

# Second Position Clitics: Syntax Can See Phonology

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## 1 Introduction

Despite a wealth of research on the topic, second position clitics have fit very uncomfortably in current models of grammar (see, e.g., Marantz 1988, 1989, Halpern 1992, 1995, Anderson 1993, Rivero 1994, Progovac 1996, 2000, Bošković 2001, Embick & Noyer 2001, Chung 2003). I suggest that this is because most approaches to them have started from the assumption that syntax has no access to phonological information. I argue that if we give up this assumption, and allow the syntax to see and operate on phonological information like prosody, then second position clitics can receive a very simple and natural syntactic analysis. I take the view that syntax is the system that places elements where they appear in the phrase structure; it has to be the syntax that places second position clitics, and it then follows that syntax must be able to make reference to prosodic information, since the placement of second position clitics is often determined by phonology.

Section 2 demonstrates how such an analysis would work for languages where second position clitics always follow a prosodic unit. The two cases I look at are Chamorro (section 2.1), where the clitics always follow the first prosodic phrase (Chung 2003), and Passamaquoddy-Maliseet (section 2.2), where the second position clitics follow the first prosodic word. I show that, if the syntax can target and move phonological phrases and phonological words, respectively, then the facts of Chamorro and Passamaquoddy-Maliseet are all accounted for with a minimum of machinery.

Section 3 then turns to the more interesting case of Slovenian. I demonstrate that Slovenian second position clitics require simultaneous reference to syntax and to phonology. This case shows that we cannot divide syntactic operations into syntactic operations proper, and phonological or post-syntactic operations (which duplicate the syntax), because the operations that position clitics in Slovenian make reference to syntactic and phonological information simultaneously. The Chamorro and Passamaquoddy-Maliseet cases demonstrate the advantages of a syntax-sees-phonology account; the Slovenian case demonstrates its necessity.

Section 4 then addresses the conceptual issues that arise if we decide to give up the Principle of Phonology-Free Syntax (Zwicky 1969). I show that giving up this principle, and an architecture where phonology and syntax are strictly separated, does not lead to an overgeneration problem. The fact is that syntactic operations are severely constrained, in such a way that they cannot see even most types of *syntactic* information. The limitations on syntactic operations mean that in most cases, syntax will not refer to phonological information, even if that information is in principle available to it. There is no reason to build an architecture that strictly separates phonology from syntax, and the facts of second position clitics show that doing so is a mistake.

The proposed analysis treats second position clitics as analogous to verb second phenomena in Germanic languages. This captures the oft-expressed intuition that they are very similar (e.g., Anderson 1993). The only difference between them in the current analysis is that the operations that produce second position clitics operate on prosodic units, while the ones that produce verb second operate on syntactic units. They are otherwise almost identical.

In addition to providing a very natural analysis of second position clitics, the proposed analysis also derives the properties of “long head movement” in Slavic languages (e.g., Rivero 1991, 1994). This is yet another advantage of the account.

## 2 Second-Position Clitics in Chamorro and Passamaquoddy-Maliseet

In this section I show how the proposed account works for two simple cases, Chamorro and Passamaquoddy-Maliseet. In Chamorro, second position clitics follow the first prosodic phrase. In Passamaquoddy-Maliseet, they follow the first prosodic word.

### 2.1 Second-Position Clitics in Chamorro

Chung (2003) shows that second position clitics in Chamorro follow the first prosodic phrase. Since Chung (2003) adopts the common architectural assumption according to which syntax and phonology are separate, she analyzes the placement of the clitics as post-syntactic. Their placement is determined after the syntax, at the point where the syntax is mapped to a prosodic representation. This type of “post-syntactic” analysis follows a long tradition, from Halpern’s (1992, 1995) “prosodic inversion” and Embick and Noyer’s (2001) post-syntactic movement, to phonology choosing among alternative placements provided by the syntax in Bošković (2001) and Revithiadou (2006).

I suggest instead that we give up this architectural assumption. If the syntax is what puts elements in their relative order, then the syntax is what positions second position clitics. If second position clitics are ordered according to prosody, then the syntax must have access to prosodic information.

Here is what such an analysis might look like. There are two syntactic operations involved in the placement of second position clitics. The first targets the clitics themselves, and moves them to a position at the left edge of the clause (this appears to be TP; see below). The second targets the highest prosodic phrase below the clitics and fronts it over the clitics:

- (1) The Chamorro 2P Clitic Rule: Front weak pronouns to the left edge of TP.
- (2) The Chamorro Non-Initiality Rule: Target the first post-clitic prosodic phrase and move it across the clitics.

To illustrate, in some cases the clitics follow a syntactic constituent:<sup>1</sup>

- (3) a. Fiu ha’ man-malagu **häm**.  
often Emp Agr-run we  
‘We very often run.’ *follows VP* (Chung 2003: 567, (41))
- b. Á’aguaguat ha’ na patgun **gui’** esta pa’gu.  
naughty.Prog Emp L child he until now  
‘He’s still a naughty child.’ *follows NP* (Chung 2003: 580, (59))
- c. Pära manu **yu’** pa’gu?  
to where? I now  
‘Where do I [go] now?’ *follows PP* (Chung 2003: 554, (13a))

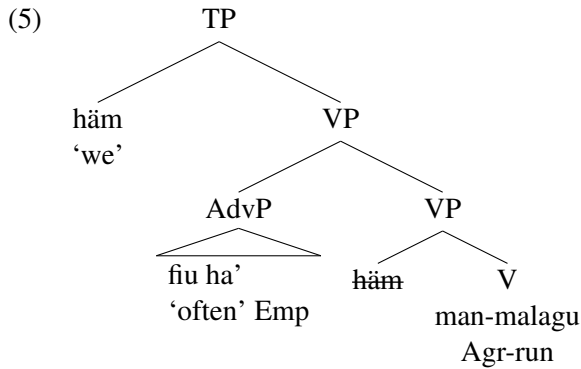
According to Chung (2003), the basic mapping between syntax and prosody is the following:

- (4) Align the left edge of XP with the left edge of a p(honological)-phrase. (Chung 2003: 573, (48))

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<sup>1</sup>Chamorro abbreviations, from Chung (2003): AP = Antipassive, L = Linker. These are the only abbreviations she provides.

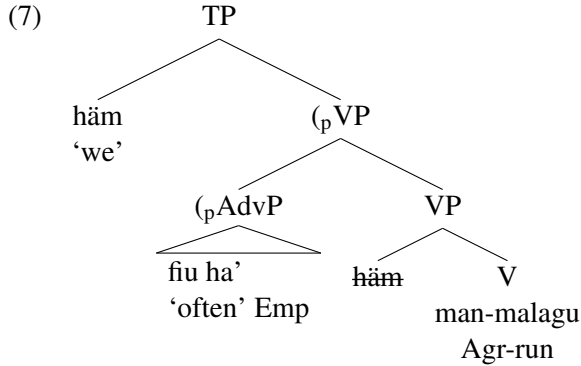
Take example (3a). I assume that the subject starts in Spec-VP, while the adverb is adjoined to VP. Since the subject is a weak pronoun (a clitic), the first movement operation involved (the Chamorro Clitic Rule) moves it to the left edge of TP:



Following the rule that the left edge of XPs will be mapped to the left edge of a p-phrase, the left edge of VP will be mapped to the left edge of a p-phrase. According to Chung (2003), adjuncts can optionally be included:

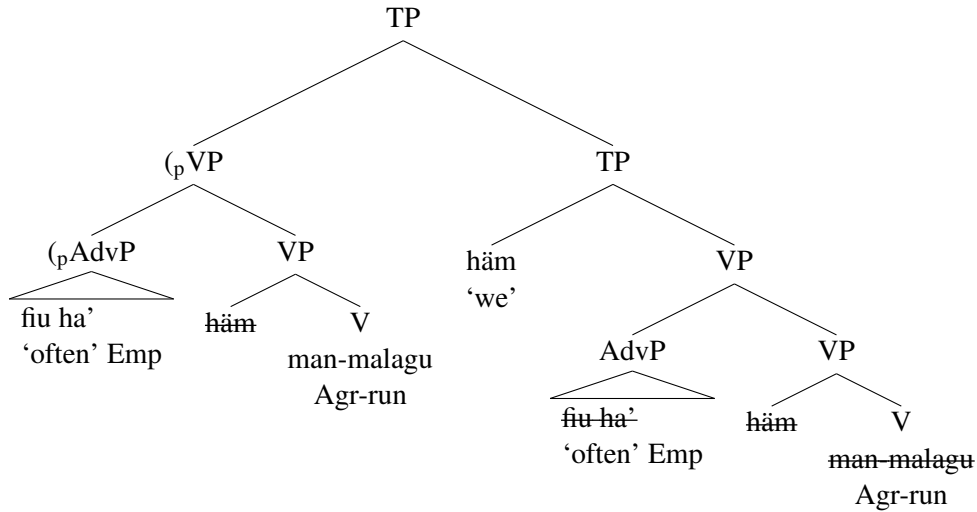
- (6) For the purposes of Chamorro mapping constraints, a constituent adjoined to XP can be treated as inside or outside XP. (Chung 2003: 574, (49))

In this case, the adjunct 'often' is included, so the uppermost VP is mapped to a p-phrase (so is the AdvP, but the two edges coincide):



The second operation now targets the first p-phrase after the clitic, and fronts it over the clitic (adjoining it to TP, I assume):

(8)

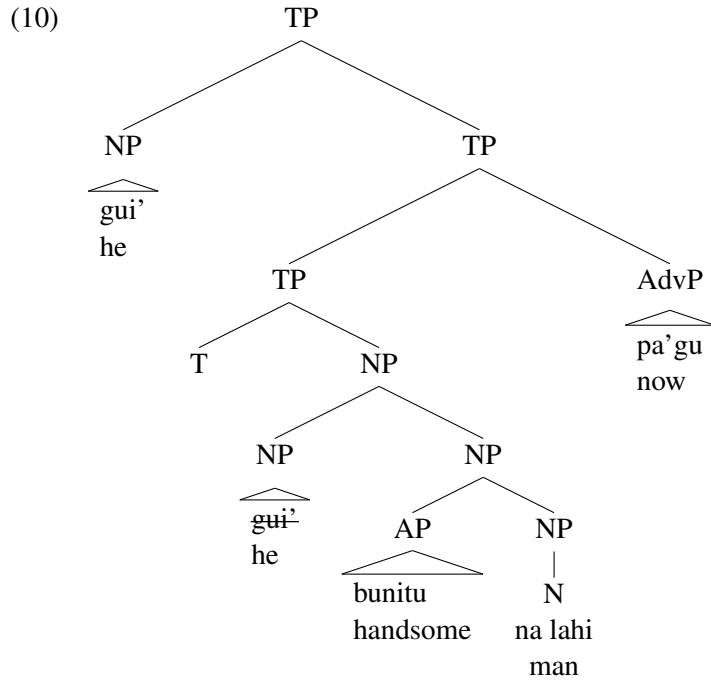


The clitic is now included in the prosodic phrase to its left, and this clause is complete.

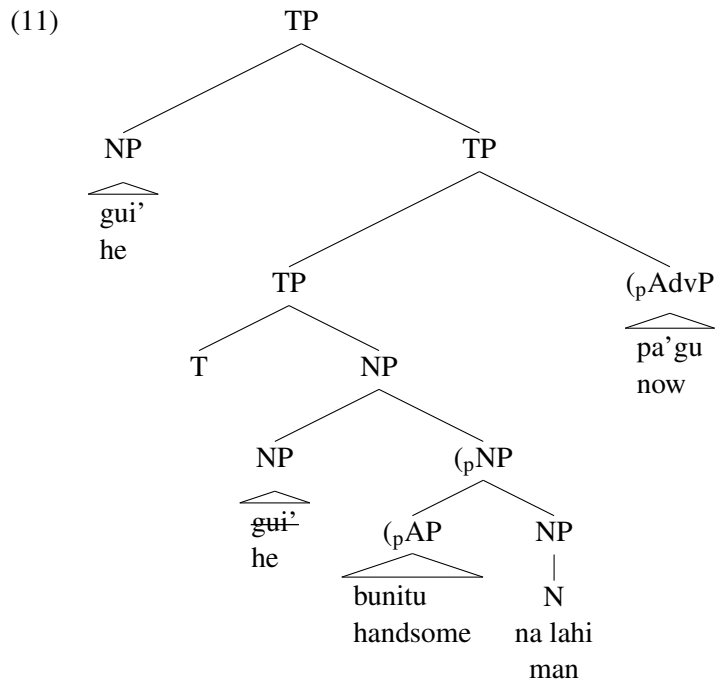
In other cases, second position clitics in Chamorro disrupt constituents:

- (9) a. Ma'estro-nña **gui'** si Carmen.  
teacher-Agr he Carmen  
'He is Carmen's teacher.' (Chung 2003: 558, (21a))
- b. Bunitu **gui'** na lahi pa'gu.  
handsome he L man now  
'He was a good-looking man now.' (Chung 2003: 559, (26a))
- c. Mämpus **hit** man-espantáo.  
too we Agr-scared  
'We were horrified.' (Chung 2003: 561, (32b))
- d. Famalao'an **hit** ginin todus i islas gi Pasifika.  
women we from all the islands Loc Pacific  
'We are women from all the islands of the Pacific.' (Chung 2003: 558, (22a))

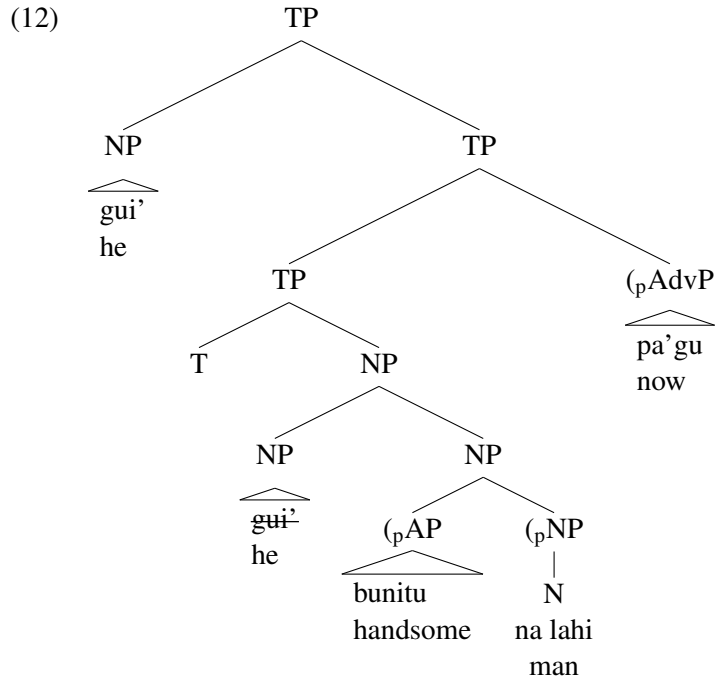
Take example (9b). Once again, the clitic first moves to the left edge of TP (I ignore the linker *na* for purposes here):



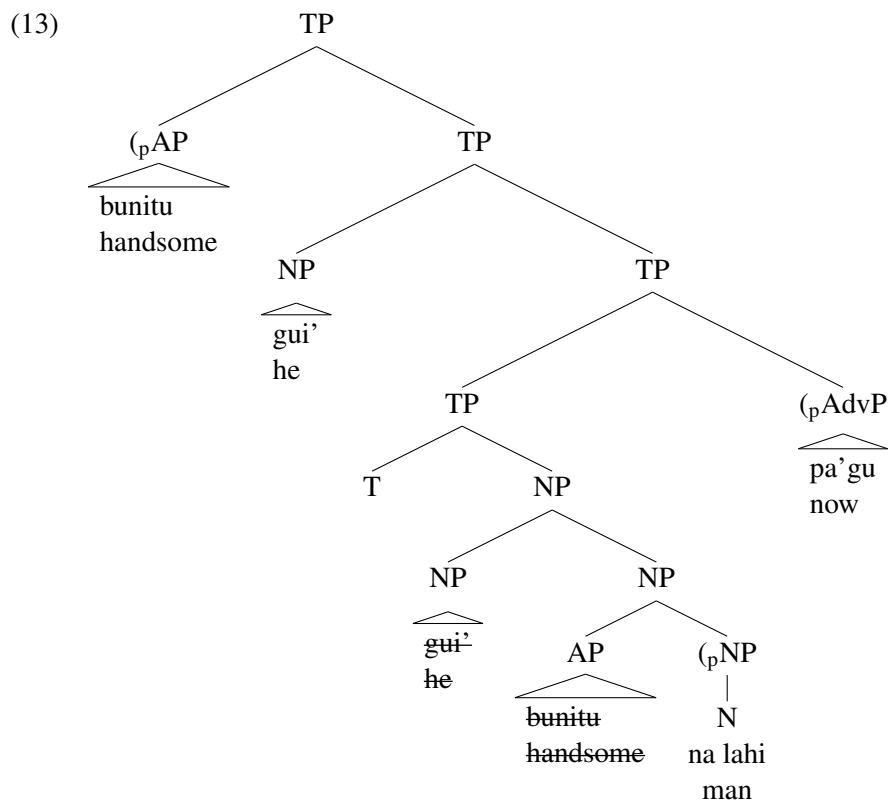
Following the rule that the left edges of XPs are aligned with the left edge of a phonological phrase, we have the following phonological phrases, built in concert with the syntax. The AP can either be parsed with the NP, or not, giving two prosodic parses (any given derivation will commit to one or the other). The first treats the AP as inside the NP:



The second treats the AP as outside the NP, and parses it as its own prosodic phrase:



In this particular example, the second parse is chosen. Chamorro weak pronouns now trigger the second movement rule. This movement rule targets the first prosodic phrase to the right of the weak pronoun and adjoins it above the weak pronoun:

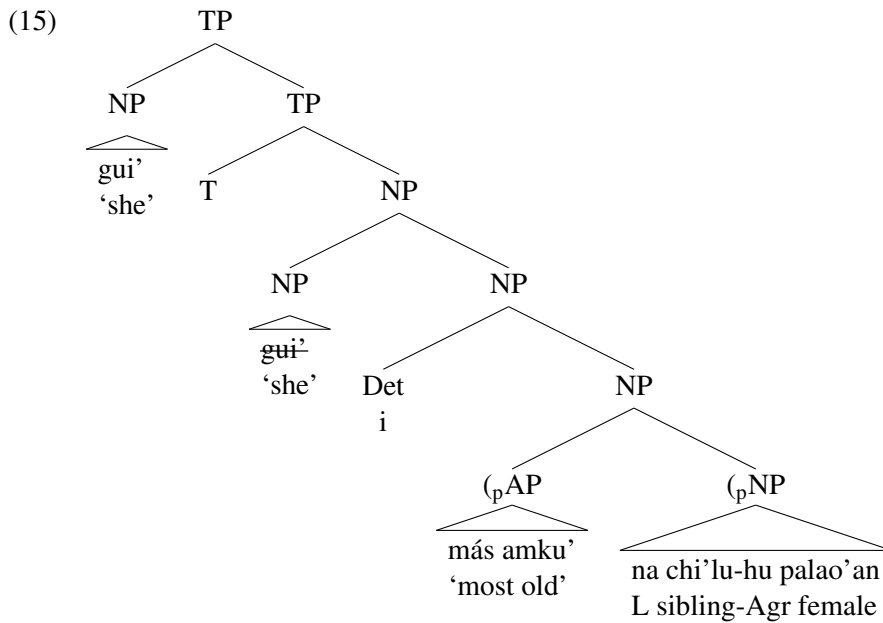


The weak pronoun will now be incorporated into the prosodic phrase consisting of the AP.

In the cases above, what has moved across the clitics has been a syntactic constituent. In other cases, however, it is not, and other movement processes cannot target the same prosodic phrase. In the following pair, what precedes the clitic in (14a) is not able to undergo focus movement in (14b):

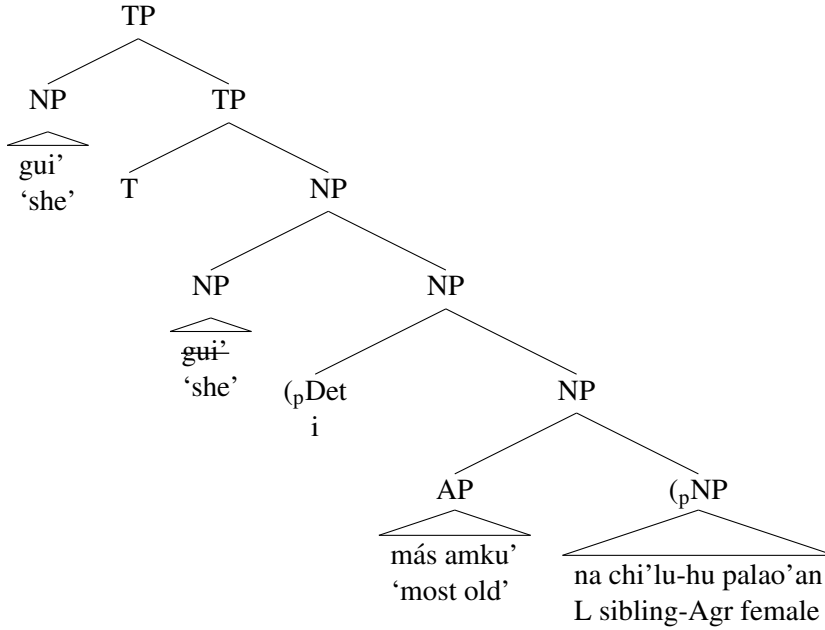
- (14) a. I más amku' **gui'** na chi'lu-hu palao'an.  
 the most old she L sibling-Agr female  
 'She's my oldest sister.' (Chung 2003: 559, (26c))
- b. \*I más amku' *kumékuentus* na chi'lu-hu palao'an yan i principal.  
 the most old WH[Nom].Agr.speak.Prog L sibling-Agr female with the principal  
 'My oldest sister was talking to the principal.' (Chung 2003: 562, (35b))

In (14a), I assume that the determiner, as a weak functional element, is incorporated into the first p-phrase of the NP, which in this case belongs to the AP. The AP and NP are first parsed as p-phrases:



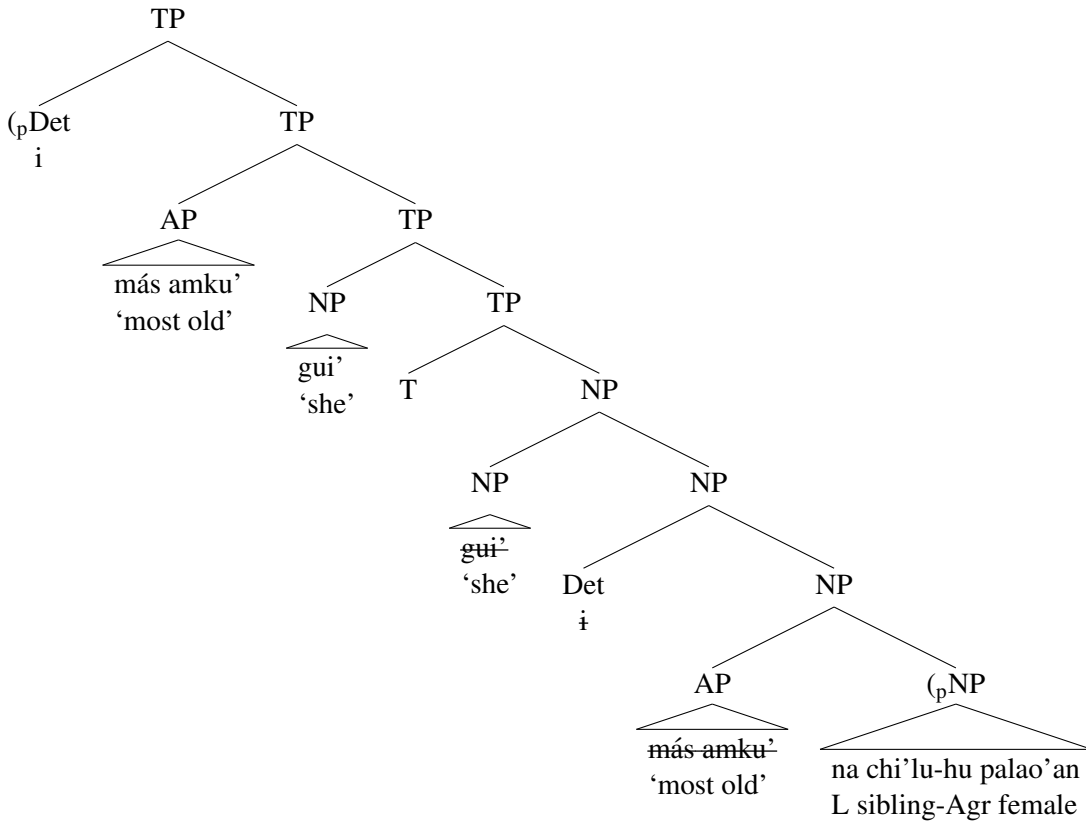
The determiner is then incorporated into the first p-phrase:

(16)



The Chamorro Non-Initiality Rule then targets the first p-phrase after the clitic, which in this case consists of the Det and AP (up to the next p-phrase). These are not a syntactic constituent. I assume that the syntax copies them as they are into the left edge of TP:

(17)



This is movement of something that is not a syntactic constituent, but it is a prosodic constituent. Since the syntax can see prosody and act on prosodic constituents, this is something the syntax is able to do. Movement is copying, so the syntax just copies the elements of the p-phrase. In this case that gives the



appearance of the syntax having copied two distinct elements and moved them in such a way as to recreate their order, but that is an illusion. What it has done is copy a p-phrase. Since focus movement does not operate on p-phrases, it is not able to do this, in (14b).

I have been treating the domain for clitic placement as TP, rather than CP. This is because material outside of TP often does not count for second position, like complementizers and wh-phrases:

- (18) a. Man-maleffa na mansiudadanu-n Amerikanu **hit** lokkui'.  
Agr-forget Comp citizens-L American we also  
'They've forgotten that we are also American citizens.' (Chung 2003: 553, (11a))
- b. Taimänu [man-hatsa **hao** guma']?  
how? Agr.AP-build you house  
'How do you build houses?' (Chung 2003: 585, (72a))

However, this is actually optional, and the clitics can immediately follow a wh-phrase, as well:

- (19) Taimänu **hao** man-hatsa guma' ?  
how? you AP-build house  
'How do you build houses?' (Chung 2003: 586, (74a))

I assume that the Chamorro Clitic Rule actually moves weak pronouns to the left edge of the intonational phrase, not the TP. I revise the rule as follows:

- (20) The Chamorro 2P Clitic Rule (Revised): Front weak pronouns to the left edge of the intonational phrase.

What is then optional is whether CP or TP maps to the left edge of the intonational phrase. In (18), TP is mapped to the left edge of the intonational phrase, while in (19), CP is.

As can be seen, if we allow the syntax to operate on prosodic units in addition to syntactic ones, then we can have a very simple and elegant account of second position clitics in Chamorro.

## 2.2 Second-Position Clitics in Passamaquoddy-Maliseet

Passamaquoddy-Maliseet is an Algonquian language spoken in Maine and New Brunswick, Canada. It has several second position clitics. In this language, the clitics seem to follow the first prosodic word rather than the first prosodic phrase. For instance, the future marker *oc* (allomorph *hc* after a vowel) can follow anything, including a freestanding particle, a prefix+preverb+emphatic clitic, or a prefix+preverb without an emphatic clitic:<sup>2</sup>

- (21) Tokec **oc** 'cimaciw (k)-kisi=**te=hc** yali-topskans etol-amkole-k,  
now Fut from.now.on (2)-able=Emph=Fut around-roll IC.there-burn-InanIntransConj  
(k)-kisi=**hc** pomaws ktahkmiku-k naka 'samaqan-ok.  
(2)-able=Fut live land-Loc and water-Loc

<sup>2</sup>The transcription of Passamaquoddy-Maliseet uses the orthography in use in the Passamaquoddy community. Letters have their usual values except that o = schwa, q = [k<sup>w</sup>], c = alveopalatal affricate, ' = initial h (phonetic effect is aspiration of the following stop or devoicing of s). Obstruents are voiced in many environments. Abbreviations: 1 = first person; 2 = second person; 12 = first person plural inclusive; 3 = third person animate proximate or unmarked; Abs = absentative; An = animate; Conj = conjunct inflection; Dir = direct voice; Dub = dubitative (a modal category); Emph = emphatic particle; Fut = future; IC= initial change, ablaut process; Inan = inanimate; Intrans = intransitive; Inv = inverse voice; N = morpheme glossed "N," used with transitive inanimate verbs, ditransitives, subordinatives, and some other contexts; Neg = negative; Obv = obviative; Pl = plural; Perf = perfect aspect; Pret = preterit (tense); Quot = quotative; Trans = transitive. "1Subj/2Obj" means a first person subject with a second person object, and so on.

‘From now on you will be able to roll in the fire, you will be able to live on land and in the water.’  
(Mitchell 1921/1976c: 15)

The first instance of *oc* here is in an adjunct clause, the second is in the main clause, and the third is in another clause conjoined with that one.

In the example below, this clitic can come before or after the freestanding particle *apc*, depending on whether that particle is first in the clause or not:

- (22) *Apc=oc* (‘)-maw-on-a, on *oc apc* skicinuw-ok  
again=Fut 3-together-TransAn-Dir.ObvP then Fut again Indian-3.Pl  
‘-sankewi-mawi-ya-ni-ya.  
3-peaceful-together-go-N-3.Pl  
‘He will bring them together again, and then the Indians will assemble peacefully.’ (Mitchell 1921/1976b: 7)

And in the following example, it follows the entire verb, since that is what is first in the clause:

- (23) *Kt-apenk-ul-oni-ya-k=c* yukt muwin-ewiyeya-k n-mulcess-ok.  
2-pay-1Subj/2Obj-N-2.Pl-3.Pl=Fut Dem bear-skin-3.Pl 1-mittens-3.Pl  
‘I will pay you with these bearskin mittens of mine.’ (Mitchell 1921/1976a: 8)

Second position clitics can also disrupt constituents in Passamaquoddy-Maliseet. The following example shows the contrastive and quotative clitics coming between a demonstrative and a head noun:<sup>3</sup>

- (24) [Yukk **olu** **yaq** kotoki-k] weci qolop-otqi-hi-htit.  
these.An Contrast Quot other-3.Pl IC.from around-out-go-3.Pl.Conj  
‘The other two took off in the other direction.’ (Newell 1979: 25)

This distribution makes Passamaquoddy-Maliseet clitics “second word” clitics (Halpern 1995): they always follow the first prosodic word. We can account for this positioning in the current system with two rules again (note that Passamaquoddy-Maliseet has other clitics that are not second position clitics; they cliticize to whatever they are adjacent to):

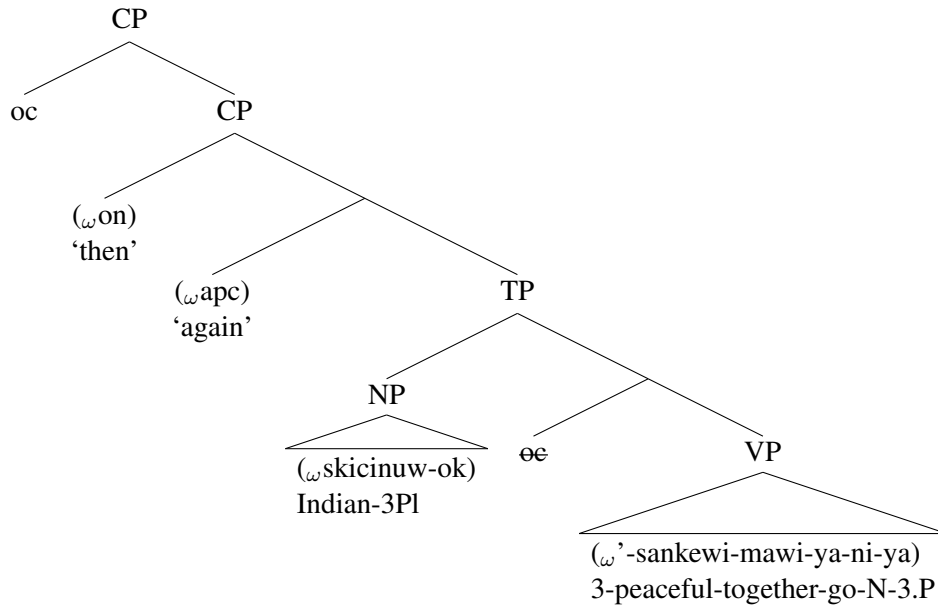
- (25) The Passamaquoddy-Maliseet 2P Clitic Rule: Front second position clitics to the left edge of CP.  
(26) The Passamaquoddy-Maliseet Non-Initiality Rule: Target the first post-clitic prosodic word and move it across the clitics.

To illustrate, in the second clause in (22), the future clitic moves from its base position to the left edge of CP:

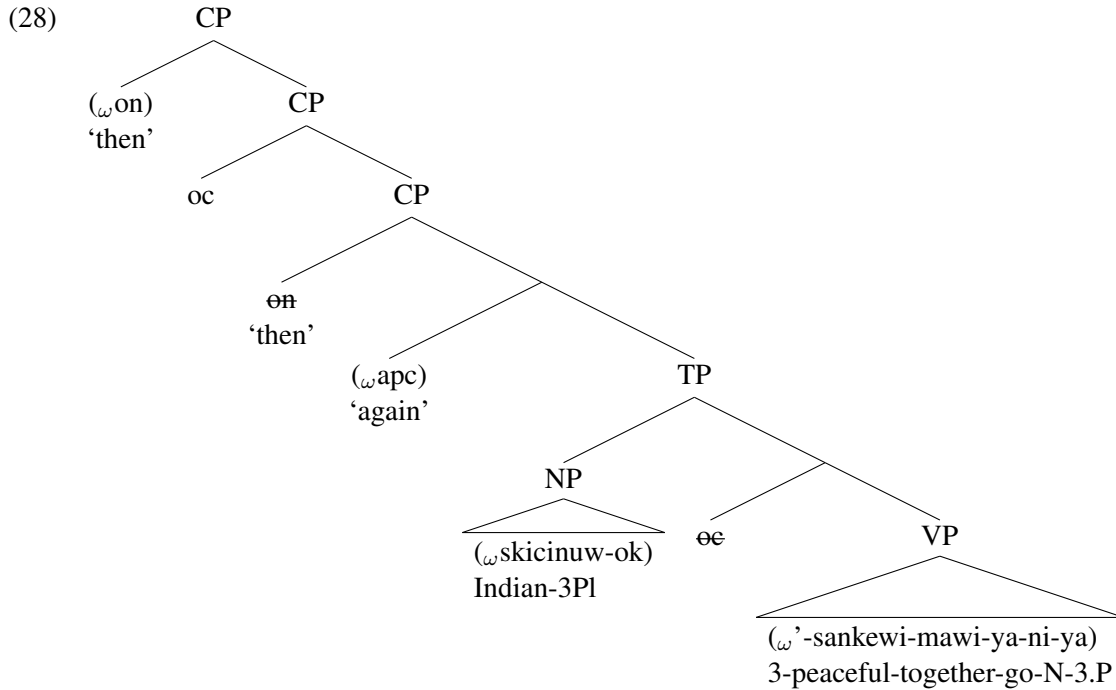
- (27) ... on *oc apc* skicinuw-ok ‘-sankewi-mawi-ya-ni-ya.  
then Fut again Indian-3.Pl 3-peaceful-together-go-N-3.Pl

<sup>3</sup>Passamaquoddy-Maliseet intransitive verbs make a dual-plural distinction. A verb marked with only the regular plural inflection is interpreted as having a dual subject; to indicate a plural, another morpheme is added closer to the stem. That is why this example is translated as ‘the other two’.

‘... then the Indians will assemble peacefully.’ (Mitchell 1921/1976b: 7)



I assume that all  $X^0$ s that are not dominated by another  $X^0$  map to a prosodic word ( $\omega$ ), as shown in the tree. The first prosodic word after the clitic is then the particle *on*. The Passamaquoddy-Maliseet Non-Initiality Rule therefore targets that prosodic word, and fronts it over the clitic:



(It is not clear whether the clitic is incorporated into the prosodic word of the element to its left, or forms its own prosodic word; I leave this open.)

This very simple analysis will account for all of the facts of Passamaquoddy-Maliseet second position clitics.

## 2.3 Discussion

The proposed analysis is a purely syntactic one, and it is maximally simple. In this approach, it is the syntax that places elements where they appear in the clause. There is no such thing as a “post-syntactic” operation, and no need for levels of grammar after the syntax.

In the proposed analysis, there are two operations. One fronts the clitics, and the other fronts one prosodic unit over them. This makes second position clitics analogous to verb second in Germanic languages, which in standard syntactic accounts is the result of two processes: head movement, which moves a verb to C, and phrasal movement, which moves one syntactic constituent across the verb. Second position clitics are exactly analogous, except that the units that are operated on are prosodic constituents rather than syntactic constituents. This captures the oft-expressed intuition that second position clitics and verb second are essentially the same phenomenon (e.g., Anderson 1993).

As can be seen, if we give up the assumption that syntax has no access to phonology, and allow it to operate on prosodic units, then we can have a very simple and elegant analysis of second position clitics. I have illustrated two cases so far, one where what precedes the clitics is a prosodic phrase, and one where what precedes the clitics is a prosodic word. In the next section, I illustrate a case where the operations involved require simultaneous reference to phonology and to syntax.

## 3 Simultaneous Reference to Syntax and Phonology: Slovenian

Slovenian has numerous very frequently used second position clitics. Non-nominative argument pronouns have weak forms that are second position clitics, and some auxiliaries are also second position clitics. Second position clitics appear at first glance to always follow the first syntactic constituent in the clause in Slovenian. For instance, in the following examples, all from a well-known comic book, they follow a complete NP or PP (in all examples, the second-position clitics are in boldface):<sup>4</sup>

(29) (Miki Muster, *Trubadurji*)

- a. Pot                    nazaj        **je**        zaprt-a.  
path.FSgNom backwards be.3Sg closed-FSgNom  
'The path back is closed.' *follows NP* (p31)
- b. Tudi primern-ega        konj-a        **je**        kmalu naše-l.  
also appropriate-MSgAcc horse-MSgAcc be.3Sg soon find-PtcplMSg  
'He soon also finds an appropriate horse.' *follows NP* (p29)
- c. Dvoboj            z Malhar-jem        **sem**        namreč preloži-l                    na  
duel.MSgAcc with Malhar-MSgInstr be.1Sg namely postpone-PtcplMSg to  
jutrišnji                    dan.  
tomorrow's.MSgAcc day.MSgAcc  
'I postponed the duel with Malhar to tomorrow.' *follows NP* (p27)
- d. Pred        vrat-i        **je**        in se hoče        bori-ti!  
in.front.of door-NPILoc be.3Sg and Refl want.3Sg fight-Inf  
'He's in front of the doors and wants to fight!' *follows PP* (p22)

In embedded finite clauses they follow the complementizer or wh-phrase:

<sup>4</sup>Abbreviations for Slovenian: Acc = Accusative case, Adj = Adjectival participle, Adv = Adverb ending, Comp = Complementizer, Cond = Conditional, Dat = Dative case, Du = Dual, Fut = Future, Gen = Genitive case, F = Feminine, Inf = Infinitive, Instr = Instrumental case, Loc = Locative case, M = Masculine, N = Neuter, Neg = Negative, Nom = Nominative case, Ptcpl = (active) Participle, Q = Question particle, Refl = Reflexive (clitic), Rel = Relative pronoun. Unmarked tense = present.

(30) (Miki Muster, *Trubadurji*)

- a. In pri cel-i stvar-i je najbolj žalostn-o to, [da mu  
and at whole-FSgLoc thing-FSgLoc be.3Sg most sad-NSgNom DemN Comp 3SgMDat  
ne more-va pomaga-ti]!  
Neg can-1Du help-Inf  
'And in this whole thing, the saddest thing is, that we can't help him!' (p29)
- b. Ti torej trdi-š, [da bi se čas ustavi-l, [če bi  
2SgNom then claim-2Sg Comp be.Cond Refl time.MSgNom stop-PtcplMSg if be.Cond  
se ustavi-l-a ur-a]]?  
Refl stop-Ptcpl-FSg clock-FSgNom  
'So you claim that time will stop if the clock stops?' (p12)
- c. Še vedno mi ni jasno, [zakaj sem dobrodošel].  
still 1SgDat be.Neg3Sg clear why be.1Sg welcome.MSgNom  
'It's still not clear to me why I am welcome.' (p31)

It also appears at first that prosody is not involved in any way. An appositive, which is set off by intonational breaks, is still part of the first constituent that it modifies, so that the clitics follow the whole NP including the appositive (Golden & Sheppard 2000: 199):<sup>5</sup>

(31) Jaz, tvoj-a mama, sem ti obljubi-l-a sladoled.  
1SgNom your-FSgNom mother.FSgNom be.1Sg 2SgDat promise-Ptcpl-FSg ice.cream.MSgAcc

'I, your mother, promised you ice cream.' (Golden 2003: 214, (11b))

This means that first position in Slovenian is not definable in purely prosodic terms as it is in Chamorro or Passamaquoddy-Maliseet. What comes before the clitics is sometimes something that is more than one prosodic unit.

These types of facts make it look like second position in Slovenian is defined as, "after the first syntactic constituent." This is exactly what Golden & Sheppard (2000) concluded, and they therefore proposed that Slovenian second position clitics adjoin to C, while a single syntactic constituent moves to Spec-CP (in matrix clauses). This makes Slovenian second position clitics analogous to verb second in Germanic languages.

However, there are several facts that point to prosody being involved, after all. First, the proclitic *že*, 'already', cannot be the first element; if it is first, some other constituent has to come between it and the clitics (Marušič & Žaucer 2021):

(32) (Marušič & Žaucer 2021)

- a. Že od včeraj mi je Peter dolžen pet evrov.  
already from yesterday 1SgDat be.3Sg Peter.Nom indebted.MSgNom five.Acc euro.Gen  
'Peter has owed me five Euros already since yesterday.'
- b. \* Že mi je od včeraj Peter dolžen pet evrov.

Similarly, negation can also never be the first constituent with a finite main verb, only it plus the verb can be:

<sup>5</sup>I have modified examples from the literature to fully gloss the inflection.

- (33) a. Ne mara **je**.  
 Neg like.3Sg 3SgFAcc  
 ‘He doesn’t like her.’ (Marušič 2008: (8c))
- b. \*Ne **je** mara.

It appears that certain elements are not sufficient as the first constituent. One possibility is that they are prosodically insufficient.

Second, in normal speech, it is not typical for a whole VP to be the first constituent. Instead, only the participle occupies the first position:

- (34) a. Da-l **sem mu** vitešk-o besed-o.  
 give-PtcplMSg be.1Sg 3SgMDat knightly-FSgAcc word-FSgAcc  
 ‘I gave him my word as a knight.’ (Miki Muster, *Tubradurji*, p27)
- b. ?? Da-l vitešk-o besed-o **sem mu**.  
 give-PtcplMSg knightly-FSgAcc word-FSgAcc be.1Sg 3SgMDat  
 ‘I gave him my word as a knight.’

For my informants, fronting a VP is not natural, and would be confined to poetic language. However, there may be speaker variation here, as Golden (2003: 219) cites some examples of VP fronting. Nevertheless, it is far more common for the participle by itself to occupy the first position. If first position is occupied by a constituent that is a maximal projection, it is not clear why the participle by itself would be allowed, while a full VP would be dispreferred. It should be the other way around. (Note that fronting of the participle is what is sometimes referred to in the literature as “long head movement”; see more on this in section 3.5.)

Third, the placement of the clitics themselves seems to be sensitive to prosody. In clitic climbing out of nonfinite clauses, the clitics climb into a higher clause if there is no intonational break, but do not if there is one (Golden 2003: 223, Marušič 2008: section 4). In the following examples from Golden (2003), the symbol “|” marks an intonational break. When the clitics do not climb, there is a break; when they do, there is not:

- (35) (Golden 2003: 223, (41–42b))
- a. Janez **se je** naveliča-l | hvali-ti **ji ga**.  
 Janez.Nom Refl be.3Sg tire-PtcplMSg praise-Inf 3SgFDat 3SgMAcc  
 ‘Janez grew tired of praising him to her.’
- b. Janez **se ji ga je** naveliča-l hvali-ti.

Golden (2003) says that the clitics remaining low when there is only a single intonational phrase is not acceptable, and this is confirmed by my informants:

- (36) \*Janez **se je** naveliča-l hvali-ti **ji ga**. (no intonational break)  
 Janez.Nom Refl be.3Sg tire-PtcplMSg praise-Inf 3SgFDat 3SgMAcc  
 ‘Janez grew tired of praising him to her.’

Thus, the domain in which the clitics are the second element appears to be defined at least partly on the basis of prosody.

I argue that the way to understand the Slovenian facts requires simultaneous reference to syntax and to phonology. We can extend the analysis of Chamorro and Passamaquoddy-Maliseet to Slovenian, so that there are again two movement processes: (1) The clitics move to a high position in the clause, where they will be at the left edge of an intonational phrase; and (2) a second syntactic rule moves a prosodic unit to

their left. What is different about Slovenian is that movement of the prosodic unit is sensitive to syntactic constraints, such that it cannot separate material that is syntactically inseparable. It also cannot separate material that is phonologically inseparable.

In other words, both movement rules make reference to phonology (prosodic units). However, both also have to make reference to syntax. The first rule cannot move clitics across certain syntactic boundaries, for instance finite CP boundaries and NP boundaries. These are syntactic boundaries, not prosodic ones. As for the second rule, what it seeks to move is a prosodic unit, but it cannot violate syntactic constraints in doing so, so that what moves is often larger than the prosodic unit it is seeking to move. What moves also cannot violate phonological constraints, so that what moves is at other times not a syntactic constituent at all. In other words, both processes require simultaneous reference to both syntax and phonology. The only way this could be true is if the syntax has access to both.

In the rest of this section I will spell this out, and thereby motivate the need for reference to both phonology and syntax. I will start with movement of the clitics themselves.

### 3.1 Clitic Movement

First, the domain for clitic movement can only be defined with reference to both syntax and phonology. Clitics cannot move across finite clause boundaries or across NP boundaries (see section 3.1.1 on NP boundaries). This is a syntactic constraint, as these boundaries are defined by syntactic categories and do not correlate perfectly with prosodic boundaries (note that Slovenian prescriptively writes a comma before an embedded finite clause, but this does not always indicate an intonational break). First, clitics can only move across non-finite clause boundaries. Consider the following minimal pair:

- (37) a. Pogost-o misli-m, da **ga bo** obiska-l-a.  
 often-Adv think-1Sg Comp 3SgAcc be.Fut3Sg visit-Ptcpl-FemSg  
 ‘I often think that she will visit him.’
- b. Pogost-o **ga** misli-m obiska-ti.  
 often-Adv 3SgAcc think-1Sg visit-Inf  
 ‘I often intend to visit him.’

With a non-finite complement, the verb *misliti* means ‘to intend’. In this case, a clitic from the lower clause climbs into the higher clause (37b). With a finite complement in (37a), clitic climbing is impossible, even if the two clauses are pronounced as a single intonational phrase (which they typically would be, the prescriptive presence of the comma notwithstanding).

It is only with non-finite clauses that prosody becomes relevant. In such cases, clitic climbing correlates with the absence of an intonational boundary, as was illustrated in example (35) and as was recognized by Golden (2003: 223) and Marušič (2008: section 4). Now, one could try to maintain that the prosodic restriction on clitic climbing is actually purely syntactic. For instance, one could try to maintain that intonational phrase boundaries always correspond to CP boundaries. Then non-finite clauses with an intonational break have a CP layer, while ones without do not. The constraint would then be purely syntactic: Clitics cannot cross CP. This cannot be right, because clitics can cross an embedded non-finite question if there is no intonational break. This is allowed with the verb ‘know’, where its complement includes a *wh*-phrase that has moved to Spec-CP:

- (38) Janez **mu bo** že vede-l kako pomaga-ti.  
 Janez.Nom 3SgMDat Fut.3Sg already know-PtcplMSg how help-Inf  
 ‘Janez will certainly know how to help him.’ (Golden 2003: 222, note 12)

According to my informants, if there is an intonational break after ‘know’ in this example, the clitic *mu* would have to be in the embedded clause. Whether there is an intonational break or not, however, the lower clause has to include a CP layer, as it has a *wh*-phrase in the left periphery of the clause.

The verb ‘know’ contrasts with other question-embedding verbs, which do not permit clitic climbing even with a non-finite embedded question:

(39) (Golden 2003: 222, (37a–b))

- a. Janez sprašuje, ali **jo** nagradi-ti s knjig-o.  
 Janez.Nom ask.3Sg Q 3SgFAcc reward-Inf with book-FInstr  
 ‘Janez asked whether to reward her with a book.’
- b. \* Janez **jo** sprašuje, ali nagradi-ti s knjig-o.

In this case, there is an intonational break after the verb.

This contrast between ‘know’ and ‘ask’ shows that the restriction on clitic movement cannot be purely syntactic. In (38), there must be an embedded CP layer, since the embedded clause is a question in which *wh*-movement has occurred. Clitics can evidently cross non-finite CPs, so long as that CP does not correspond to an intonational phrase boundary.

The generalization regarding clitic movement is that it is bounded both syntactically, by finite CP and NP boundaries, and prosodically, by intonational phrase boundaries. This motivates the first rule, which moves clitics to the left edge of the intonational phrase:

- (40) Slovenian 2P Clitic Movement: Slovenian second-position clitics move to the left edge of the intonational phrase (iP) that contains them.
- (41) Constraints: Slovenian 2P Clitic Movement may not cross finite CP or NP.

For purposes here, I do no more than stipulate the constraints that block movement across finite CP and NP boundaries.

A complete account of Slovenian prosody is beyond the scope of this paper. For purposes here, it is sufficient to note that matrix CPs and some embedded CPs map to intonational phrases. If an embedded CP does not map to an intonational phrase, then the 2P Clitic Movement Rule will move the clitics as far to the left as it can within the intonational phrase. If the embedded CP is non-finite, this will move the clitics all the way to the left edge of the higher clause, which is the left edge of the intonational phrase. If the embedded CP is finite, then the clitics will move as far as they can, which is to the edge of the embedded finite CP.

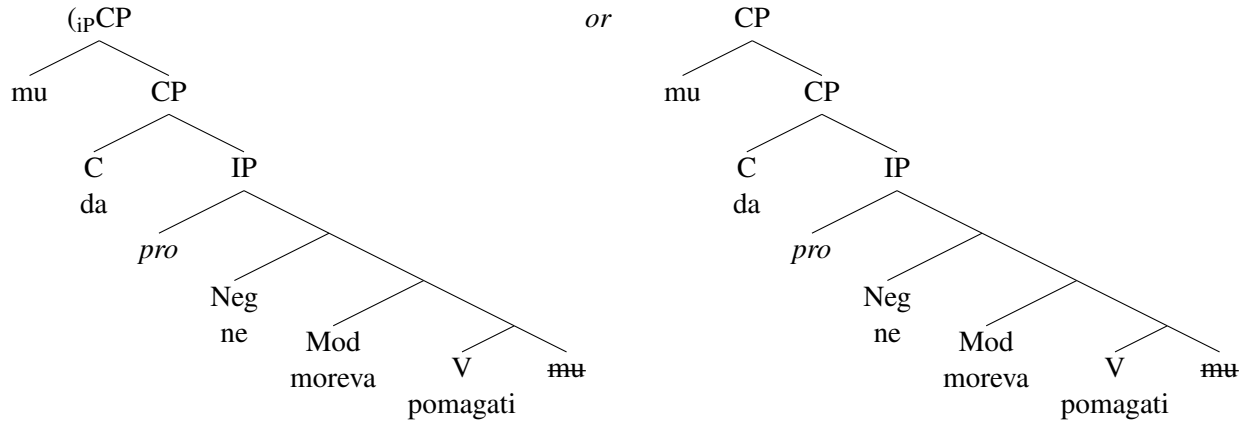
Prosodic structure is built in concert with syntactic structure, so when the CP is built, the syntax knows whether or not it is at the left edge of an intonational phrase. Note that moving the clitics extends the intonational phrase, since intonational phrases map to maximal CPs. The syntax also knows when it reaches the left edge of a finite CP, of course, and so the 2P Clitic Movement Rule will be triggered at that point, as well.

Turning to an example, in an embedded finite clause, the 2P Clitic Movement Rule will move the clitics to the left of complementizers and *wh*-phrases in the embedded CP, since it cannot cross the embedded CP boundary (regardless of whether or not it is an intonational phrase):<sup>6</sup>

- (42) a. ... [da **mu** ne more-va pomaga-ti].  
 Comp 3SgMDat Neg can-1Du help-Inf  
 ‘... that we can’t help him.’ (Miki Muster, *Trubadurji*, p29)
- b.

<sup>6</sup>I use IP rather than TP for Slovenian to remain agnostic about whether Slavic languages have a TP or an AspP or something else.

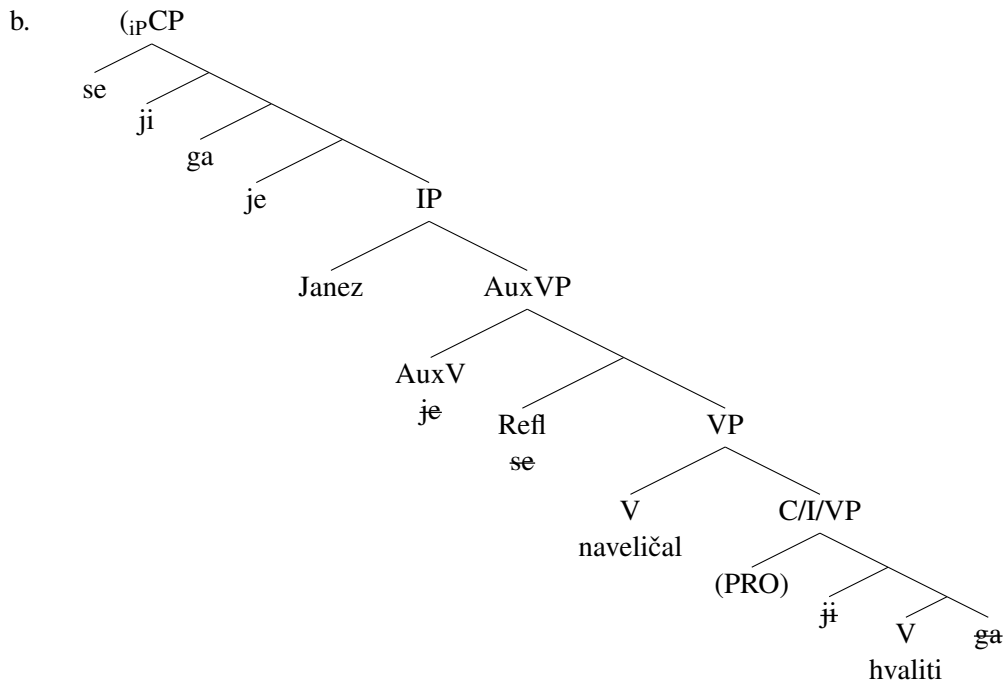




The embedded finite clause may be parsed as an intonational phrase, or not, depending on factors that are beyond the scope of this paper.

With a non-finite clause, if the embedded clause is not parsed as its own intonational phrase, the rule in (40) moves all clitics to the left edge of the matrix clause (note that the example of an embedded clause in (42) also involves a restructuring infinitive under a modal):

- (43) a. Janez **se** **ji** **ga** **je** naveliča-l hvali-ti.  
 Janez.Nom Refl 3SgFDat 3SgMAcc be.3Sg tire-PtcplMSg praise-Inf  
 ‘Janez grew tired of praising him to her.’ (Golden 2003: 223, (41))

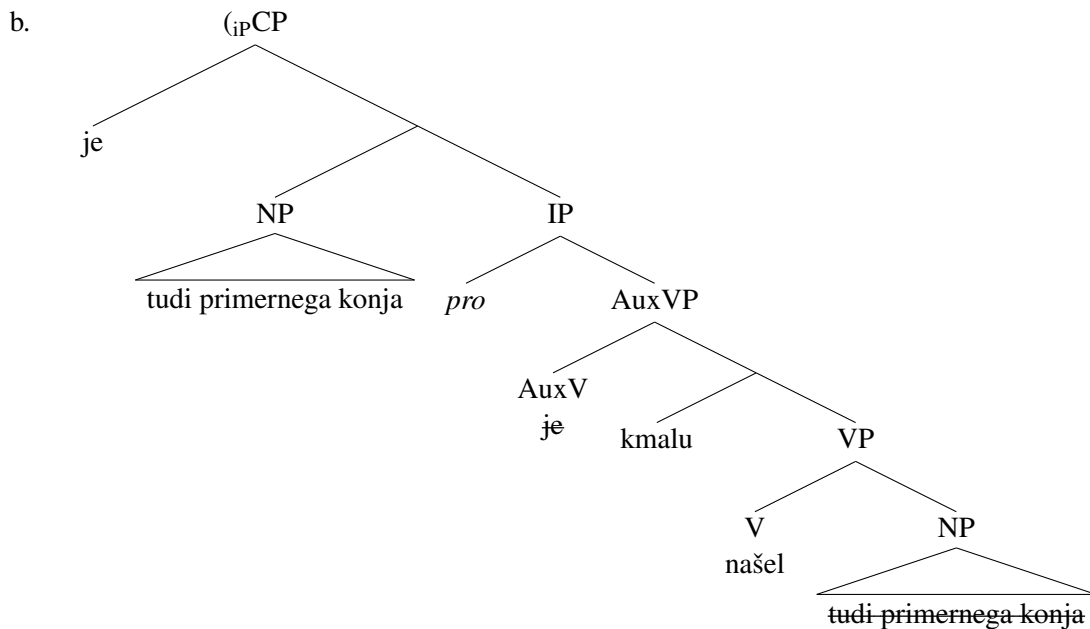


Here it does not matter whether the restructuring infinitive is a CP, IP, or VP, so long as it does not form an intonational phrase on its own. (Note that the starting positions of the clitics also do not matter much, and I commit to no particular analysis of dative and accusative arguments, or the reflexive clitic *se*.)

I assume that the clitics move and adjoin independently, as shown. Their relative order is fixed, which I assume is a language-particular constraint on the order in which they are adjoined. I will have nothing more to say about the relative order of the clitics here.

In a matrix CP, the rule in (40) moves the clitics to the left edge:

- (44) a. Tudi primern-ega konj-a je kmalu naše-l.  
 also appropriate-MSgAcc horse-MSgAcc soon be.3Sg find-PtcplMSg  
 ‘He soon also finds an appropriate horse.’ (Miki Muster, *Trubadurji*, p29)



The clitic rule always follows all other syntactic operations except for Non-Initiality (section 3.2). This includes fronting of the object NP in (44). It does not matter where the fronted object is located, so long as it is within the CP that constitutes the intonational phrase. The clitic rule then fronts all clitics to a position to the left of that (at the left edge of the intonational phrase).

### 3.2 Non-Initiality: Movement to First Position

The second rule can now be formalized as follows:

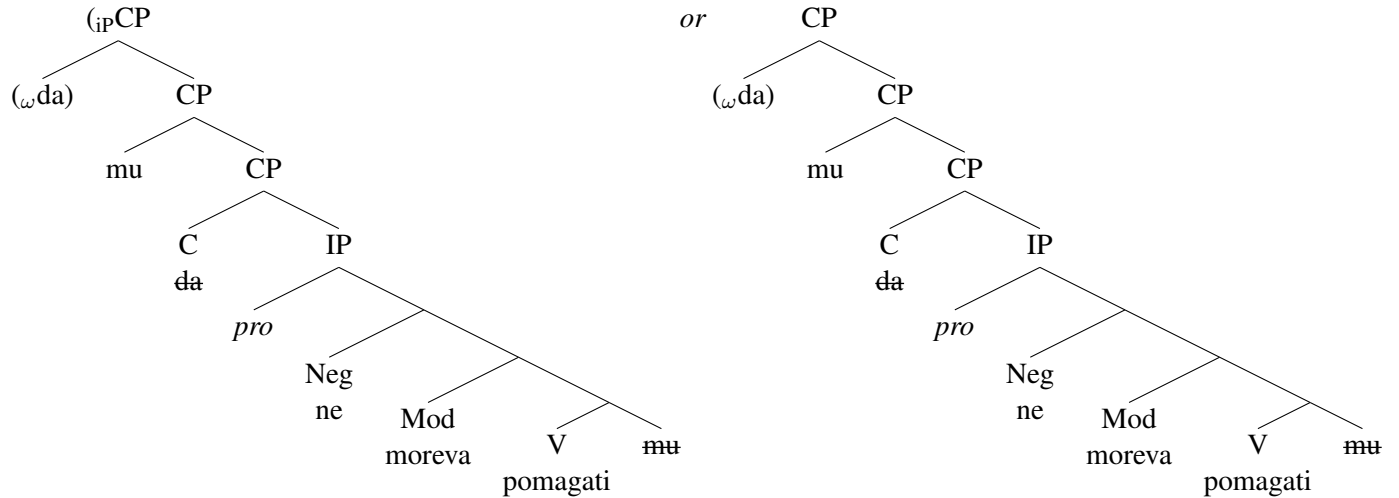
- (45) Slovenian Non-Initiality: Target the first post-clitic prosodic word and adjoin it to the left of the clitic, either by itself or optionally pied-piping the syntactic constituent that contains it.

Note that in Slovenian, material can be pied-piped along with what is targeted by the rule. in exactly the same way that material may be pied-piped along with a *wh*-feature in *wh*-movement.

In the case of a finite embedded clause, this rule will move the complementizer to the left of the clitic, since it is the first post-clitic prosodic word:

- (46) a. ... [da **mu** ne more-va pomaga-ti].  
 Comp 3SgMDat Neg can-1Du help-Inf  
 ‘... that we can’t help him!’ (Miki Muster, *Trubadurji*, p29)

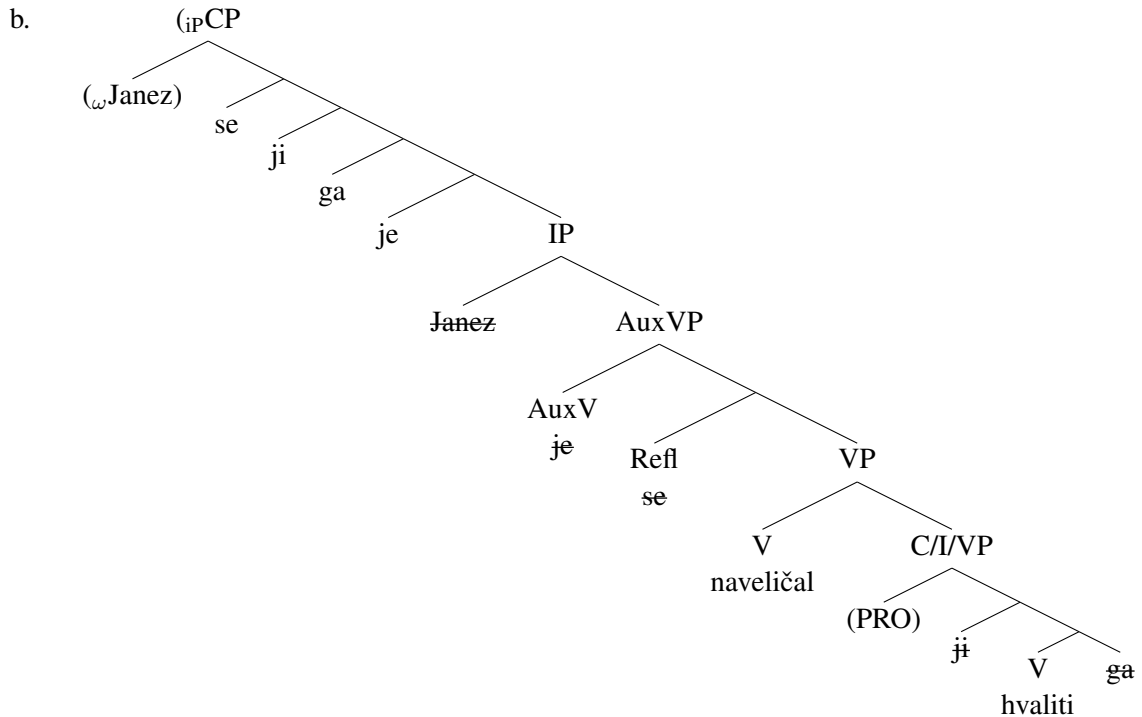
b.



This CP is now complete. If it does not constitute an intonational phrase on its own, it will be parsed into the intonational phrase of the next higher clause.

In the example of a restructuring infinitive in (43), the subject NP *Janez* is the first post-clitic prosodic word, and it is also a syntactic constituent, so it will move to the left of the clitics:

- (47) a. Janez se ji ga je naveliča-l hvali-ti.  
 Janez.Nom Refl 3SgFDat 3SgMAcc be.3Sg tire-PtcplMSg praise-Inf  
 ‘Janez grew tired of praising him to her.’ (Golden 2003: 223, (41))

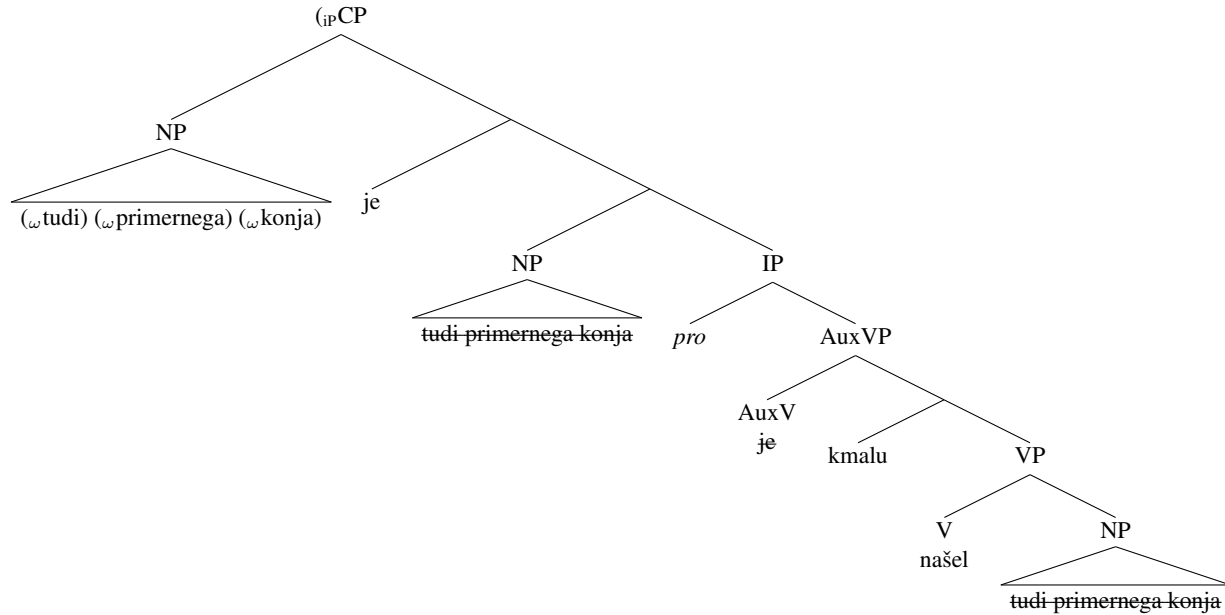


This CP is now also complete, and will be pronounced as a single intonational phrase.

Consider now example (44), repeated below as (48). In this example, the first prosodic word after the clitics is *tudi*, which I assume is an adjunct within the NP ‘an appropriate horse’. However, there are syntactic constraints in Slovenian that prevent certain elements from moving on their own. In this case, NPs are generally islands to extraction in Slovenian (Golden & Sheppard 2000, Golden 2003, Franks 2014,

Stepanov et al. 2016, 2018).<sup>7</sup> This blocks movement of just the prosodic word *tudi*. The response is to do what the rule optionally allows, and pied-pipe the minimum amount of material that is necessary in order to meet syntactic constraints. In this case, the entire NP (three prosodic words) has to pied-pipe along with the prosodic word formed by *tudi*. The result is the following:

- (48) a. Tudi primern-ega konj-a je kmalu naše-l.  
 also appropriate-MSgAcc horse-MSgAcc soon be.3Sg find-PtcplMSg  
 ‘He soon also finds an appropriate horse.’ (Miki Muster, *Trubadurji*, p29)
- b.



This is what gives the appearance of clitics in Slovenian having to follow the first syntactic constituent: many syntactic constituents cannot be broken up, and so have to pied-pipe along with the prosodic word that the rule is targeting. This is true of both PPs and NPs, so a PP will have to front in its entirety (as in examples 29d and 30a), as will all NPs. NPs will even have to pied-pipe material that is parsed prosodically as a separate intonational phrase, for instance the appositive in (31).

One point that is important to make at this point is that the input to the two rules involving clitics has to be a well-formed CP in Slovenian. In (48), an object NP can front to the left edge of the clause prior to the clitics moving. Word order in Slovenian is fairly free, but it is not unconstrained. In what follows, we will see that some restrictions that have been noted in the literature follow from how clause structure works in Slovenian, independently of the clitics.

### 3.3 Prosodically Weak First Elements

We saw above that when the first prosodic word following the clitics is part of an NP or PP constituent, the entire NP or PP has to pied-pipe along with it. In other cases, what fronts can be something that is not a syntactic constituent. This happens when the first syntactic element after the clitics is not parsed as its own prosodic word, but is instead parsed together with subsequent material to form a prosodic word. This is

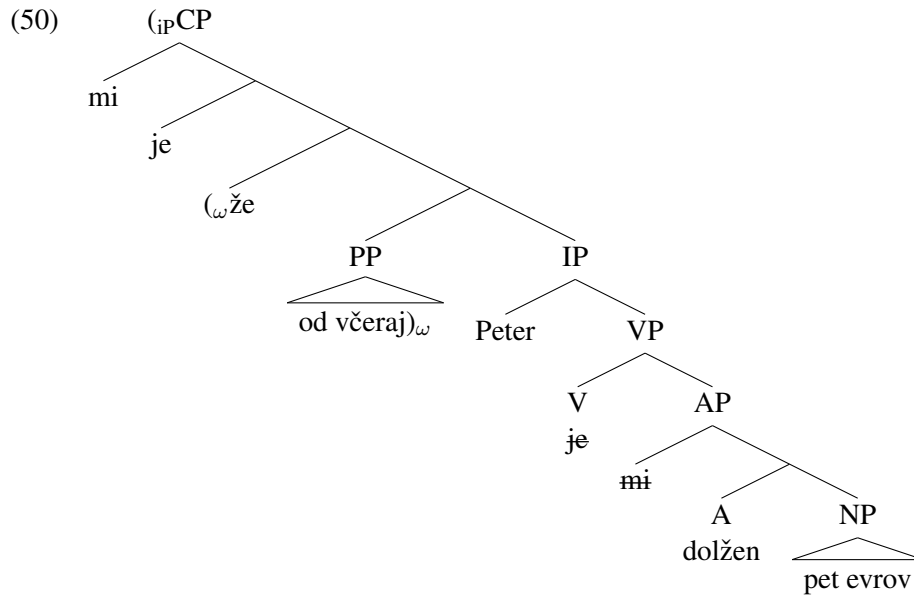
<sup>7</sup>Some speakers may allow extraction from NP in some circumstances (Golden 1996 cited in Stepanov et al. 2016, Bošković 2009, Stepanov et al. 2016). The current analysis predicts that, to the extent that speakers allow this, they will allow an NP to be broken up by second position clitics, too. This seems to be correct, judging from the examples in the works just cited.

the case, I propose, with the element *že*, ‘already’. I assume that this element forms a prosodic word with whatever occurs to its right. The example is repeated from above:

(49) (Marušič & Žaucer 2021)

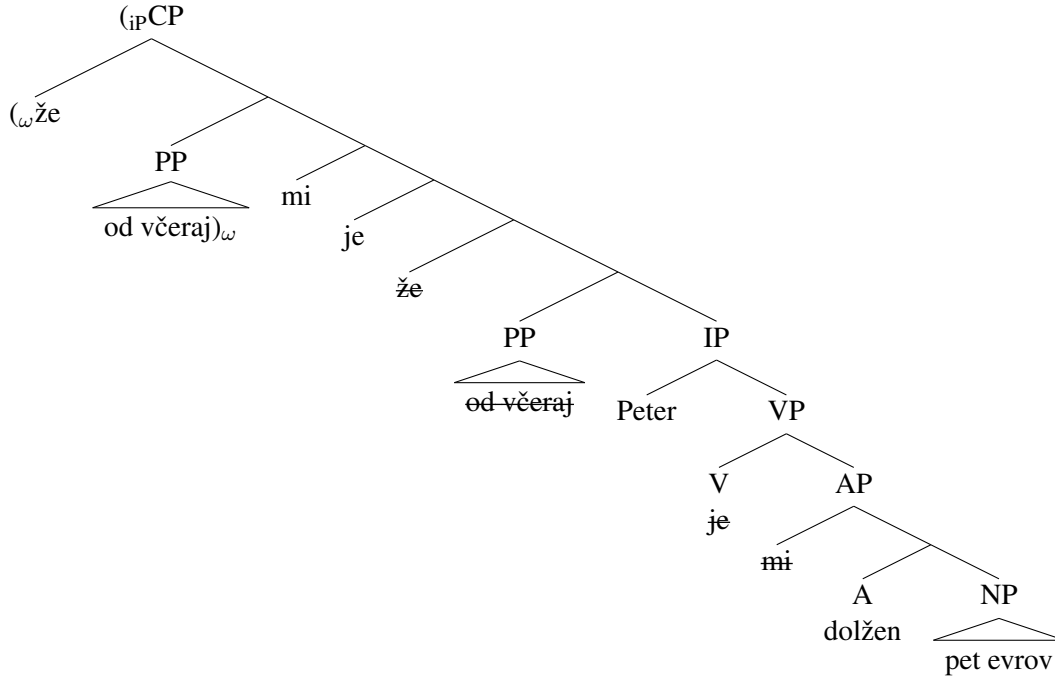
- a. *Že od včeraj mi je Peter dolžen pet evrov.*  
 already from yesterday 1Sg.Dat be.3Sg Peter.Nom indebted.MSgNom five.Acc euro.Gen  
 ‘Peter has owed me five Euros already since yesterday.’
- b. \* *Že mi je od včeraj Peter dolžen pet evrov.*

The clitics first move to the left edge of the intonational phrase:



The Non-Initiality Rule in (45) then applies. The first post-clitic prosodic word is targeted. In this case, however, the first post-clitic prosodic word consists of two constituents, *že* and the PP (I assume the P forms a prosodic word with the first word of its complement). The syntax therefore has to move both *že* and the PP. As with Chamorro, I assume that it does this by copying them, exactly as it accomplishes movement of all sorts. This results in the following:

(51)



As in Chamorro, this appears to be movement of a non-constituent, but it is not. It is movement of a prosodic constituent. Otherwise, movement takes place exactly as it normally would, by copying.

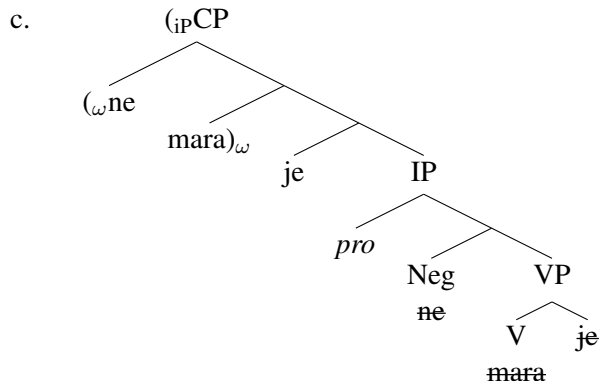
Note that if the PP were longer, more than a single prosodic word, it would still have to front as a unit. As said above, PPs cannot be broken up in Slovenian, and so the entire PP would have to pied-pipe along with the first prosodic word.

### 3.4 Negation

The same thing happens with negation when the lexical verb is finite. With a finite main verb, negation is always immediately preverbal and forms a prosodic word with the verb. In the following example, the first prosodic word following the fronted clitic is a non-constituent consisting of negation and the verb. The syntax again copies the prosodic word, resulting in the following:

- (52) a. Ne mara **je**.  
 Neg like.3Sg 3SgFAcc  
 'He doesn't like her.' (Marušič 2008: (8c))

b. \*Ne **je** mara.



When the main verb is not finite, for instance when it is an infinitive or when it co-occurs with an auxiliary, negation does not form a prosodic word with it. In such a case, negation *can* be the first element for the purposes of the clitics:

- (53) Ne **bo**        š-l-o        brez    razstreliv-a!  
 Neg be.Fut3Sg go-Ptcpl-N without explosive-NGen  
 ‘It won’t go without explosives!’ (Miki Muster, *Trubadurji*, p33)

In this example, the highest verb is the future auxiliary, which is also a second-position clitic. The main verb is a non-finite participle.

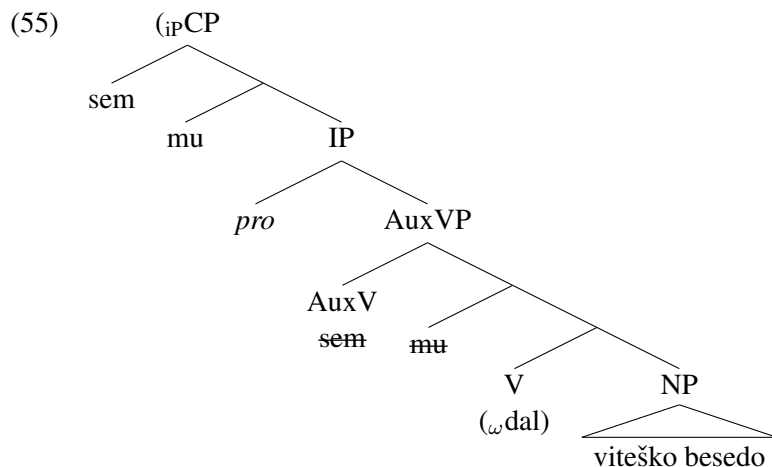
Negation is then prosodically weak or strong, depending on what it co-occurs with in the syntax. When it co-occurs with a finite lexical verb, it is prosodically weak and forms a prosodic word with the verb, and it is then incapable of satisfying the Non-Initiality Rule by itself. The verb must be pied-piped along with it. When it co-occurs with an auxiliary or a non-finite verb, in contrast, it is a prosodic word by itself and can satisfy the Non-Initiality Rule.

### 3.5 Long Head Movement

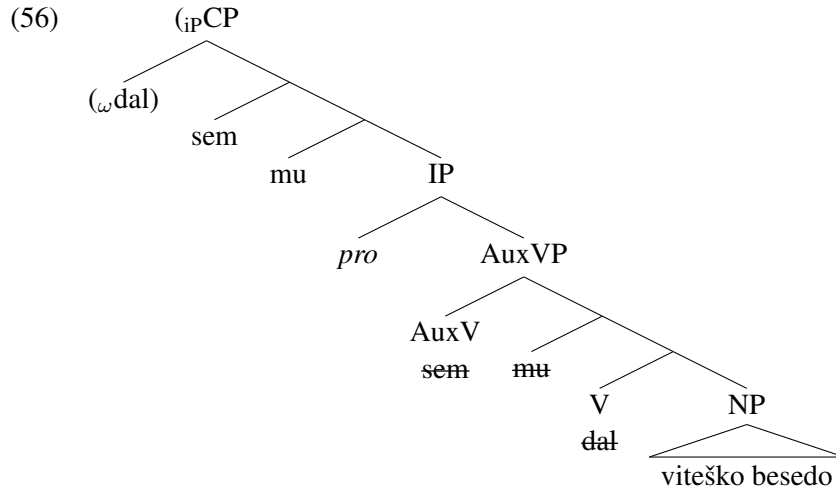
The third interesting case is a syntactic constituent, but it is also only a head. This is the case where what fronts is a verbal participle alone. As observed above, in normal speech, a full VP does not normally front, instead only the participle does:

- (54) a. Da-l            **sem mu**        vitešk-o        besed-o.  
 give-PtcplMSg be.1Sg 3SgMDat knightly-FSgAcc word-FSgAcc  
 ‘I gave him my word as a knight.’ (Miki Muster, *Tubradurji*, p27)
- b. ?? Da-l            vitešk-o        besed-o        **sem mu**.  
 give-PtcplMSg knightly-FSgAcc word-FSgAcc be.1Sg 3SgMDat  
 ‘I gave him my word as a knight.’

In this case, the clitics front to a position where what follows them is the VP:



The first prosodic word after the clitics is the V, *dal*. In this case, there is no syntactic constraint against splitting up a VP in Slovenian. Arguments and adjuncts of V can freely move. V probably can, as well (and probably does across a dative argument, not shown in the trees). This means that the rule targeting a prosodic word can move just the V. There is no need to pied-pipe more material, although this is allowed. But the V can move by itself and adjoin to the left of the clitics:



Movement of this sort has been called “long head movement” in the literature (e.g., Rivero 1991, 1994, Roberts 1994, Borsley et al. 1996). It appears to move one head, the verbal participle, across potentially multiple other heads in the clause (at least the auxiliary verb, sometimes others), in apparent violation of the head movement constraint. This literature has shown that long head movement does not behave like VP fronting (Rivero 1994), and so is probably not movement of a remnant VP which all other elements of the VP have vacated. In the current analysis, there is nothing unusual about long head movement at all. The movement involved is not head movement, and so is not subject to the head movement constraint. Instead, it is movement of a prosodic word. The movement rule takes a prosodic word and moves it across the clitics. This is a different type of movement from any of A-movement, A-bar movement, or head movement (see more on the nature of the movement in section 3.11). There is no reason it should obey the head movement constraint, since it is not movement of a head. It is also not movement of a VP, and so it also does not pattern with VP movement. The movement is also bounded in a different way from either head movement or VP fronting, as it is bounded by the domain set by clitic movement (finite CP, intonational phrase).

Long head movement is said to have four important properties that any analysis needs to explain (Roberts 2001). First, it is a root phenomenon. This follows in the current analysis because in embedded clauses, the highest element below the clitics will typically be a complementizer or *wh*-phrase, not the participle. Second, it is blocked by negation. This follows in the current analysis because long head movement only involves participles, which necessarily co-occur with auxiliary verbs. In such cases, as explained in section 3.4, negation is parsed as its own prosodic word and so can move to pre-clitic position (and negation is always higher than the participle). Third, it is incompatible with movement of other constituents to the left periphery. This follows in the current analysis because if something else is higher than the participle, that other thing will be targeted for movement to the pre-clitic position.

I take the finding that the current analysis explains all of the facts of long head movement as a strong advantage.

### 3.6 Left Branch Extraction with APs

We have just seen that when what follows the clitics is a VP headed by a participle verb, the preference is for only the participle to move. However, in certain registers and for certain speakers, the entire VP can also move. This is allowed by the formulation of the rule in (45). With APs, there is complete optionality. Left branch extraction from APs is possible in Slovenian, so the entire AP does not have to move. What we find is that it can, with complete optionality:



- (57) a. Zelo **si** bi-l-a lep-a včeraj.  
 very be.2Sg be-Ptcpl-FSg beautiful-FSgNom yesterday  
 ‘You were very beautiful yesterday.’
- b. Zelo lep-a **si** bi-l-a včeraj.  
 very beautiful-FSgNom be.2Sg be-Ptcpl-FSg yesterday  
 ‘You were very beautiful yesterday.’

I take this to indicate that pied-piping of material along with the prosodic word is in principle optional in Slovenian. The rule targets a prosodic word, but may pied-pipe a syntactic constituent along with it. This is completely optional with APs, is dispreferred in normal speech with VPs, and is required with NPs and PPs.

Importantly, the movement operation is again sensitive to both prosody and syntax. It targets a prosodic unit, but it can pied-pipe a syntactic unit along with it.

### 3.7 Further Data

Marušič (2008) argues that clitics in Slovenian have no fixed position in the clause, adapting the arguments that Bošković (2001) gave for Serbo-Croatian. All of his data fall out from the present analysis.

Several of the arguments involve two elements in the clause whose order is fixed relative to each other. Marušič (2008) then shows that when only one of them occurs, the clitics can occur on either side of that element. This is not at all surprising in the current account, where the Non-Initiality Rule targets whatever is independently highest in the clause, below the clitics. If two elements are fixed relative to each other, then the lower will never be able to front across the clitics, only the higher one will. But if only one of those elements is present in the sentence, and it can independently be the highest, then it will front to precede the clitics. If some other element can precede it, then that element will front, putting the clitics before it.

For example, the adverb *nedvomno*, ‘undoubtedly’, has to precede the past participle:

- (58) (Marušič 2008: (2a–b))
- a. Včeraj **sem ji** nedvomn-o pokaza-l rezultat-e  
 yesterday be.1Sg 3SgFDat undoubtedly-Adv show-PtcplMSg result-MPIAcc  
 poskus-a.  
 experiment-MGen  
 ‘Undoubtedly I showed her the results of the experiment yesterday.’
- b. \* Včeraj **sem ji** pokaza-l nedvomn-o rezultat-e poskus-a.

The past participle can precede the clitics, but at the same time it cannot precede *nedvomno*:

- (59) (Marušič 2008: (3a–b))
- a. Pokaza-l **sem ji** rezultat-e najnovejšeg-a eksperiment-a.  
 show-PtcplMSg be.1Sg 3SgFDat result-MPIAcc newest-MGen experiment-MGen  
 ‘I have shown her the results of the newest experiment.’
- b. \* Pokaza-l **sem ji** nedvomn-o rezultat-e najnovejšeg-a  
 show-PtcplMSg be.1Sg 3SgFDat undoubtedly-Adv result-MPIAcc newest-MGen  
 eksperiment-a.  
 experiment-MGen  
 ‘I have undoubtedly shown her the results of the newest experiment.’

This follows in the current analysis from whatever forces *nedvomno* to precede the participle in (58). Presumably this is just that, as a sentential adverb, *nedvomno* has to adjoin high, say to IP, and past participles never independently move that high. The input to clitic movement will therefore always have *nedvomno* preceding the past participle, and there is no way to form (59b). Instead the adverb will have to front to the left of the clitics if there is nothing to its left:

- (60) Nedvorn-o        **sem**    **ji**        pokaza-l        izsledk-e        raziskav-e.  
 undoubtedly-Adv be.1Sg 3SgFDat show-PtcplMSg result-MPIAcc research-FSgGen  
 ‘I have undoubtedly shown her the results of the research.’ (Marušič 2008: (4))

In (59a), in contrast, the object NP can be left in situ, which will make the participle the first post-clitic prosodic word (see section 3.5).

Several of Marušič’s other arguments have the same form, and the same explanation. For instance, the adverbs *definitivno*, ‘definitely’, and *mogoče*, ‘possibly’, cannot follow sentential negation. When they co-occur, the clitics cannot follow negation (plus the verb; see section 3.4), they can only follow the adverb. Without the adverb, of course, negation plus the finite verb can independently be the highest element, and so they together can front to the left of the clitics (see section 3.4):

- (61) (Marušič 2008: (5a–b), (7b–c))
- a. Janez        definitivn-o    ne    seka        drv-i.  
 Janez.Nom definitely-Adv Neg chop.3Sg firewood-PIGen  
 ‘Janez definitely doesn’t chop firewood’
  - b. \* Janez ne seka definitivno drv-i.
  - c. Definitivn-o    **mi**    **jih**        ne    seka        v lop-i.  
 definitely-Adv 1SgDat 3PIGen Neg chop.3Sg in shed-FSgLoc  
 ‘He definitely doesn’t chop them for me in the shed.’
  - d. Ne seka        **mi**    **jih**        (\*definitivn-o)    v lop-i        (ampak na dvorišč-u).  
 Neg chop.3Sg 1SgDat 3PIGen (\*definitely-Adv) in shed-NSgLoc (but    on yard-MLoc)  
 ‘He doesn’t chop them for me in the shed (but in the yard).’

Similarly, the adverbs *spet*, ‘again’, and *nepetrgoma*, ‘nonstop’, are constrained to appear in that order, and so only the first is able to precede the clitics when they co-occur. If only one is present, then it of course can precede the clitics (Marušič 2008: (10–11)).

The placement of clitics in multiple wh-questions also falls out from the analysis. Slovenian is a multiple wh-fronting language, where all wh-phrases occur in the left periphery. In the current analysis, the wh-phrases will all move to the left edge of the CP, and the clitics then move to the left of them. Then the first prosodic word fronts across the clitics. This will put the clitics after the first wh-phrase, which is correct (Golden & Sheppard 2000: 198):

- (62) Kdo        **mi**    **je**        kje    kaj        posodi-l?  
 who.Nom 1SgDat be.3Sg where what.Acc lend-PtcplMSg  
 ‘Who loaned what to me where?’ (Marušič 2008: (12))

As can be seen, all of Marušič’s (2008) ordering facts fall out from the current analysis. The order of elements below the clitics has to be well-formed in Slovenian, so only something that can independently be highest can be the first element before the clitics.

### 3.8 Interim Summary

Slovenian is a very interesting case, which shows us that a purely post-syntactic movement operation will not work to account for the data. As in Chamorro and Passamaquoddy-Maliseet, the two operations involved target prosodic constituents. However, in the case of Slovenian, fronting of a prosodic word over the clitics cannot violate syntactic constraints. The result is that something larger than a single prosodic word often has to move. Additionally, the domain for clitic movement cannot be described only in prosodic or syntactic terms, but requires both. Capturing these facts requires simultaneous reference to both syntax (constraints on movement, pied-piping of a syntactic constituent) and phonology (prosodic units). The simplest account is one where the syntax has access to phonology. Since it is the syntax, it of course also makes reference to syntactic categories and constraints.

### 3.9 Finite CPs versus Other Constituents

So far, I have mostly discussed the placement of clitics in finite CPs. In finite CPs, both of the rules in (40) and (45) are obligatory. This results in the clitics always being in second position. In other types of constituents, however, the rules appear to be optional. For instance, in non-finite clauses, when the non-finite clause constitutes its own intonational phrase (boundary marked with “|”) and the clitics therefore do not climb into the higher clause, they can either precede or follow the verb:

(63) (Golden 2003: 223, (42a–b))

- a. Janez **se je** naveliča-l | hvali-ti **ji ga**.  
Janez.Nom Refl be.3Sg tire-PtcplMSg praise-Inf 3SgFDat 3SgMAcc  
‘Janez grew tired of praising him to her.’
- b. Janez **se je** naveliča-l | **ji ga** hvali-ti.

In (63b), this makes the clitics initial in their intonational phrase.

I tentatively propose that the Clitic Rule in (40) is obligatory in clauses of all types, but the Non-Initiality Rule in (45) is optional in non-finite clauses. It applies in (63a), and fronts the non-finite verb to the left of the clitics, but does not in (63b). Since the clitics have all fronted by the Clitic Rule, they are initial in their intonational phrase.

In contrast, judging by the data in Marušič (2008), the Non-Initiality Rule is obligatory in APs, while the Clitic Rule is optional. It appears from the data in Marušič (2008: (13–17)) that clitics cannot be initial inside an AP, but they do not have to be second. In the following examples, the reflexive clitic cannot be initial in the AP:

(64) (Marušič 2008: (15a–b))

- a. fantek [drž-eč **se** za glav-o]  
boy.MSgNom hold-Adj Refl for head-FSgAcc  
‘a boy holding his head’
- b. \* fantek [**se** drž-eč za glav-o]  
boy.MSgNom Refl hold-Adj for head-FSgAcc  
‘a boy holding his head’

But in the following, third position is also possible:

(65) (Marušič 2008: (16a–c))

- a. ?? un [v omar-i se polglasn-o hihitaj-oč] kreten  
 that.MSgNom [in closet-FSgLoc Refl silently-Adv laugh-Adj] idiot.MSgNom  
 ‘that idiot laughing silently in the closet’
- b. un [v omar-i polglasn-o se hihitaj-oč] kreten
- c. un [v omar-i polglasn-o hihitaj-oč se] kreten

I assume that the reflexive clitic is generated in a position close to the adjective. This is a deverbal adjective, and the reflexive clitic appears to be a lexical specification of the base verb. Suppose nevertheless that the reflexive clitic can be merged either inside or outside of the adjective-forming head. Then both of (65b–c) have the reflexive clitic in its base-position: In (65b), it is outside the adjective-forming head, while in (65c), it was base-generated under the adjective-forming head, while the verb moved across it to the adjective-forming head. One of the adverbs was base-generated adjoined on the left, while the other was fronted by the obligatory Non-Initiality Rule. In contrast, in (65a), both rules have applied: first *se* fronts, then the first prosodic word after it fronts across it. Applying the clitic rule is apparently marginal inside APs.

In (66c–d) below, the reflexive clitic is again in its base position, with the V moving across it in (66d) by the Non-Initiality Rule. In (66c), the adverb is fronted by the Non-Initiality Rule. In (66a), the verb also moves across the reflexive clitic, while the two adjuncts are adjoined on the right. In all of these orders, the Non-Initiality Rule has applied.

(66) (Marušič 2008: (17a–d))

- a. tist kreten, [hihitaj-oč se polglasn-o v omar-i]  
 that.MSgNom idiot.MSgNom laugh-Adj Refl silently-Adv in closet-FemLoc  
 ‘that idiot laughing silently in the closet’
- b. ?? tist kreten, [hihitaj-oč polglasn-o se v omar-i]
- c. tist kreten, [polglasn-o se hihitaj-oč v omar-i]
- d. tist kreten, [polglasn-o hihitaj-oč se v omar-i]

(66b) is degraded because there is no real way to form it. Perhaps, very marginally, the adjective could be fronted across a left-adjoined adverb.

To summarize this subsection, Slovenian second position clitics are strictly second position in finite clauses, but they can be initial in non-finite clauses. In APs, they cannot be initial, but otherwise they can be in any position the grammar of APs can generate. The current analysis allows this by making one of the two rules optional in each case.

### 3.10 Clitics in Initial Position

In the interests of completion, there are many cases in Slovenian of clitics in initial position. These are discussed in Golden & Sheppard (2000: 196) and Marušič (2009). An example from the same comic book appears below:

- (67) Ta-le bo kot nalašč za-me! **Ga** vsaj lahk-o dvigne-m!  
 this.MSgNom be.Fut3Sg as purposely for-1SgAcc 3SgMAcc at.least can-Adv lift-1Sg  
 ‘This one is like it was made for me! It at least I can lift!’ (Miki Muster, *Trubadurji*, p29)

Marušič (2009) suggests that all such examples have a null first element. In this example, this would be a null topic, something like ‘this one’ (the demonstrative from the previous sentence). Whether this is correct, or whether the Non-Initiality Rule can instead sometimes be optional, I will have to leave to future research.

### 3.11 The Nature of the Movement Operations

In the proposed analysis, there are two movement operations that make reference to prosody. The 2P Clitic Movement Rule moves second position clitics to the left edge of their intonational phrase. The Non-Initiality Rule fronts a prosodic word across the clitics. In this subsection, I explore the nature of these two movement operations in greater detail.

First, the 2P Clitic Movement Rule has some properties of A-bar movement. It can move clitics a relatively long distance, like A-bar movement, and it puts the clitics in the left periphery of a finite clause. However, in other ways it has very different properties. As we have already seen, for instance, it cannot cross finite CP boundaries, unlike A-bar movement like *wh*-movement. Additionally, Marušič & Žaucer (2017) show that it can violate the Coordinate Structure Constraint (CSC), unlike regular A-bar movement. *Wh*-movement cannot move something out of just one conjunct:

- (68) \* Čigave prijatelj-e je Janez vide-l [t in Varj-o]?  
 whose friend-MPIAcc be.3Sg Janez.Nom see-PtcplMSg and Varja-FSgAcc  
 ‘Whose friends and Varja did Janez see?’ (Marušič & Žaucer 2017: (8b))

In contrast, clitics can move out of a non-finite clause that is the first conjunct of a coordinate structure:

- (69) (Marušič & Žaucer 2017: 70, (1a–b))
- a. Janez je hote-l [[jo spozna-ti] in [ji predstavi-ti Petra]].  
 Janez.Nom be.3Sg want-PtcplMSg 3SgFAcc meet-Inf and 3SgFDat present-Inf Peter.Acc  
 ‘Janez wanted to meet her and introduce Peter to her.’
- b. Janez jo je hote-l [[spozna-ti] in [ji predstavi-ti  
 Janez.Nom 3SgFAcc be.3Sg want-PtcplMSg meet-Inf and 3SgFDat present-Inf  
 Petra]].  
 Peter.Acc  
 ‘Janez wanted to meet her and introduce Peter to her.’

Recall that clitic climbing may or may not take place, depending on prosodic phrasing, and that when it does not take place, the clitics can be first in the non-finite clause (section 3.9). In (69a), the clitics have not moved out of the non-finite clauses, presumably because they are leftmost in their intonational phrases. In (69b), the clitic from the first conjunct has moved into the higher clause, in apparent violation of the CSC.

Interestingly, only the clitic from the *first* conjunct can do this. The clitic from the second conjunct cannot, either on its own or in combination with the clitic from the first conjunct:

- (70) (Marušič & Žaucer 2017: 70, (1c–e))
- a. \* Janez ji je hote-l [[jo spozna-ti] in [predstavi-ti Petra]].  
 Janez.Nom 3SgFDat be.3Sg want-PtcplMSg 3SgFAcc meet-Inf and present-Inf Peter.Acc  
 ‘Janez wanted to meet her and introduce Peter to her.’
- b. \* Janez ji jo / jo ji je hote-l [[spozna-ti] in [predstavi-ti Petra]].

This pattern follows on the prosodic analysis proposed here. In (69a), there is a prosodic break before each non-finite clause. In (69b), the first non-finite clause is pronounced as a single intonational phrase with the matrix clause. The coordinator forces an intonational break before the second conjunct, so that it can never form an intonational phrase with the preceding material (Marušič & Žaucer 2017). It follows that only the clitic from the first conjunct will ever move into the matrix clause.

These facts are then additional evidence in favor of the analysis proposed here. However, they also show something about the nature of the movement involved: it is not like A-bar movement of a wh-phrase, which has to obey the CSC. Clitic movement is apparently insensitive to the CSC.

On the other hand, clitic movement does seem to be sensitive to some other islands. According to Golden & Sheppard (2000) and Golden (2003), clitic movement cannot violate the Complex NP Constraint (CNPC), in the same way that wh-movement cannot:

(71) (Golden 2003: 210, (6a–c))

- a. Ve-m, da **je** [želj-a [razume-ti **jo**]] čudn-a.  
 know-1Sg Comp be.3Sg desire-FSgNom understand-Inf 3SgFAcc odd-FSgNom  
 ‘I know that the desire to understand her is odd.’
- b. \* Vem, da **jo<sub>1</sub> je** [želja [razume-ti  $t_1$ ]] čudn-a.
- c. \* Koga<sub>1</sub> ve-m, da **je** [želj-a [razume-ti  $t_1$ ]] čudn-a.  
 who.Acc know-1Sg Comp be.3Sg desire-FSgNom understand-Inf odd-FSgNom  
 ‘Who do I know that the desire to understand is odd?’

Golden’s example involves a subject NP, but clitics also cannot move out of object NPs, according to my informants (Golden & Sheppard 2000: 204, (24) have a similar but more complicated example):

- (72) a. Ima-m želj-o razume-ti **ga**.  
 have-1Sg desire-FSgAcc understand-Inf 3SgMAcc  
 ‘I have the desire to understand him.’
- b. \* Ima-m **ga** želj-o razume-ti.

Movement here is not blocked by the presence of an intonational phrase boundary, as this sentence is not pronounced with one. So this seems to be a syntactic constraint, not a prosodic one.

Golden & Sheppard (2000) show another contrast, where a clitic can move out of a predicative AP but not an attributive one, which is embedded inside an NP:

(73) (Golden & Sheppard 2000: 203, (22a–b))

- a. Politik-i **so je<sub>1</sub>** vedno [AP lačn-i  $t_1$ ].  
 politician-MPINom be.3Pl 3SgFGen always hungry-MPINom  
 ‘Politicians are always hungry for it.’
- b. \* Bil **je<sub>1</sub> je** [NP[AP  $t_1$  lačen] politik].  
 be.Ptcp 3SgFGen be.3Sg hungry.MSgNom politician.MSgNom  
 ‘He was a hungry-for-it politician.’

The conclusion seems to be that clitic movement is sensitive to some syntactic islands (the CNPC) but not to others (the CSC, asymmetrically). One way to make sense of this is to say that clitic movement is sensitive to all syntactic constraints, the same way the Non-Initiality Rule has to respect all syntactic constraints in Slovenian. So it has to obey the CNPC. As for the CSC, we could follow the line of research that says that it is a constraint on LF representations, not on movement itself (Muadz 2001, Ruys 1992, Fox 2000, Johnson 2009). What is banned is for a variable in just one conjunct to be bound from outside that conjunct. This is violated in (68), where the wh-phrase binds its trace inside the first conjunct. Given that clitic movement seems to have no semantic consequences (next), we could hypothesize that the clitic is interpreted inside the first conjunct at LF in the CSC violation case. If this is true, then there is no variable inside the conjunct that is bound from outside. Example (69b) is therefore not a CSC violation at all.

Golden & Sheppard (2000) show that clitics act like they are in their base positions for most processes, meaning that clitic movement does not affect any syntactic or semantic processes. For instance, clitics act like they are in their base positions for idiom interpretation and case assignment, including the genitive of negation (Golden & Sheppard 2000: 202–204). Marušič (2008, 2009) shows that clitic movement obligatorily reconstructs for Binding Condition C. The following example shows that the reflexive clitic is necessarily interpreted in the lower clause in a case of clitic climbing (so clitics reconstruct for Binding Condition A):

- (74) Ali se zna-š oble-či?  
 Q Refl know.how-2Sg dress-Inf  
 ‘Do you know how to dress yourself?’

It should be clear from all of the examples here that clitic movement does not affect interpretation in any way.

Clitic movement therefore appears to be distinct from A-movement, A-bar movement, and head movement. It does not affect interpretation in any way, and the domain it moves across is a prosodic one rather than a syntactic one. At the same time, it is subject to all of the same constraints as syntactic movement (other than the CSC, which has a plausible explanation).

Now consider the movement triggered by the Non-Initiality Rule. This movement is also distinct from A-movement, A-bar movement, and head movement. We have already seen that it targets a prosodic unit, not a syntactic one, and it can even move elements that do not constitute a syntactic constituent. If what it moves is only a head (the verbal participle), the movement is not subject to the head movement constraint. At the same time, the movement is subject to syntactic constraints, such that it cannot break up NPs and PPs.

I conclude that the two movement operations involved are different from previously identified syntactic movement operations (A-movement, A-bar movement, and head movement). Like those movement operations, however, they are subject to various syntactic constraints. These operations therefore cannot be purely prosodic, they have to be syntactic. It will not do to shunt them off to some post-syntactic module of grammar, they must be rules of the syntax proper.

### 3.12 Summary

The proposal in this paper is that we should give up the assumption that syntax has no access to phonology, and we should allow syntactic movement operations to target prosodic units. In the cases of Chamorro and Passamaquoddy-Maliseet, the movement operations appear to make reference *only* to prosody. This means that one could maintain that they take place at a post-syntactic level, involving operations that duplicate the syntax but are supposedly not syntactic. As redundant as this is, it could work, if one really wanted to maintain that syntax has no access to phonology. The case of Slovenian is different: the movement operations involved target prosodic units, but they are subject to syntactic constraints that we can see hold of purely syntactic operations. If this is correct, then Slovenian shows that it is *necessary* to give up the assumption that syntax and phonology are strictly separate.

## 4 Can We Give Up Separation?

I have suggested in this paper that second position clitics receive a simple and natural analysis if we allow syntax to operate on phonological units, specifically prosodic ones. This requires giving up the strict separation of syntax and phonology. This is a major shift, since almost all current approaches to grammar adopt

Zwicky's (1969) Principle of Phonology-Free Syntax and assume an architecture in which syntax has no access to phonological information.

In fact, however, giving up strict separation will have no adverse consequences. The way syntactic operations are typically formalized already guarantees that they will not pay attention to phonology in most cases, meaning that we will not face an overgeneration problem.

The motivation for strict separation of syntax from phonology is the observation that syntactic processes apparently make no reference to phonological information. For example, consider head movement of the kind that raises verbs to T(ense) in French or to C(omplementizer) in verb-second languages like German. This head movement process is never sensitive to phonology. For example, no language has a head movement rule that raises only verbs that start with [b] to T. Similarly, no verb-second language raises only verbs with two syllables to C but not verbs with only one syllable. As another example, this time from phrasal movement, no language fronts wh-phrases that end with a sonorant but leaves in situ wh-phrases that end in an obstruent.

Given such indisputable facts, an architecture in which syntax *did* have access to phonological information would appear to overgenerate. Such an architecture would allow a rule that only moved heads of a certain number of syllables, or only moved wh-phrases that ended in a sonorant. Since syntactic operations apparently never do this, the logic goes, the syntax must have no access to this information.

However, there is in fact a wealth of information that the syntax *must* have access to, but it systematically fails to use for processes like movement. For example, the syntax must have access to information regarding coordination and modification, since it is the syntax that builds structures involving coordination and modification. So, in principle, it should be possible for a movement rule to target only coordinated NPs. Similarly, it should be possible for a movement rule to move only NPs with attributive adjectives, or only NPs modified with relative clauses. In principle, there could be a VP ellipsis process that only deletes VPs if they include an adverb. No such syntactic processes exist.

As another example, the difference between a transitive and an intransitive verb must be present in the syntax, because it makes a difference to what phrase structure is projected, what auxiliary is selected (in some languages), what form a causative will take (in many languages), etc. At the same time, however, no language (to my knowledge) has a V-to-T or V-to-C movement rule that targets only transitive verbs and not intransitive verbs (or vice versa).

Another type of information that the syntax should have access to but head movement ignores is tense on the highest verb. Most Germanic languages make at least a past/non-past distinction on the highest finite verb, but in all of them this distinction is irrelevant to head movement. In English, for instance, subject-auxiliary inversion completely ignores this information, yielding both *Is it raining?* and *Was it raining?*. The same is true of subject-verb agreement: there is also no V-movement rule that targets only verbs that agree with a first person subject (cf. Harris 2017: 206–207). Along the same lines, Halle & Marantz (1993) point out that verb class morphemes (e.g., theme vowels in Romance) are also invisible to the V-to-T rule in Romance languages. (Halle & Marantz 1993: 135 accordingly push verb class morphemes out of the syntax, unnecessarily.)

As another example of information that is available to the syntax but ignored, Halle & Marantz (1993) conclude that features that distinguish count from mass nouns must be part of the syntax, because they make a difference to determiner selection, quantifier selection, etc. Again, however, no rule of wh-movement, topicalization, or raising targets only count nouns and not mass nouns.

What these examples show is that there is a surfeit of information in the syntactic component that syntactic operations ignore, despite having direct access to it. Even models that strictly separate syntax from phonology overgenerate, in the sense that they allow syntactic operations that do not exist. It also cannot be true that the only way to stop the syntax from using some piece of information is to deprive it of that information, because all of the kinds of information just discussed *must* be available to the syntax. Rather, independent principles must severely restrict what syntactic operations can be sensitive to. It is then



likely that these independent principles will also stop syntactic operations from being sensitive to phonology, without the need for an architecture with strict separation.

In actual practice, this has already been done. The selective blindness of syntactic operations has always been implicit in the way syntacticians have formulated rules or operations. In fact, it is the motivation for positing grammatical categories in the first place. All NPs are grouped together as NPs because they pattern the same, regardless of their syntactic makeup. The same goes for all the syntactic categories: PPs, VPs, CPs, APs, and so on. Considering them to be the same thing, and formulating rules like selection and movement that refer only to these categories, implies that their internal makeup, though visible, is simply not relevant. Prominent in early discussions of subject-auxiliary inversion in English was the recognition that it ignores everything except the structurally highest auxiliary verb, inverting it with the subject NP. The internal makeup of the subject NP, and the content of the highest auxiliary, was explicitly recognized as being irrelevant (this is what is behind the rule being hierarchical rather than linear; Chomsky 1968: 51–52, Chomsky 1971, 26–28; see Berwick et al. 2011).

The severe limitations on syntactic operations have also been recognized explicitly before, in the form of Relativized Minimality (Rizzi 1990). The point of Relativized Minimality is that particular syntactic operations only care about *one particular thing*: A-bar movement can only see A-bar positions, A-movement can only see A-positions, and head movement can only see head positions. None of them can see other types of positions, nor can they see the actual content of the positions they are concerned with. Importantly, the content these syntactic processes cannot see includes purely *syntactic* content. What Relativized Minimality recognizes is that syntactic operations are *selectively blind*. There is a very limited amount of information that they are sensitive to, and they are not sensitive to anything else.

So, for instance, when syntacticians posit a head movement rule that moves V to T, the way it is typically formalized it makes reference only to head status ( $X^0$ ) and grammatical category (V and T). Nothing else is referred to in the rule. Such a formalization has the result that it ignores everything else: verb class, agreement, tense, number of syllables, and so on. There is no reason to pick out “number of syllables” and distinguish it as not being part of the syntax; the rule ignoring it is no different from the rule ignoring tense and agreement, which are undoubtedly syntactic.

Similarly, when syntacticians formalize a rule or process of A-movement, it typically only refers to grammatical category (as it typically only targets NPs) and to something like case (because only core arguments and not obliques undergo it). Nothing else is referred to in the rule. Formalizing the rule this way, it then ignores everything like whether the NP includes a determiner, whether it includes attributive adjectives, or whether it is coordinated. It also ignores how many prosodic words and syllables the NP is, and what segments it is composed of. But again, there is no reason to distinguish the phonological information and say that it is not part of the syntax, since so much other information is ignored, as well.

The same is true of A-bar movement. A rule of wh-movement is typically formulated to look only for a [wh] feature, and ignore everything else. The result is that phonology is ignored but most syntactic information is as well.

The important point is that there is no need for an architecture that strictly separates phonology from syntax, because the form that syntactic operations take already excludes phonology. In other words, giving up strict separation is indeed innocuous, and should in fact be welcome, as it removes a redundancy. Moreover, if this paper is correct and syntactic operations *can* refer to phonological information (prosodic units), then separation *must* be given up. What we actually want is a grammatical architecture where all information is present and available, but particular operations are severely limited in what information they can refer to.

## 5 Conclusion

I have argued in this paper that we should give up the assumption that syntax has no access to phonology, and give it such access. Doing so enables a very simple analysis of second position clitics, where they are exactly analogous to verb second phenomena. It also has no adverse consequences, as phonological information is already de facto excluded from most syntactic processes by their very narrow scope. The proposed analysis also makes sense of certain other recalcitrant phenomena, like long head movement (section 3.5).

It should be noted that this is not the first time that researchers have argued for a role for phonology in syntax. For example, Richards (2010, 2016) has argued that the syntax must be able to refer to prosody. There are also numerous cases where people have argued that some syntactic process refers to phonology. Examples include hyperbaton in Classical Greek and Latin (Agbayani & Golston 2010, 2016); non-constituent coordination (Bruening 2015); object shift in Scandinavian (Holmberg 1999); and phonological agreement (Sande 2016), to name a few. In many of these cases researchers have proposed post-syntactic analyses, but there is no reason to do that. Given the results of this paper, these phenomena can be part of the syntax proper, and should be. There is no reason to have two modules of syntax, one before phonology and one after. There is only one module of syntax, which is responsible for the placement of all elements in the syntax. If that is true, then it is indisputable that syntax must have access to phonological information, since the placement of numerous elements is demonstrably determined by phonological information.

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