# The unbearable lightness of clitics

Ionova, A.

# CHAPTER 2

## Types of clitics: prosody and syntax

The focus of this dissertation is the interaction of phonologically weak items, or clitics, and ellipsis. This chapter discusses some problematic aspects with respect to the definition of clitics and introduces different types of clitics, both in syntax and prosody, with special focus on second position clitics in Serbo-Croatian and Slovenian.

## 2.1 Defining clitics

The term "clitics" has been used to refer to a vast and highly diverse group of elements, and it is challenging to provide a definition that will encompass all the properties of different classes of clitics. This raises a question of whether there is a uniform class of clitics as such. Using the words of Spencer & Luis (2012), "...the notion [of clitic] is often a useful one in description but it's difficult to justify setting up any universal category of clitic or clitichood" (ibid.:321).

While I am not aware of any formal and definitive definition of clitichood, the literature on cliticisation contains many observations on what clitics are, or, rather, what they are not:

(1) Spencer & Luis (2012:i):
In most languages we find 'little words' which resemble a full word, but which cannot stand on their own. Instead they have to 'lean on' a neighbouring word...

(2) Franks (2016:91):
Yet however elusive any comprehensive definition of clitics may be, one

thing is clear: clitics are defective. That is, clitics are different from other words in that they cannot do something other, 'normal' words can do.

(3) Anderson (2005:13):
When phonological material does not have enough prosodic structure to be integrated into the prosodic structure of the whole utterance on its own (by virtue of not being organized into a prosodic word), it must be dependent on some adjacent material that can provide the necessary bridge between lower- and higher-level prosodic categories. This sort of incorporation into an adjacent word is just the behaviour we associate with clitics (in the phonological sense), which we can thus propose to treat as *prosodically deficient* forms.

(4) Tomić (1996:811):
Clitics have traditionally been defined as elements forming accentual units with the preceding or following word and, more recently (cf. Crystal 1980), as elements "that are structurally dependent on neighboring words".

(5) Zec (2009:139):
What emerges from this vast body of work is that clitics are more easily characterized by what they are not, than by what they are. Elements referred to as clitics systematically defy the general distributional and other principles that otherwise hold in the grammar. But while the phonology and syntax of clitics appears to be unlike the phonology and syntax of other linguistic elements, there are no obvious phonological or syntactic properties that uniquely characterize the class of clitics.

### 2.1.1 Kinds of deficiency

The most prominent property of clitics is their deficiency. Most often this deficiency is attributed to the phonological status of clitics: clitics are defective in their phonological representation and therefore have to prosodically combine with an adjacent non-clitic word.

It has been proposed by various authors that it is not only prosodic deficiency that is responsible for the special status of clitics. In fact, phonological deficiency can be a mere reflex of special syntactic or morphological properties of clitics. Franks (2016) suggests that clitics are special with respect to sounds, meaning, and syntax and are minimal vocabulary items in a sense that on every level they only have a minimum amount of structure:[1]

[1]The properties of clitics introduced by Franks (2016) do not differentiate between clitics and affixes: affixes are phonologically, semantically, and syntactically minimal in the same sense. The differences between clitics and affixes, however, are of no particular concern in this dissertation; for details see Zwicky & Pullum (1983) and the discussion in Anderson (2005).

1. phonologically, clitics lack prosodic structure above the syllable (i.e. they are not prosodic words);
2. semantically, clitics only have purely grammatical (but not lexical) meaning;
3. syntactically, clitics are non-projecting heads.

Neither phonological, semantic, or syntactic properties of clitics appear to be defining on closer inspection.

*Phonological deficiency* of clitics results in their inability to bear stress or being targeted by rules of stress assignment (Franks 2016). It has been noticed, however, that in some cases clitics can end up bearing stress. Consider the example in (6) from Macedonian, a language where clitics (such as pronouns and auxiliaries) have to be adjacent to the verb. In some environments, in particular under negation, when a clitic cluster occurs between negation and the verb, one of the clitics can carry stress if it happens to be the antepenultimate syllable, which almost always carries stress in Macedonian. This pattern can be explained if it is not a clitic by itself that carries stress; rather, the whole verbal complex, including negation and the clitic cluster, becomes the domain for the stress assignment.

(6) Stressed clitics in Macedonian (Spencer & Luis 2012:89)

a. Ne *mu* *gó* dade.
NEG to.him it he.gave
'He didn't give it to him.'

b. Ne *ću* *sé* venča.
NEG FUT REFL marry
'They won't get married.'

A more problematic case comes from Slovenian, a language with second position clitics. Slovenian clitics are famous for their ability to be either enclitics or proclitics, which is not typical cross-linguistically. But more surprising is the fact that Slovenian clitics can occur with no phonological support at all, as in the answer to a yes-no question in (7). Obviously, in these cases the clitics are not phonologically defective: they become 'normal' words, bearing their own stress. Note that in cases like (7) a clitic form (*ga*) of the pronoun should be used, not a strong form (*njega*).[2]

(7) Q: Ali ga poznaš?
Q him.ACC know.2SG
'Do you know him?'

A: ***Ga***.
him.ACC
'I do'. (Lit: 'Him.')

[2]The usage of clitics in yes-no answers in Slovenian is discussed in detail in Chapter 4.

A: * Njega.
him.ACC
Int: 'I do'. (Lit: 'Him.')

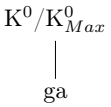
*Semantic deficiency* is a necessary but not sufficient condition on clitichood, as Franks (2016) noticed. It seems true that only functional elements can be clitics, which Franks formulates as (8).

(8) The Semantic Deficiency (Franks 2016:108)
Clitics cannot instantiate lexico-conceptual features.

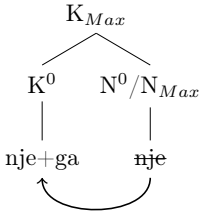
Not all functional elements are clitics, though. Consider the pronominal clitic *ga* 'him' and its strong counterpart *njega* from the example above: both pronouns are identical semantically and only differ with respect to the prosodic environments where they can appear in (a focused pronoun must be realised as a strong form). There are no reasons to assume that strong forms of pronouns instantiate more "lexico-conceptual features" than their clitic counterparts.

*Syntactic deficiency* of clitics also does not seem to be a defining characteristic and does not hold for all types of clitics. For the difference between pronominal clitics and their strong counterparts, Franks (2016) suggests the following. While clitics are syntactic elements ambiguous between heads and maximal projections, as proposed in Chomsky (1995a), their non-clitic counterparts have more complex structure:

(9) a. Clitic pronouns:



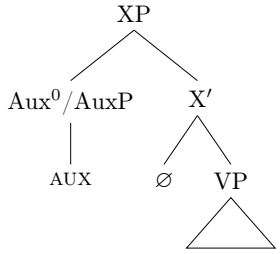

b. Strong pronouns:




(Franks 2016)

While this account can be easily implemented for pronominal clitics, it is more questionable whether other clitic elements which are normally assumed to be branching should be analysed in the same way. One example is auxiliary clitics in languages like Slovenian and Serbo-Croatian. Auxiliaries are usually analysed as heads taking an XP as their complements. To overcome this problem and to be able to analyse auxiliaries as non-branching elements, Bošković (2002) proposes that they are located in the specifier position instead, as schematised in (10).

(10) Clitic auxiliaries in Spec (Bošković 2002)




It remains as a question whether other branching elements that can be clitics, such as negation and prepositions, should be reanalysed as non-branching as well. As mentioned before, the class of clitics is diverse and possibly not all clitics share the same properites. The next section introduces different types of clitics.

### 2.1.2 Special and simple clitics

In his seminal work, Zwicky (1977) formulates a number of properties in which words are distinguished from affixes and classifies some "exceptional cases", which fall in between words and affixes, i.e. clitics. In Zwicky's classification, there are three types of clitics:

1. *Special clitics*, which are unaccented variants of independent accented words, and which often show special syntax. Zwicky's examples include Romance and Slavic pronouns, such as French clitic pronouns *me* 'me' and *le* 'him', versus their accented counterparts *moi* and *lui*, or Serbo-Croatian *im* 'to them' and *ti* 'to you' as opposed to the strong forms *njima* and *tebi*. The phonological relation between special clitics and the corresponding strong forms is not obvious: special clitics are not created simply by applying general rules of phonological reduction operating in the language.

With respect to the special syntax of special clitics, it mainly concerns the word order. For example, French pronominal clitics, according to Zwicky, show special syntax since they occur before the verb, as in (11), while ordinarily an object comes after the verb in a French sentence, as in (12).

(11) Special clitics in French (Zwicky 1977:5)

a. Je **le** vois.
I him Jean
'I see him.'

b. * Je vois le.

(12) a. Je vois Jean.
I see Jean
'I see John.'
b. * Je Jean vois.

Second position clitics, such as the ones in South Slavic languages, are yet another example of clitics that show special syntactic behaviour (however, as we will see in this dissertation, it is not always a matter of syntax).

2 *Simple clitics* are a result of the phonological reduction of independent words. The category of simple clitics is a broad one, since "any word that can appear unaccented has a potential to cliticize to a neighbouring word" (Zwicky 1977:9). Zwicky provides a list of categories that can appear unaccented in various languages, which includes auxiliaries, personal pronouns, determiners, complementizers, and prepositions. An example of simple clitics would be the English pronouns. The full, unreduced form of a pronoun appears in isolation or under emphasis: in (13a) only the stressed form [hím] can be used, not the reduced forms [ɪm] or [m̩]. In other environments, the clitic, subordinated form of a pronoun is used: in (13b), the pronoun *him* cliticizes to the preceding word and is realised as as a syllabic [m̩].

(13) Simple clitics in English (Zwicky 1977:9)
a. (Who is it?) Him.
[hím / *ɪm / *m̩]
b. She met him.
[ʃɪ mɛ́ɾm̩]

Contrary to special clitics, simple clitics do not show any special syntax (i.e. they occur in the same position as the corresponding independent words) and are created by ordinary rules of phonological reduction.

3 *Bound words* are morphemes that are always unaccented and phonologically subordinated but show more syntactic freedom in comparison to typical morphemes (primarily with respect to selection). Bound words are usually semantically associated with a syntactic constituent while phonologically they cliticise to one word (usually to the one located at the edge, not necessarily the head of the constituent). Examples of bound words are the English possessive suffix *'s*, which is phonologically attached to the final word of a NP but is associated with the entire constituent, or the Latin conjunction *-que*, which can be used to coordinate words, phrases, or clauses (as in (14)) but cliticizes to the first word of the second conjunct.

(14) Bound words in Latin (Zwicky 1977:6)

two-and there legions enrols
'and (he) enrols two legions there'

In this dissertation, I examine two distinct classes of phonologically weak items, one of which represents special clitics, while the other one comprises simple clitics. The first class, discussed in more detail in section 2.3 below, is the so-called second position clitics. While arguably not all second position clitics are special clitics in Zwicky's sense, I focus on those which certainly are: pronominal and auxiliary clitics in the South Slavic languages (Serbo-Croatian and Slovenian). According to most accounts, second position clitics indeed differ from their accented counterparts syntactically, and those syntactic differences are responsible for their special placement in a sentence. In chapters 3 and 4, I compare the behaviour of these special clitics in elliptical environments in the two languages.

The second class consists of phonologically light prepositions (I focus on Russian prepositions), which are simple clitics in Zwicky's classification. Russian prepositions are traditionally divided into two categories: "small", phonologically light preposition, which are clitics (e.g. *pro* 'about' in (15a)), and heavier prepositions, which carry an accent and are therefore phonologically independent (e.g. *nakanune* 'on the eve of' in (15b)).

(15) a. Ja pišu statju **pro** klitiki.
I write article about clitics
'I am writing an article on clitics.'

b. Moju statju opublikovali **nakanune** prazdnikov.
my article published on.the.eve.of holidays
'My article was published on the eve of the holidays.'

Of course, prepositions normally do not occur in isolation, but some of them can be contrasted, in which case the strong, accented from of a preposition is used, which obviously occurs in the same syntactic position and is transparently related to the clitic form the phonological point of view. In (16), the preposition *pod* 'below' occurs in its reduced form [pət], while in (17) both contrasted prepositions occur in their strong form (without vowel reduction) and carry stress. Light prepositions are therefore undoubtedly simple clitics.

(16) pod [pət] škafom
below cupboard
'below the cupboard'

(17) ne pod [pót], a nad [nát] škafom
not below but above cupboard
'not below but above the cupboard'

In chapter 5, I take a closer look at Russian prepositions and propose a distinction between them on the basis of their prosodic properties. I conclude that in fact there are three prosodic types of prepositions, and the type of a preposition is relevant for the possibility of its omission under sluicing.

The two classes of clitics discussed here (simple and special clitics) behave differently. It is worth mentioning again that I do not try to find a common definition for clitics in this dissertation. However, it is true that (in most cases) both simple and special clitics are phonologically weak, meaning that they do not project enough prosodic structure to be independent words from the phonological point of view. The next section discusses how exactly clitics can be represented in a prosodic organisation of a sentence, what it means for a clitic to "lean on" an adjacent word in more formal terms, and how different properties clitic complexes with different prosodic structures have.

## 2.2 The prosodic hierarchy and the phonological types of clitics

As mentioned in the beginning of this chapter, clitics are informally described as defective elements that have to lean on a neighbouring word and consequently form one prosodic unit together with it. This section explores possible ways of clitic incorporation into the prosodic structure of a sentence, which is built on the basis of the output of syntax.

### 2.2.1 Syntax-prosody interface

Recall that, as discussed in chapter 1, in this dissertation I adopt the Minimalist approach of Chomsky (1993), and hence the inverted Y model of grammar with Narrow Syntax being the central system which generates syntactic structures, which are then shipped to the interfaces, PF and LF. The input for both interfaces is therefore a structure consisting of hierarchically organised nodes, which are bundles of syntactic features. The interfaces are able to transform these structures into phonological and semantic structures, respectively. The two interfaces do not interact with each other, and since we are concerned here with the phonological structure, in the rest of the section I concentrate solely on PF and the mech-

anisms that translate an abstract syntactic structure into a potentially pronounceable prosodically organised string of phonological elements.

This translation is produced via a number of operations that are active at the PF branch of the grammar. It is not precisely clear, however, what these operations are and how they are ordered. As Scheer (2011:20) phrases it, "there is an ill-defined, minimalism-born intermundia between spell-out and vocabulary insertion on the upper and phonological computation on the lower end".

The amount of operations assumed to be active at the PF branch partly depends on the theory of the syntax-phonology interface that one adapts. There are two main groups of such theories: the *Direct Reference* approaches on the one hand and the *Indirect Reference* approaches, also called *Prosodic Hierarchy* approaches on the other (see Elordieta 2008 and Scheer 2012 for the overview). According to the Direct Reference theory, some syntactic information, such as c-command relationships, is accessible for phonological operations. The Prosodic Hierarchy Theory (Selkirk (1978/81, 1980), Nespor & Vogel (1983, 1986) *et seq*) postulates a distinct level of representation – Prosodic Structure – which is built on the basis of syntactic structure. Phonological processes thus operate on prosodic rather than syntactic constituents and cannot refer to any syntactic information since it is not directly accessible at the level of prosodic structure.

In this dissertation, I adopt the latter approach, also called Indirect Reference theory, which is introduced in more detail in the remainder of this section.

### The Prosodic Hierarchy Theory

In the Prosodic Hierarchy Theory of the syntax-phonology interface, phonological rules and operations cannot access syntactic structures directly. Instead, the syntactic structure is transformed into prosodic structure by means of syntax-prosody mapping algorithms: it is assumed that for each level in a prosodic structure (starting with a prosodic word) there is a corresponding syntactic constituent, and prosodic constituents are defined in relation to syntactic constituents.

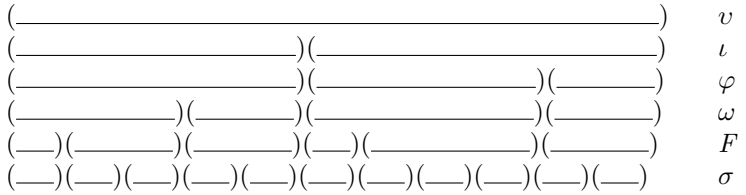
The original Prosodic Hierarchy, introduced in Selkirk (1978/81), consists of six categories:

(18) The Prosodic Hierarchy (Selkirk 1978/81)

| | |
|---|---|
| $\upsilon$ | Utterance |
| $\iota$ | Intonational phrase |
| $\varphi$ | Phonological phrase |
| $\omega$ | Prosodic word |
| $F$ | Foot |
| $\sigma$ | Syllable |

The categories in (18) are hierarchically ordered and are organised into layers, creating a phonological structure exemplified in (19): an Utt consists of $\iota$s, $\iota$s consist of $\varphi$s, and so on.

(19) Hierarchical representation of prosodic constituents (based on Selkirk 1986:384)




The lowest levels of the Hierarchy, the syllable and the foot, are the the word-internal rhythmically defined categories, which are not mapped from syntax. The higher level categories (prosodic word, phonological phrase, intonational phrase, and utterance) are *interface* categories (Ito & Mester 2012), which are derived from syntactic constituents on the basis of a set of mapping rules (discussed further in this section).

While there is general agreement among researchers about the amount and nature of the categories in the lower range of the Hierarchy (syllable, foot, prosodic word) and its upper range (utterance, intonational phrase), the mid range remains a matter of debate (Ito & Mester 2007). It has been repeatedly suggested that a single category of phonological phrase is not enough to account for the data from individual languages.

Many works have posited the necessity of distinguishing two domains in the mid-range of the Hierarchy instead of one level of phonological phrase: either a Major Phrase and a Minor Phrase (McCawley 1968, Poser 1984, Kubozono 1989, Selkirk & Tateishi 1988), or an Accentual phrase and an Intermediate phrase (Beckman & Pierrehumbert 1986, Pierrehumbert & Beckman 1988). such approach is criticised by Ito & Mester (2007, 2009a,b, 2013):

> [T]he proliferation of prosodic categories, each empirically well-founded in specific cases, has resulted in a dissolution of the original tightly organised universal hierarchy into an ungainly

> collection of a large number of prosodic types, each instantiated here and there in different languages but never simultaneously realised within a single language. We go on to argue that the problematic proliferation can be avoided if many of the empirically necessary levels (such as Minor vs. Major Phrase) are understood *not* as additional categories existing in their own right, but rather as *prosodic subcategories* of recursively deployed basic categories.
>
> Ito & Mester (2013:22)

Ito & Mester suggest that even though MaP and MiP are domains for distinct phonological processes, they can still be reduced to one category. This is possible by assuming that a basic category, $\varphi$ in this case, can be recursive, and phonological processes can refer to different layers of that category. A recursive category has minimally two layers (the maximal and minimal projections):[3]

(20) $\alpha_{max}$ and $\alpha_{min}$ Ito & Mester (2007, 2009a,b, 2013)
   a. maximal (projection of) $\alpha =_{def}$ $\alpha$ not dominated by $\alpha$
   b. minimal (projection of) $\alpha =_{def}$ $\alpha$ not dominating $\alpha$

Another additional phrase-level prosodic category that has been postulated in the literature is the Clitic Group (Hayes 1989, Nespor & Vogel 1986), which is directly relevant to the discussion in this dissertation. A Clitic Group (CG) was proposed as a constituent above the level of $\omega$ and below the level of $\varphi$, which contains an $\omega$ and adjacent clitics, as defined in Nespor & Vogel (1986):[4]

(21) Clitic Group (Nespor & Vogel 1986)
The domain of CG consists of a PW *plus* a) a DCL (directional clitic), or b) a CL (plain clitic) such that there is no possible host with which it shares more category memberships.

Differentiating between an $\omega$ and a CG allows us to account for some phonological phenomena in a variety of languages. Hayes (1989) discusses the difference between the forms *visited* and *visit it* in English: the [t] of *visit* can be aspirated in the former but not the latter. Hayes proposes that this can be explained by postulating Prosodic Word, but not Clitic Group, as the domain of syllabification in English:

[3] For more evidence for the recursion in prosodic structure see Féry (2010), Elfner (2015).

[4] Nespor & Vogel (1986) differentiate between directional clitics (DCL), which are strictly either proclitics or enclitics, and plain clitics (CL), which can in principle cliticise to their left or to their right.

(22) Syllabification in English (based on Hayes 1989)

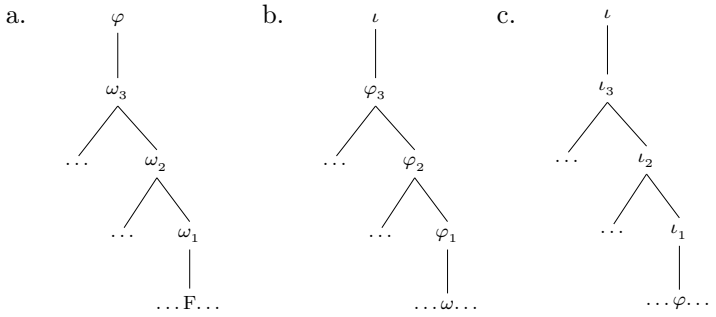
a. [$_{\omega}$ vɪ-zɪ-təd ]

b. [$_{CG}$ [$_{\omega}$ vɪ-zɪ-t ] [$_{\omega}$ ɪt ]]

Following the same logic as above, Ito & Mester (2009a) argue that postulating a new prosodic category can (and should) be avoided by allowing the category prosodic word to be recursive, and to incorporate function words where needed (the prosodic status of function words is discussed in section 2.2.2 below).

In this dissertation, I follow the approach of Ito & Mester (2007, 2009a,b, 2012, 2013) and assume that there are only three basic interface categories: $\omega$, $\varphi$, and $\iota$, which can all be recursive, creating recursion-based subcategories, as illustrated in (23).[5]

(23) Recursion-based subcategories (based on Ito & Mester 2013)




An important aspect of restricting the interface categories of the hierarchy to the three basic universal categories of $\omega$, $\varphi$ and $\iota$ is the straightforwardness of the syntax-prosody mapping that follows from it, where for every type of syntactic category (i.e. a head, a maximal projection, and a clause) there is a corresponding prosodic category, and just as he recursive outline of syntactic phrase markers, prosodic constituency can be recursive.

### The Syntax-Prosody mapping

The theory of the syntax-prosody correspondence adopted in this dissertation is Selkirk's *Match Theory* (Selkirk 2005, 2009a, 2011b), with a simple and straightforward set of basic rules for mapping of syntactic structure into prosodic structure:

[5]Not that in this case, the category of utterance is also eliminated; the topmost prosodic constituent is thus the maximal projection of $\iota$.

(24) Match rules (Selkirk 2011b)

a. MatchWord:
A word in syntactic constituent structure must be matched by a constituent of a corresponding prosodic type, call it $\omega$, in the phonological representation.

b. MatchPhrase:
A phrase in syntactic constituent structure must be matched by a constituent of a corresponding prosodic type, call it $\varphi$, in the phonological representation.

c. MatchClause:
A clause in syntactic constituent structure must be matched by a constituent of a corresponding prosodic type, call it $\iota$, in the phonological representation.

Therefore, the Match rules predict a one-to-one correspondence between syntactic and prosodic structure:

(25) Syntax-prosody mapping (Ito & Mester 2013)

| | | |
|---|---|---|
| CP | $\rightarrow$ | $\iota$ |
| XP | $\rightarrow$ | $\varphi$ |
| X: N,V,A | $\rightarrow$ | $\omega$ |

The rules in (24) are *faithfulness* rules, which create prosodic structure directly corresponding to the syntactic one.

The examples in (26) illustrate how the *Match* algorithms apply: the simplified syntactic structure of (26a) would be mapped into the prosodic structure in (26b) following the Match rules. The whole clause corresponds to an $\iota$, each phrase corresponds to a $\varphi$ and each word corresponds to an $\omega$. Note that (26b) naturally contains recursive $\varphi$s due to the hierarchical nature of syntactic structure.[6]

(26) a. $[_{\text{CP}}[_{\text{DP}}\text{Lena }]\ [_{\text{VP}}\text{defended }[_{\text{DP}}\text{her }[_{\text{NP}}\text{dissertation }]]]]$.
b. $(_{\iota}(_{\varphi}(_{\omega}\text{Lena}))\ (_{\varphi}(_{\omega}\text{defended})\ (_{\varphi}\text{her }(_{\varphi}(_{\omega}\text{dissertation})))))$.

It is well-known, however, that prosodic structure is not always isomorphic to the syntactic structure. One example comes from Italian, where a modifier and a head it modifies can end up appearing in different $\varphi$s (Ghini 1993). Consider (27): the modifier *molto* is parsed together with the verb and separately from the rest of the noun phrase.

[6]Note that the pronoun *her* is not mapped into a prosodic word; the reasons for that are discussed in the next section.

(27) ($_{\varphi}$ Cucina molto ) ($_{\varphi}$ pesce di lago. ) (Ghini 1993:60)
cooks much fish of lake
'He cooks much lake fish.'

Mismatches between syntax and prosody occur as a result of readjustment of the prosodic structure that is faithful to syntax, which is triggered by the rules of prosodic *wellformedness*. The wellformedness conditions can change the prosodic structure, for instance, by regulating the size of a prosodic constituent (requiring it to be maximally or minimally binary), banning recursivity or requiring a certain composition of a constituent (e.g. a $\varphi$ must begin with minimally an $\omega$), see Selkirk (2011a).

It has even been proposed that wellformedness constraints on prosodic structure can force the rearrangement of elements within an utterance. A striking example of that comes from Irish: as proposed in Bennett et al. (2016), a StrongStart constraint of Selkirk (2011b) is active in Irish:

(28) StrongStart (as formulated in Bennett et al. 2016)
Prosodic constituents above the level of the word should not have at their left edge an immediate sub-constituent which is prosodically dependent. For our purposes here, a 'prosodically dependent' constituent is any prosodic unit smaller than the word.

What (28) means in practice is that a $\varphi$ in Irish cannot start with a syllable which is not a part of an $\omega$. However, given the peculiarities of Irish syntax, it often happens that a clitic object pronoun, not parsed as a prosodic word, occurs at the left edge of a $\varphi$, as demonstrated in (29). The boldfaced weak pronoun *é* violates StrongStart.

(29) StrongStart violation in Irish (Bennett et al. 2016:200)
(faithful prosodic structure)

($_{\varphi}$ Thug mo mháthair ) ($_{\varphi}$ **é** fhad le teach na scoile ).
brought my mother him as-far-as house the school

'My mother brought him as far as the school.'

There are three possible options for repairing the structure in this case, as Bennett et al. argue:

(30) Bennett et al. (2016:200)

a. Option A
Postpose the pronoun so that it appears at the right edge rather than at the left edge of a $\varphi$.

b. Option B
Leave the pronoun in its syntactically expected position, but cliticize it to a preceding word or phrase, there by removing it from the left edge of the $\varphi$ and avoiding a violation of StrongStart.

c. Option C
Parse the pronoun as a prosodic word, in which case it is accented, no violation of StrongStart is incurred, and no repair is motivated.

All three options appear available in Irish: (31) shows three possible prosodic realisations of (29). (31a) shows the repair of the StrongStart violation by displacing the pronoun to the right edge of its $\varphi$; (31b) by cliticizing it to the preceding phrase; (31c) by parsing it as a prosodic word. In all the cases, there is no weak pronoun at the left edge of a $\varphi$, therefore no StrongStart violation occurs.

(31) Repair of StrongStart violation (Bennett et al. 2016:200)
a. ($_\varphi$ Thug mo mháthair ) ($_\varphi$ fhad le teach na scoile **é**).
b. ($_\varphi$ Thug mo mháthair **[ə]** ) ($_\varphi$ fhad le teach na scoile ).
c. ($_\varphi$ Thug mo mháthair ) ($_\varphi$ **[eː]** fhad le teach na scoile ).

As has been shown in this section on the example of Irish, clitics often receive special treatment by the phonological component of grammar, as (31) illustrates. Clitics behave differently from other elements due to their "defective" prosodic status and often violate prosodic constraints, which can be repaired via some additional operations, such as displacement.

The next section discusses how exactly clitics can be represented in prosodic structure.

### 2.2.2 Clitics in prosodic structure

From the prosodic point of view, clitics are defective in the sense that they lack structure at the level of a prosodic word. Being functional elements, clitics are not incorporated in the first parse of prosodic structure (see the Lexical Category Condition of Truckenbrodt 1999 below). They therefore have to be incorporated into an adjacent prosodic domain in some way (Selkirk 1996, Anderson 2005, Zec 2005, Werle 2009, a.o.). An unincorporated clitic would be disconnected from the rest of the prosodic structure. To capture this assumption, Anderson (2005) formulates the rule in (32).

(32) Full Interpretation (Anderson 2005:39)
In order to be well-formed at PF (i.e., pronounced), phonetic content has to be incorporated into prosodic structure.

Two questions can arise with respect to the prosodic defectiveness of clitic and the wellformedness of phonetic content:

(a) Why do clitics fail to project enough structure to be independent prosodic elements?

(b) How exactly can clitics be incorporated into prosodic structure?

With respect to the first question, the answer lies in the distinction between lexical and functional syntactic categories. Functional categories and their projections have been claimed to be invisible to the rules and constraints of mapping from syntax to prosody, which is captured by the Principle of of Categorial Invisibility of Function Words of Selkirk (1984) and the Lexical Category Condition of Truckenbrodt (1999):

(33) Lexical Category Condition (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.

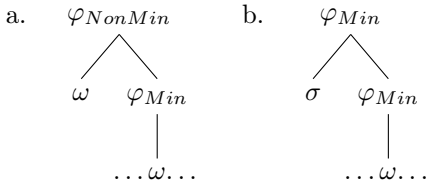
As can be noticed, there is no explicit distinction between functional and lexical projections in the Match rules as cited in (24) above. As it is actually shown in Elfner (2012) on the example of Irish, functional projections (such as TP) are visible for MatchPhrase and therefore relevant for the creation of prosodic structure. However, Elfner argues that even if lexical and functional projections are equal with respect to the correspondence between syntactic and prosodic phrases, the distinction between functional and lexical *words* still has to be maintained.[7] She argues that functional items (such as, for example, pronouns, which are D heads) are not parsed as prosodic words and therefore are not 'heavy' enough from a prosodic point of view to project a distinct prosodic category. Elfner even proposes that function words do not create a distinct level of a recursion-based prosodic subcategory:

(34) Function Word Adjunction Principle (Elfner, 2012:145)
When a function word $\alpha$, defined as a non-prosodic word, is adjoined to a prosodic category of type $\beta$, the prosodic (sub)category of the dominating node in the prosodic structure is identical to that of $\beta$.

[7]However, Tyler (2019) argues that MatchWord does not discriminate between lexical and functional heads either.

The contrast between functional and lexical words with respect to adjunction is illustrated in (35). Following Elfner, adjunction of a lexical word $\omega$ to a minimal projection of $\varphi$ creates a recursive structure with a non-minimal projection of $\varphi$, $\varphi_{NonMin}$. In contrast, adjunction of a function word $\sigma$, which is not parsed as a prosodic word, does not create an additional level of $\varphi$: the dominating $\varphi$ is still considered minimal for prosodic operations.

(35) Lexical vs. function word adjunction (based on Elfner 2012)




Therefore, function words are invisible for the creation of prosodic structure, which does not mean that they are invisible at the syntax-prosody interface at all. On the contrary, being prosodically too 'weak', function words (or clitics) often violate wellformedness constraints on prosodic structure, as shown on the example of StrongStart in the previous section and therefore have to be incorporated into prosodic structure.

There are several options of how a clitic can be incorporated by combining with an adjacent word into one $\omega$ or $\varphi$. Selkirk (1996) distinguishes 3 types of clitics based on the way they incorporate into the structure, which are listed in (35). A clitic can simply combine with the following or preceding $\omega$ into one $\varphi$, as in (36a), thus skipping the level of prosodic word. Another option is for a clitic to be directly incorporated into the adjacent $\omega$, as in (36b). Finally, a clitic can create a recursive prosodic structure with an adjacent word, not being completely incorporated in its domain but still constituting one $\omega$ with it, as in (36c).[8]

(36) Prosodic types of clitics (Selkirk 1996)

a. $(clitic\ (word)_{\omega}\ )_{\phi}$ free clitic

b. $((clitic\ word)_{\omega}\ )_{\phi}$ internal clitic

c. $((clitic\ (word)_{\omega}\ )_{\omega}\ )_{\phi}$ affixal clitic

The representations in (35) can be differentiated from each other by means of different phonological processes. For example, Selkirk (1996) shows that non-final function words cannot be internal clitics with the

[8] As demonstrated in the previous section by the Irish example in (31), clitics can also be incorporated into existing prosodic structure by being promoted to the level of prosodic word, in which case they are not considered prosodic clitics anymore.

representation in (36b) since the combination of a functional and lexical word would show identical behaviour to that of a simple lexical word, but this prediction is not borne out. It is known that in English a maximum of one unstressed syllable can occur at the left edge of a lexical word; if the primary stress falls on the third syllable, the first syllable receives a secondary stress (the unstressed vowels are underlined in (37a)). However, this does not happen in case the first syllable is a function word with cliticizes to the lexical word, as shown in (37b). Therefore, the words in (37a) and (37b) must have different prosodic representations, and the function word in (37b) cannot be a part of the $\omega$ of the lexical word.

(37) Based on Selkirk (1996:(19)–(21))

| | | |
|---|---|---|
| a. | m<u>a</u>sságe | Màss<u>a</u>chúsetts, *M<u>a</u>ss<u>a</u>chúsetts |
| b. | <u>a</u> méssage | <u>a</u> m<u>a</u>sságe |

Selkirk further shows that English non-final function words are not affixal clitics either. The difference between affixal clitics in (36c) and free clitics in (36a) is that affixal clitics are $\omega$-initial. In English, aspiration of voiceless stops is an $\omega$-initial effect, which occurs even when the initial syllable does not carry stress, as in (38a). Importantly, aspiration does not occur in non-final weak function words: the boldfaced consonants in (38b) are non-aspirated. Thus function words cannot be affixal clitics: the absence of aspiration shows that they do not initiate an $\omega$.

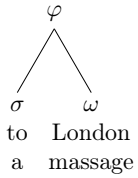
(38) Selkirk (1996:(22)–(23))

a. grow **t**$^h$omatoes
   grow **p**$^h$etunias
   grow **c**$^h$alendula

b. They grow **t**o the sky.
   So **c**an delphiniums.
   Take Grey **t**o London.

Therefore, Selkirk concludes that non-final function words in English are free clitic. A free clitic is, as the name suggests, structurally the most independent clitic type: it is dominated directly by a $\varphi$, without forming any $\omega$ together with an adjacent word. As can be seen from (39), in this case the function word is not $\omega$-initial, therefore aspiration is not expected, and they are not included in the $\omega$ of the following word, and therefore they do not affect its stress pattern.

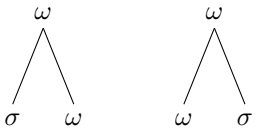
(39) Prosodic status of non-initial function words in English:




Clitics are also distinguished with respect to the directionality of cliticization. If a clitic occurs between two ωs, it can, in general, attach to any of them. Clitics that attach to the following word are *proclitics*, while clitics that attach to the preceding word are *enclitics*:[9]

(40) Directionality of cliticisation:

a. Proclitics b. Enclitics




In most cases the directionality of cliticization is predetermined by either the idiosyncratic properties of a particular clitic (also see Tyler 2019) or by the prosodic structure. Some clitics are specified for the directionality of attachment. Serbo-Croatian second position clitics (as discussed in the next section), for example, are always enclitics, therefore they never occur ι-initially. Consider the contrast in (41), where the initial noun phrase can optionally be parsed as an ι. In case when it is not, the clitic *su* directly follows it and, being an enclitic, cliticizes to the preceding word, as in (41a). However, if the initial noun phrase is a separate ι, the clitic has to be displaced to the right (similarly to the displacement of pronouns in Irish), since it neither can cliticize to the left through the ι boundary nor, crucially, cliticize to the right, as shown in (41b), where the direction of cliticisation is indicated with "=" (the φs are not shown).[10]

(41) Directionality of cliticization in Serbo-Croatian
(based Bošković 2001:67-68)

a. [ι [ω Tvome] [ω [ω prijatelju] =**su**] prodali knjigu]
your.DAT friend.DAT AUX.3PL sold book
'To your friend, they sold the book.'

b. [ι Tvome prijatelju] [ι [ω (***su**=) [ω prodali] (=**su**)] knjigu].

[9]Note that both proclitics and enclitics can bee free, affixal, or internal clitics across languages, giving six options of prosodic positioning of clitics.

[10]Prosodic parsing in (41) and (42) is mine; it is based on the descriptions in Bošković (2001) and Franks (2016).

In contrast, second position clitics in Slovenian can be either enclitics or proclitics. The clitics in (42) can be combined either with the preceding or with the following word, with speakers differing in their preferences in this respect.

(42) Directionality of cliticization in Slovenian
(following Franks 2016:96)

a. Včeraj [$_\omega$ **se**= **je**= [$_\omega$ Janez]] cel dan praskal
yesterday REFL AUX.3SG Janez whole day scratched
po rokah.
over hands
'Janez scratched his hands yesterday all day long.'

b. [$_\omega$ [$_\omega$ Včeraj] =**se** =**je**] Janez cel dan praskal po rokah.

As Franks (2016:fn.10) discusses, in cases like (42), the directionality of cliticization can be affected by the syntactic and therefore prosodic structure of a sentence. If the initial adverb is viewed as a topic and parsed as an independent $\iota$, the clitics would have no possibility to be incorporated into its domain, just like in the Serbo-Croatian example (41b) above. The difference between Slovenian and Serbo-Croatian is that Slovenian clitics do not have to be displaced to the right since they can be proclitics.

Second position clitics in general received quite extensive attention in linguistic research due to their special properties, some of which are introduced in the next section.

## 2.3 The syntactic and prosodic properties of second position clitics

The second position (2P) clitics are a particularly peculiar type of clitics, since their positioning within a clause is strictly fixed. As the name suggests, they have to appear in the 'second position' within some domain. Second position clitics are also sometimes referred to as Wackernagel clitics, after Jacob Wackernagel, who noticed that in Greek and a number of other Indo-European languages clitic elements appear after the initial word of a sentence as a cluster (Wackernagel 1892). In (43), for example, the two Greek enclitics *te* and *min* are located in the second position.

(43) polees =**te** =**min** ērēsanto hippēes phoreein
many =and =it prayed riders carry
'And many riders prayed to carry it.'
(*Iliad* 4.143, cited from Anderson 1993)

According to Bošković (2016), there are 52 languages with 2P clitics, which include Pama-Nyungan, Uto-Aztecan, Romance, and Slavic languages. Here, I focus on Slavic languages, and in particular on Serbo-Croatian and Slovenian, which are claimed to have similar (though not identical) systems of 2P clitics in previous literature.

As mentioned in the beginning of this chapter, second position clitics are special clitics in the classification of Zwicky (1977), which show 'special syntax'. Consider (44) from Serbo-Croatian: with the standard word-order being SVO, a default position for an object is post-verbal; however, if the object is realized as a clitic, it has to appear in the second position of a sentence.

(44) a. Milorad je poljubio **Anu**.
Milorad AUX.3SG kissed Ana
'Milorad kissed Ana.'

b. Milorad **ju** je poljubio (***ju**).
Milorad her AUX.3SG kissed her
'Milorad kissed her.'

Discussions of second position cliticisation normally address the following questions, both of which still remain debatable:

(a) What counts as the second position?

(b) Why do clitics, but not other elements, have to appear in the second position, and when exactly during the derivation are they placed there?

The first question is difficult to answer for a number of reasons. To start with, it is debatable if the second position should be defined in syntactic terms (for example, as the position directly following the first syntactic constituent) or in phonological terms (for example, as the position directly following the first prosodic word). It is also unclear what counts as the first position: a word or a phrase. In combination, that gives us four possibilities of what counts as the second position:

| | | nature of the 2P | |
|---|---|---|---|
| | | **syntactic** | **phonological** |
| **first element** | **word** | after the first head | after the first $\omega$ |
| | **phrase** | after the first phrase | after the first $\varphi$ |

Table 2.1: *Potential types of second positions*

To determine which of the options in Table 2.1 holds is challenging for two reasons. First, as we have seen from the syntax-prosody mapping rules, morphological words (i.e., syntactic heads) often correspond to prosodic words, and syntactic phrases to phonological phrases. Second, there is a lot of variation, both cross-linguistically and sometimes within one language.

Consider (45) from Serbo-Croatian: the second position clitic *je* can be placed either after the first (morphological/phonological) word, as in (45a), or after the first (syntactic/phonological) phrase of a sentence, as in (45b).[11]

(45) Bošković (2001)

a. [Taj $_{\omega/X^0}$] **je** čovjek volio Milenu.
that AUX.3SG man loved Milena

b. [Taj čovjek $_{\varphi/XP}$] **je** volio Milenu.
that man AUX.3SG loved Milena
'That man loved Milena.'

There are two ways of explaining the variation in Serbo-Croatian:

(a) Clitics can be freely placed either after the first word or after the first phrase;

(b) The two placements shown in (45) can actually be reduced to one.

Slovenian, in contrast, has been reported to only allow the placement of second position clitics after the first constituent:

[11] As discussed in Chapter 3, arguably even in (45a) the first position is actually a phrase.

(46) (Franks & King, 2000:39-40)

a. ... in [moje srce] **je** bilo veselo.
and my heart AUX.3SG been happy
'...and my heart was happy'

b. *...in moje **je** srce bilo veselo.

The variation between Serbo-Croatian and Slovenian can have potentially different causes:

(a) Clitics in the two languages differ with respect to their requirement to follow the first word or the first phrase;

(b) There are structural differences between the two languages, not related to the second position cliticisation (for example, the possibility of left branch extraction);

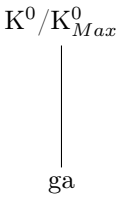
(c) The systems of cliticisation are different in the two languages (for example, syntactic vs. phonological).

The following two chapters explore clitic placement in Serbo-Croatian and Slovenian in more detail and determine which of these options account for the facts more accurately.

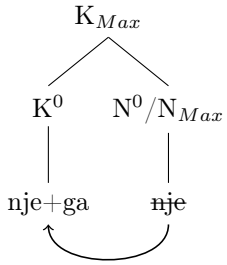
With respect to the question of what makes clitics special with respect to their placement and when during the derivation they are placed into the second position, in syntax or in phonology, there are no definite answers, either.

It has been extensively argued that what makes second position clitics special is their syntactic structure. The difference between clitics and their non-clitic counterparts or lexical noun phrases is that only clitics are ambiguous between an XP and an $X^0$, and hence have properties of both heads and maximal projections (Bošković 2002, Franks 2016). Recall that Franks (2016) proposes the following structural difference between the Slovenian second position clitic *ga* 'him.ACC' and its accented counterpart *njega*: *ga* is a non-branching element, while *njega* has a more complex internal structure, with its root *nje-* being categorically an N, as shown in (47).

(47) a. Clitic pronouns:




b. Strong pronouns:




(Franks 2016)

Presumably, it is exactly the special syntax of clitics that is responsible for their placement into the second position: while clitics are ambiguous between heads and phrases, their non-clitic counterparts are not. I refer readers to Franks (2012, 2016) for details.

As for the motivation for clitic movement to the second position, such accounts postulate that clitics move to the higher structural position (Agr, for example) for feature-checking.

An alternative types of accounts propose that clitics are placed into the second position post-syntactically. The differences between clitics and strong pronouns come from their lexical specifications: clitics have a requirement to appear in the second position. The details of how such a requirement can be implemented are discussed in the next chapter.

## 2.4 Summary

The discussion in this chapter shows that clitics are defective elements, which are often receive treated differently from other, phonologically independent, items. The necessity to incorporate clitics, which do not project their own prosodic word, into the prosodic structure of a sentence can result in reorganisation of the structure. Clitic displacement is an ultimate instance of such reorganisation.

In the beginning of the dissertation, I raise some questions about the interaction of cliticisation and ellipsis, and what we can learn about the timing of ellipsis from this interaction. The next chapters discuss the matter in more detail and show that, first, clitics behave differently in elliptical environments, and, second, some types of ellipsis are sensitive to the prosodic status of the elements targeted by deletion.