija because she’s her mom. (Q33)
\end{itemize}

By contrast, wordings where *pa* and *ili* don’t immediately precede the PCs in their clause were judged from partly to thoroughly ungrammatical:

(133) *Pa* and *ili* are only strong introducers

a. Ti *si* rođena na s(j)everu, *pa* si otporna na zimu.  
   ?Ti *si* rođena na s(j)everu, *pa* otporna *si* na zimu.  
   you AUX born on north so AUX used to on winter  
   You were born in the north, so you’re used to winter. (Q30)

b. Jesu *li* oni lagali nas, *ili* smo mi lagali njih?  
   *Jesu* *li* oni lagali nas, *ili* mi *smo* lagali njih?  
   AUX Q they lied us or AUX we lied them  
   Did they lie to us, or did we lie to them? (Q8)

It seems, then, that only *ali* and *jer* are associated with variable PC placement.86

As to the question of why *ali* and *jer* are variable in this way, a look at some of the cases from the J corpus where these don’t directly precede PCs suggests a solution in terms of their interaction with topics. First, the counts in (131) show that those cases where *ali* and *jer* fail to host PCs are less frequent than those where they do host PCs, which may indicate that those where they fail are in some way marked or unusual.

Second, although it’s difficult to generalize exceptionlessly, in many cases where *ali* (a,b) and *jer* (c) fail to host PCs, the element that intervenes between introducer and PCs is a deictic phrase (in brackets) that refers to something previously mentioned:

(134) Some contexts where *ali* and *jer* fail to bear PCs

a. Ne protivimo *se* mi da *se* kod nas uvede, recimo, pravni sistem Austrije, 

---

86 Claims that *pa* and *ili* are variable are based, apparently, on examples where these are used as independent interjections, rather than as clause introducers. For example, *Zašto nisi kupio voće?—Pa, /*saml kupio */saml jabuke. ‘Why didn’t you buy fruit?—But, I bought apples.’ (Browne 1975:117-118).
‘We don’t oppose the introduction here of, let’s say, the justice system of Austria, Germany, France, Italy, but [such solutions] are really not ideal.’ (Jutarnje)

b. Recimo da je to tačno, kao što smo uvereni da jeste, ali [onda] se nameće pitanje-odgovor ///

‘Let’s say that that’s right, as if we were sure that it is, but [then] that forces the (following) question and answer’ (Ogledalo)

c. Naši će sugovornici prvo posjetiti svoju tetku, najstariju žensku osobu u obitelji, jer [takav] je običaj u svim hrvatskim kućama u Sarajevu.

‘Our interlocutors will first visit their aunt, the oldest female person in the family, for [such] is the custom in their Croatian households in Sarajevo.’ (Jutarnje)

I therefore propose that these interveners are analyzable as resumptive topics.

This recalls the discussion of late placement in 5.4, which touched on a similar interaction between topics and PCs. There, I proposed that the topic construction described by Zec and Inkelas (1990)—in which a topic stands as an individual P-phrase, causing late placement of any following PCs—involves an inclausal topic.

Take this example of topicalization, repeated from 5.4.5:

(135) [U Rio de Žaneiru] ostali su dve godine.
[in Rio de Janeiro] stayed two years
In Rio de Janeiro, they stayed two years.

Let’s consider the possibility that the topics that cause late placement involve the same position as those elements that intervene between variable introducers and PCs. This would mean, first, that the relevant topic position is between jer—which I take to be a complementizer in C°—and the PCs.

Second, since PCs appear directly following the interveners that separate them from ali and jer, rather than later, this would mean that topics aren’t necessarily parsed as

87 Original: ‘rješenja se zaista’.
separate P-phrases. That is, some topics form separate P-phrases, in which case they can’t host PCs, causing late placement, whereas other topics don’t form P-phrases—perhaps because they’re too light to constitute good P-phrases—and do host PCs.

For our present concerns, then, I conclude that variable introducers don’t pose a problem for the present account of PC placement. At the least, it’s apparent that cases where *ali* and *jer* fail to host PCs have some explanation other than whatever accounts for the more basic distinction between strong and weak introducers. If, on the other hand, the above speculation on late and variable placement is on the right track, then it may point the way to further progress on the properties of topics in BCS.

### 5.5.6 PC placement in sub-finite domains

One result of this examination of correlations among PC prosody, PC placement, and P-phrasing is to add further evidence to that cited from barriers to clisis in chapter 4, for the claim that P-phrases correspond to extended projections of lexical heads. But the arguments from barriers to clisis on the one hand, and from PC placement on the other, so far match only with respect to projections of V°—namely, CP, IP, and the constituent formed by a strong conjunction and its IP complement.

Here I’ll show that PC domains also include infinitival and participial clauses, and noun phrases with a PC possessor, which I’ll refer to collectively as *sub-finite domains*. Taken with the arguments from barriers to clisis, these will support the account of P-phrase determination against a broader range of constituents.

As I noted in 1.2.5, BCS dialects differ in the extent to which they make use of infinitival verbs, preferring finite constructions in some, most, or all cases. Nevertheless,
in dialects and styles where infinitives are possible, one finds that infinitival clauses too can project PCs (Browne 1975, Čavar and Wilder 1999, Bošković 2000).  

Such infinitival PC domains include clausal complements to nouns (a), and clauses that serve as arguments in a higher clause (b):

(136) Peninitial placement in infinitival clauses

a. Želja [/ju/ dati /ju/ Mariji] bila je velika.
   wish [ to give it Marija] was AUX great
   The wish to give it to Marija was great. (Čavar and Wilder 1999:450)

b. // toliko je isto važno [pitati ih što su radili sve ove godine] //
   // just as AUX equally important [to ask them what AUX did all this year ] //
   // it’s equally important to ask them what they’ve done all this year // (Jutarnje)

(In this section only, I gloss infinitives explicitly as such, e.g. dat ‘to give’.)

These examples show that PCs are peninitial within the infinitival clause, just as they are in finite clauses. Further, though the PCs’ host in such clauses is often the verb, it can in principle be any clause-initial element, such as an object (a) or adverb (b):

(137) PCs in infinitival clauses don’t necessarily follow their verb

a. Želja [/ju/ Mariji /ju/ dati /ju/ ] bila je velika.
   wish [ Marija it to give ] was AUX great
   The wish to give it to Mary was great. (Čavar and Wilder 1999:450)

b. … nije preporučljivo [dugo se izlagati suncu prije kupanja ].
   … not+AUX advisable [ long RFL to expose sun before swimming]
   … it is not advisable to expose oneself to the sun for a long time before going in swimming. (Browne 1975:132)

---

88 For further discussion and analysis of infinitival PC domains, see Browne (1975:122-124), Čavar and Wilder (1999:449-451), and Bošković (2000:99-100, n27).

89 This use of ju is nonstandard. In the standards, the feminine accusative is usually je (see 5.2.2, 5.2.3).
In other words, while other elements of the embedded clause are fairly freely reordered, PCs must remain peninitial. The question, then, is whether the explanation for the peninitial effect in infinitival clauses is the same as the one that I’ve proposed for finite clauses: that the left edge of the clause corresponds to a P edge.

In this connection, it’s significant that infinitival complements to verbs don’t form independent PC domains. Rather, any PCs projected by the lower clause are peninitial in the higher clause. Take this example, where we find a single cluster containing both je from the matrix clause, and me from the subordinate infinitival clause:

(138) Ivan me je želio [vidjeti].
Ivan me AUX wanted [to see]
Ivan wanted to see me. (Browne 1975:122)

The pair of examples in (139) also helps to illustrate this difference among infinitival domains, comparing two clauses with the same verb (riješiti se), but differing in whether the clause is a complement of a verb (mogao) or an adjective (nemoguće). As a complement of a verb, riješiti shares its PC se with the higher verb (a), but as a complement of an adjective, it keeps se inside—and peninitial in—its own clause (b):

(139) Infinitival complements of a verb and an adjective
a. Problem opskrbe mogao bi se [riješiti i spajanjem...] problem commission could CND RFL [to resolve and merging ...] The problem of the commission could be resolved also by merging... (Dnevnik)

b. // jer je nemoguće [riješiti se tog virusa preko noći]. // because AUX impossible [to resolve RFL that virus overnight ] // because it’s impossible to get rid of that virus overnight. (Jutarnje)
This is exactly as predicted if PC domains are P-phrase aligned to extended lexical projections. Whereas an infinitival clause is able to form an extended projection with a matrix verb because they share categorial features, it can’t form an extended projection with a matrix noun or adjective, instead determining an independent extended projection, left P-phrase edge, and PC placement domain.

On the other hand, PC placement with respect to infinitival complements of verbs is merely neutral on the question of how P-phrasing affects PC placement, because their failure to determine independent PC domains likely comes about not by P-phrasing, but because such clauses don’t even project their own PCs, simply falling under the scope of the higher verb’s inflection. It’s therefore the behavior of infinitival complements of nouns and adjectives that’s crucial to the point at hand.

Still, one may ask whether there’s evidence from phonological phenomena as well that peninitial placement within infinitival domains is conditioned by a P edge. On this point there’s some disagreement. Take this sentence, from Bošković:

(140) Želja [knjigu joj dati ] bila je velika.
    desire [book her to give] was AUX great
    The desire to give her a book was great. (Bošković 2000:100, n27)

In reference to the peninitial placement of joj in this example, Bošković reports an intuition that the left edge of the infinitival clause corresponds to a prosodic break, though Čavar and Wilder report the opposite intuition for similar examples:

… it seems to me that, in contrast to infinitival complements of verbs, infinitival complements of nouns form separate I-phrases… In my judgement, a small pause needs to follow želja in [Želja knjigu joj dati bila je velika], an indication of an I-phrase boundary. (Bošković 2000:100, n27)
There is no justification for claiming that nouns are (always) separated from the infinitives they govern by a prosodic boundary of any strength. (Ćavar and Wilder 1999:455)

In further support of this observation, Bošković offers an argument from /j/ degemination, which is proposed by Radanović-Kocić to be sensitive to I-phrase edges (see 4.6.2). Here, a putative break at the left edge of the infinitival clause, responsible for the peninitial placement of ga, moreover blocks /j/ degemination:

(141) Pokušaj [juriti ga peronom] je uzaludan. /jj/, */j/
    attempt [to chase him platform] AUX futile
    The attempt to chase him down the platform is futile. (Bošković 2000:100, n27)

I take Bošković’s evidence, together with the account of PC placement developed throughout this chapter, to support the claim that peninitial placement in infinitival clauses is conditioned by a prosodic break. However, as in the analysis of late placement, I differ from Bošković in identifying the break as an edge of P-phrase, rather than I-phrase. Apart from the arguments offered in chapter 4 that clauses determine P-phrases, Ćavar and Wilder’s comments point more to the weaker breaks characteristic of P-phrase, than to the stronger breaks characteristic of I-phrase.

Next, another type of sub-finite PC domain is the participial clause. The bracketed clauses in these examples are headed by active participles (brinući, naslađujući), which determine their own PC domains, separately from any matrix PCs:

(142) Peninitial placement in participial clauses
    a. Otišla sam [brinući se ].
       left AUX [worrying RFL]
       I left worrying. (Radanović-Kocić 1988:131)
Although I know of no phonological evidence for a P edge at the left edges of participial clauses like that cited above for infinitivals, I assume that peninitial placement has the same explanation in both domains, based on their other similar properties. These properties include, apart from non-finiteness, defective PC projection.

That is, while infinitival and participial clauses can project their own PCs, these domains are defective in that their PCs are limited to pronominals and reflexive se. Auxiliary PCs and li, by contrast, are found only in finite clauses. Assuming, then, the syntactic representations adopted in 5.2.6, we may analyze these clauses as projecting only up to Object Agreement, omitting Subject Agreement, Tense, and C.

This is of significance also for the overall point in this section, that the various domains in which PCs can be peninitial—which now include CP, AgrSP, TP, AgrOP, and the constituent that is a strong conjunction and its complement—don’t correspond to any one syntactic category, but are unified by their correspondence to P-phrase.

Last, I’ll discuss one other sub-finite PC domain, the possessed noun phrase. This is a construction in which the possessor of an NP is expressed by a dative pronominal PC inside the NP. These examples show that such PCs are peninitial in their NP, and disjoint from matrix PCs, whether the NP comes early (a) or late (b) in the matrix clause:

(143) Peninitial placement in possessed NPs
   a. [Uplakano joj lice ] zažarilo se //
      [tearstained her face] reddened RFL //
      Her tearstained face reddened // (MS:120)
b. "// a za tim se još njekoliko časaka pronosilo zrakom [brbljivo im gakanje]. // and after RFL still some moments carried air [babbling them honking] // and for a few moments after there still came, carried on the air, their babbling honking. (MS:73)

This construction is archaic, though it’s attested as late as the 1800s (Radanović-Kocić 1988), and occurs in at least five of the six selections of the received corpus, whose authors were born in the mid-to-late 1800s (see 1.4.3). In modern BCS, these possessive meanings would be expressed by full pronouns, e.g. njeno uplakano lice ‘her tearstained face’, njihovo brbljivo gakanje ‘their babbling honking’.

These are some further examples of internally possessed NPs of various sizes, including lone nouns (a), nouns with adjectives (b), and NPs with prepositions (c):

(144) Peninitial placement in possessed NPs (received)

a. sinčić joj ‘her son’
   haljine joj ‘her dress (GEN)’

b. cela joj snaga ‘all her power’
   crna joj šamija ‘her black scarf’
   rodne nam grude ‘our native soul (GEN)’
   bračnoga mu života ‘his married life (GEN)’

c. sa sinčićem joj ‘with her son’
   na isušenu mu licu ‘on his wizened face’
   na suhu joj ručicu ‘on her dry hand’

Interestingly, while NP-internal PCs are peninitial with respect to nouns (a) and prenominal adjectives (b), prepositions are apparently ignored in the determination of peninitial placement (c). PC placement with lone nouns and in adjective-noun sequences, then, is as expected under the P-phrasing account. In the absence of a preposition, the

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90 Radanović-Kocić (1988, appendix) offers a detailed comparison and analysis of the several possessive constructions attested in BCS, including the possessive dative in the modern language.
account predicts P edges at the left edges of NP and AP—the extended projections of N° and A°, respectively—which happen to coincide. The PCs in (a) and (b) are then peninitial with respect to these edges.

On the other hand, the pattern of PC placement in possessed NP complements of prepositions isn’t as expected under the account as it stands. If N° projects to PP, determining a P edge that groups prepositions with their NPs, then we might expect PP-internal PCs to follow the preposition, e.g. *[\(PP\ na\ joj\ suhu\ ručicu_N\)].

To see why we might expect this, consider the phrasing of a PP containing a preposition, PC, adjective, and noun (a), as compared to that of a small CP containing a complementizer, PC, adverb, and verb (b):

(145) Expected P-phrasings of CP and PP

\[
\text{a. } \begin{array}{c}
\text{PP} \\
\text{P} \\
\text{Ag} \\
\text{na} \\
\text{joj} \\
\text{AP} \\
\text{ručicu} \\
\{ \\
\text{suhu} \\
\} \\
\{ \\
\} \\
\end{array} \\
\text{b. } \begin{array}{c}
\text{CP} \\
\text{C} \\
\text{AgrS} \\
\text{da} \\
\text{su} \\
\text{AdvP} \\
\text{dugo} \\
\{ \\
\} \\
\{ \\
\} \\
\end{array}
\]

‘on her dry hand’ ‘that they danced a long time’

I’ve starred (a), since the surface placement of \textit{joj} is after \textit{suhu}. Nevertheless, I assume this to be the word order produced by the syntax, by the following reasoning.

Since possessive PCs have the same form as dative pronominal PCs, which are assumed to occupy Object Agreement heads above VP (see 5.2.6), I assume that possessives occupy parallel Agreement heads above NP, possibly forming chains with
possessor features in the specifier of NP. By these assumptions, the nodes \( \langle N^o, \text{AgrP}, \text{PP} \rangle \) form an extended projection analogous to that of \( \langle V^o, \text{AgrSP}, \text{CP} \rangle \).

The P-phrasing account then predicts left P edges at PP (that is, \( N^{ext} \)), and at AP (that is, \( A^{ext} \)), thus sandwiching preposition and PC between two left P edges. As for the phrasing of CP, we predict P edges at CP (\( V^{ext} \)), AdvP (\( Adv^{ext} \)), and VP (see 4.5.5, 4.6.4, 5.5.3), which likewise sandwich complementizer and PC between P edges.

If this is correct, then we further expect, since the grammar allows a PC to follow a complementizer, that it should similarly allow one after a preposition. Why then does the adjective *suhu* separate preposition from PC (*na /\(^*\)joj/ suhu /\(^*\)joj/ ručicu*)?

First, this problem can’t be solved by supposing that PC possessors are generated between adjective and noun, as opposed to between preposition and noun, because we would still have to explain why the PC doesn’t remain prenominal when there’s no adjective, e.g. *sa /\(^*\)joj/ sinčičem /\(^*\)joj/ ‘with her son’. It seems, rather, that the grammar actively avoids putting a PC after a preposition.

Alternatively, we might suppose that a left P edge is built not at PP, but at AgrSP, requiring some reordering to make *joj* peninitial in its P-phrase. However, this would contradict the evidence from barriers to clisis, which indicated that no P edge separates a preposition from its NP (see 4.4.6, 4.5.7, 4.6.4).

Yet another possibility is that PCs are avoided after prepositions so that prepositions can procliticize to a following lexical word. However, it’s not clear how the grammar might simultaneously prefer preposition proclisis and PC enclisis, without resorting to subcategorization. In any case, preposition proclisis is an inconsistent pattern in the received corpus, especially to adjectives (see 4.4.1, 4.4.2).
It seems to me, rather, that the most likely explanation is that the impossibility of placing a PC directly after a preposition has to do with the preposition’s case-assigning properties. That is, a preposition must assign case to its complement by adjacency, and this condition applies at PF as well as during syntax. This accounts both for the avoidance of PCs after prepositions, and for the observation that prepositions must be adjacent to at least some portion of their complement (see examples in 5.2.5).

The outcome of this discussion of sub-finite PC domains is to garner further support for two of the main claims of this chapter. First, some observations by Bošković tied phonological evidence for P-phrases to PC placement in infinitival clauses, which I took to support the claim that the various domains within which PCs are peninitial are most simply characterized as P-phrases.

Second, the addition of sub-finite domains to those others that are argued to determine P-phrases helps to show that the various syntactic correlates of P-phrase are most simply characterized as the extended projections of lexical heads (lex\textsubscript{ext}). For example, infinitival complements of nouns and adjectives, but not of verbs, represent independent lex\textsubscript{ext}s, and are therefore independent domains of PC placement.

Another observation that highlights the significance of lex\textsubscript{ext} has to do with the kinds of PCs projected by different domains. We’ve seen that PC domains from CP to possessed NPs are progressively more defective, in the sense that they project a subset of the PC types that are found in larger domains:
Attested PC types across PC domains

<table>
<thead>
<tr>
<th>domain</th>
<th>$li$</th>
<th>AUX</th>
<th>$se$</th>
<th>pronominal</th>
</tr>
</thead>
<tbody>
<tr>
<td>finite CP clause:</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>finite IP clause:</td>
<td>—</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>non-finite clause:</td>
<td>—</td>
<td>—</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>possessed NP:</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>yes</td>
</tr>
</tbody>
</table>

Besides reflecting the hierarchical organization of PC projections, this gallery of defectivity shows that PC domains comprise a variety of functional projections that include CP (headed by $li$), AgrSP (headed by an auxiliary PC), TP (headed by $je$), and AgrOP or AgrP (headed by a pronominal PC or $se$), all of which sometimes determine left P-phrase edges that PCs can’t immediately follow.

When we compare these to the P-determining phrases that revealed themselves as barriers to clisis—CP, IP, VP, PP, and NP—we find only partial overlap. Therefore, the significance of these two sources of evidence for P-phrases—that is, from barriers to clisis and from sub-finite domains—isn’t that they point to the same syntactic phrases, but that they’re most easily generalized over as being extended lexical projections.

5.5.7 Summary

In this final analytical section of the dissertation, I adduced further evidence for the proposed account of P-phrase determination. To the evidence from chapter 4 concerning P-phrases’ role as barriers to proclisis, and that from 5.4 concerning the utterance-final effect and late placement, I added arguments based on PC placement following introducers, and in sub-finite domains.

First, the analysis of PC placement after strong versus weak introducers indicated that the domains within which PCs are peninitial include IP, CP, as well as the
constituent formed by a strong conjunction and its complement, indicating that P-phrases aren’t aligned strictly to clauses, but to extended projections (5.5.2-5.5.5).

Second, PC placement in sub-finite domains supported the earlier claim that those syntactic constituents that determine left P edges include CP and IP, though not all the P-determining constituents that were identified in chapter 4 could be confirmed by evidence from PC placement. However, I took the diversity of PC domains as a further argument that these domains are best characterized as extended lexical projections, rather than as corresponding to some particular syntactic phrasal category (5.5.6).

A further result was to point to the existence of an inclausal topic position preceding the PCs, based on parallels between the analyses of late placement after topics (5.4.5) and of variable placement after the introducers ali and jer (5.5.5).

I take the agreement between the evidence from barriers to clisis on the one hand, and from alternations in PC placement on the other, to support the proposed P-phrasing model, and by extension, the claim that the domains within which PCs are peninitial—whether clauses or NPs, finite or non-finite, or including or excluding an introducer—have in common that they correspond to P-phrases.

5.6 Conclusions

Similarly to the investigation of proclisis in chapter 4, the investigation of peninitial clisis in chapter 5 has resulted in a picture of PC parsing and placement significantly different from the traditional one. Perhaps most surprising is my conclusion
that, in contrast to their traditional characterization as prosodic word-internal enclitics, the PCs are in fact typically free clitics parsed directly by phonological phrase.

To be precise, I proposed that PCs are free following nouns and adjectives, but are probably enclitic after verbs (5.3.4, 5.3.6). I characterize free clisis as the typical case, taking enclisis to verbs to result from overt V-to-I adjunction. Following introducers, PCs may be free, or may co-promote with the introducer, depending on dialect (5.3.2, 5.5.2).

The arguments for these findings were based both on word-level phonological phenomena, and on phrase-level alternations in PC placement. Important word-level evidence included failure of rightward tone shift (5.3.3), future sandhi (5.3.4), and attestation of PCs after unstressed, prepausal introducers (5.3.2, 5.5.2).

Arguments from phrase-level phenomena depended on the premise that peninitial placement is sometimes motivated purely for prosodic reasons. I argued that peninitial placement is motivated not to make PCs enclitic, but to avoid parsing them at the edges of P-phrases. Significant arguments for this claim came from alternations in PC placement, including the utterance-final effect (5.4.2), late placement (5.4.3), placement after introducers (5.5.2), and placement in sub-finite PC domains (5.5.6).

Taken with my conclusions from chapter 4, the investigation of peninitial clitic prosody supports both the attestation of free clisis in addition to enclisis and proclisis, and the view that word, phrase, and clitic prosody are determined by how a general interface grammar parses morphosyntactic structures. In the next, concluding chapter, I situate these findings within the overall investigative goals of the dissertation.
CHAPTER 6
CONCLUSIONS

In this dissertation, I've sought answers to some questions concerning prosodic clisis in Bosnian, Serbian, and Croatian. How are clitics parsed by prosodic structures, and how is clitic prosody determined by the grammar? In doing so, I build on previous studies by looking at several categories from across the clitic system, by undertaking an exhaustive review of the evidence for clisis, and by accounting for clisis using representations and constraints provided by Prosodic Clitic Theory.

In support of the investigation of clitics’ surface representations, I began in chapters 2 and 3 with a reanalysis of word accent in the received Vukovian standard. This produced several important tools for discovering clisis patterns. Based on my analysis of leftward tone spread, I argued that accent transfer is the key diagnostic that distinguishes internal proclitics from all other clitic parses (2.4.6, 2.4.8). The analyses of rightward tone shift (3.3.7) and of the licensing of nuclear length (3.4, 5.3.5) provided important arguments for the prosodic representations of the peninitial clitics.

I then applied these diagnostics in chapters 4 and 5 to the core investigation of prosodic clisis. I found, first, that many words that are considered proclitic or enclitic are in fact free clitics parsed directly by phonological phrase (4.4, 4.5, 5.3, 5.4). Whereas the most important evidence for the parsing of the traditional proclitics came from word accent, the evidence for peninitial clitic parsing came both from accent (5.3), and from alternations in PC placement with respect to the ends of utterances (5.4.2), fronted constituents (5.4.3), clause introducers (5.5.2), and sub-finite domains (5.5.6).
Concurrently with the analysis of clitics’ prosodic representations, I argued that these representations are determined by the interaction of general interface and prosodic constraints, rather than by arbitrary subcategorizations. Crucial to the case for interface constraints were, first, comparisons of parsing patterns across function word categories, which showed that prosodic differences among function words are based on their syntactic configurations and phonological shapes, and second, comparisons across dialects, which helped to select among alternative formal accounts.

I also found that phonological phrases exercise significant influence on function word parsing. I argued that parsing differences across function word categories derive from their syntactic configurations in the clause, and from the division of the clause into P-phrases. This therefore required, in addition to the interface analysis of word and clitic prosody, an interface analysis of P-phrase determination (4.6, 5.5).

I proposed that P-phrasing in BCS is determined largely by a constraint that builds P-phrase edges at the left edges of extended lexical projections. As a result, those constituents that determine left P edges include extended projections of \( N^o \) (NP, PP), \( A^o \) (AP), and \( V^o \) (VP, IP, CP), as well as the constituents consisting of the strong conjunctions \( ili, ali, niti \) and their complements, which form extended projections because these conjunctions bear morphology associated with incausal features (5.5.4).

The evidence for this came both from barriers to clisis, and from observed domains of PC placement. For the traditional proclitics, P-phrases are significant mainly as barriers to proclisis, so that words that are more peripheral in the clause, especially introducers, are less likely to be proclitic, and more likely to be free.
For the PCs, P-phrases are the domains of peninitial placement. I argued that the peninitial effect results not from a requirement that PCs be enclitic, as is standardly assumed, but from the avoidance of free clitics at P-phrase edges, where they would interfere with the proper alignment of P-phrases to prosodic words. The pattern of PC placement is therefore most succinctly stated as making PCs peninitial in P-phrase.

This study has consequences both for the study of the prosodic phonology of BCS, and for crosslinguistic theories of the syntax-phonology interface. For BCS, the present findings amend traditional descriptions of the clitic system to include not only proclisis and enclisis, but also free clisis, and provide diagnostics for the attestation of P-phrases in BCS, for which evidence is scarce.

For the theory of the interface, the analysis of word, phrase, and clitic prosody proposed here confirms the significance for prosodic structure-building principles of the distinction between lexical and functional categories (Selkirk 1984), adding to this the distinction between heads and extended projections (Grimshaw 1991). Further, these principles are argued not to refer to clitics or to functional categories as such (Selkirk and Shen 1990). Rather, function word parsing can be seen in formal terms as subordinate to, and serving to optimize, the parsing of lexical words and phrases (Selkirk 1995a).

On the other hand, the phenomenon of prosodic clisis was shown to intersect with several other phenomena that played important roles in the account, but which present numerous additional issues that require further exploration. The proposed analysis of P-phrase determination, for example, has yet to be tested on the phrasing of more complex syntactic phrases. Further, my analyses of *ne* promotion (4.3.6) and conjunction proclisis
(4.5.7) rested on the claim that prosodic focus can be realized on the syntactic head of a focused phrase, which so far lacks independent motivation.

Another rather tentative claim that emerged from this study concerned the syntactic configuration of topics. I proposed to account for late PC placement after topics (5.4.5), and for variable PC placement after ali and jer (5.5.5), in part by supposing the existence of an inclausal topic position that precedes the PCs. However, the addition of other, purely syntactic arguments would strengthen this claim.

Last, I offered some arguments that the PCs’ peninitial placement is ensured, when necessary, by phonologically motivated PF movement or ‘host raising’, based in particular on patterns in host splitting (5.2.5). Indeed, the premise that PC placement provides evidence for PC parsing depends on the possibility of such movement. However, I didn’t try to identify with any precision the syntactic principles that constrain host raising, nor how these interact with the prosodic principles that motivate it.

I therefore leave these latter issues to future work.
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