

Discontinuous Noun Phrases and Irrealis Movement in Iquito

Brianna Wilson and Andrew Murphy

The University of Chicago

briannawilson@uchicago.edu, andrew.murphy@uchicago.edu

January 5, 2022

Abstract

This paper discusses two related puzzles about word order in Iquito. The first involves the various patterns of discontinuity exhibited by noun phrases containing determiners both within NPs and PPs as well as at the clause level. We show the attested variation in the nature of split constructions can be straightforwardly accounted for under a distributed deletion analysis of in which copy deletion applying cyclically interacts with an independently-motivated second position requirement within NPs and PPs. The second puzzle pertains to the observation that irrealis marking in Iquito is expressed solely through word order, that is, by placing any phrase in a position between the subject and the finite verb. We provide an analysis of this irrealis position as involving movement to an inner specifier of T. We show that this accounts for several facts about this position, unlike competing verb movement analyses, and furthermore makes correct predictions about the kind of discontinuous constituents that can appear there. Finally, we also discuss restrictions on split subjects in Iquito, showing that they instantiate a transitivity restriction that is reminiscent of the ‘Subject In-Situ Generalization’.

1 Introduction

Many languages have so-called ‘split NP’ constructions in which some sub-constituent of the noun phrase appears discontinuously from the rest of the NP, e.g. Left-Branch Extraction in Slavic (Siewierska 1984; Borsley & Jaworska 1988; Corver 1992; Bošković 2005), Hungarian (Szabolcsi 1983) and Ch’ol (Little 2020), *combien*-splits in French (Starke 2001; Kayne 2002), split NPs in Greek (Androutsopoulou 1998; Ntelitheos 2004) and Chichewa (Mchombo 2004), *was für*-splits in German (Abels 2003; Leu 2008), *wat voor*-splits in Dutch (den Besten 1985; Corver 2017), and discontinuous NPs in Mohawk (Baker 1996) and Kiowa (Adger et al. 2009) as well as in Meskwaki (Dahlstrom 1987) and other Algonquian languages (Johnson & Rosen 2015). Below are illustrative examples from Serbo-Croatian (1a) and Meskwaki (1b) in which a demonstrative determiner is split from its associated noun. Throughout the paper, we underline both the determiner and the associated noun (phrase) both in the glosses and the free translation.

- (1) a. Ta je pro vidio kola
that is.3SG seen car
‘That car, he saw.’ (Bošković 2005: 2)
- b. ma-haki kenenohamwihene wi-teko-waki
these cause-to-understand.1/2.IND owl-PL
‘I made you understand these owls.’ (Dahlstrom 1987: 57)

Languages are known to vary with regard to the kind of NP-internal material that can participate in a split construction. For example, adjectives and numerals can be readily extracted in Slavic, in addition to demonstratives. Furthermore, split constructions are typically optional in a given language, albeit with associated effects on prosody and/or information structure (Fanselow & Féry 2006; Schultze-Berndt & Simard 2012).¹

In this paper, we focus on split NP constructions in the SVO language Iquito (Zaparoan; NW Peru).² Discontinuous noun phrases in Iquito differ from the languages described above in that splits are only possible with demonstrative determiners. Rather untypically, in the syntactic contexts where we see discontinuous noun phrases, the observed split is obligatory, not optional. Consider the examples in (2). A bare NP may receive a definite interpretation in the absence of a definite article (which Iquito lacks) and must appear pre-verbally (2a). If the noun is modified by a demonstrative determiner such as *iina* ('this'), the determiner appears before the verb and the noun must follow it (2b). As (2c) shows, the split configuration is obligatory in this construction.

- (2) a. Ikwani makii-Ø
 man sleep.IPFV-NPST
 'The man is sleeping.'
- b. Iina makii-Ø ikwani
 DET sleep.IPFV-NPST man
 'This man is sleeping.'
- c. *Iina ikwani makii-Ø
 DET man sleep.IPFV-NPST
 'This man is sleeping.' (Michael 2004b: 3, (6))

In the theoretical literature on other languages, there are three main competing analyses of split constructions. These are illustrated below in (3) for the example in (2b). The traditional sub-extraction analysis assumes that splits involve direct movement of the left-branch out of the NP (3a) (Ross 1967; Corver 1992; Bošković 2005, 2016). The remnant movement approach, on the other hand, asserts that what undergoes displacement is actually a larger constituent containing a trace of the head noun that was moved out in an earlier step (3b) (Franks & Progovac 1994; Abels 2003, 2012; Bašić 2004, 2009). Finally, distributed deletion analyses assume that NP splits are

¹Another dimension of variation within split constructions is whether the head noun is the extracted phrase or (contained in) the stranded phrase. In Iquito and the examples in (1), the determiner is pronounced in the displaced position and the head noun is stranded. In other languages, however, it is the head noun that moves, stranding a sub-constituent of the noun phrase such as a determiner, classifier or adjective, see e.g. Korean (Ko 2007), German (Fanselow 1988; Ott 2012), Quechua (Lefebvre & Muysken 1988; Muysken 1989), and Yucatec Maya (Skopeteas et al. to appear). This is sometimes referred to as 'split topicalization' (van Hoof 2006). Since Iquito does not have this option, we do not consider it further.

²Iquito is a highly endangered language of the Zaparoan family spoken in the Peruvian Amazon. The data in this paper was collected by the linguists of the Iquito Language Documentation Project (ILDLP), led by Chris Beier and Lev Michael. We draw on both published work (e.g. Beier et al. 2011; Hansen 2011) and unpublished field notes from Lev Michael, in particular Michael (2003, 2004b). We wish to express our thanks to the four Iquito speakers Hermenegildo Díaz Cuyasa, Ligia Inuma Inuma, Jaime Pacaya Inuma and Ema Llona Yareja for their collaboration with the ILDP.

We use the following abbreviations in our glosses: 1=first person, 2=second person, 3=third person, AN=animate, ASP = aspect DET = determiner, DIM = diminutive, DPAST = distant past, EXCL = exclusive, IND = indicative, INCL=inclusive, IPFV = imperfective, LOC = locative adposition, MMTPFV=momentary perfective, NEG = negation, NMLZ = nominalizer, NPST = non-past tense, PFV = general perfective, PL = plural, REL = relative pronoun, REMPFV = remote perfective, REP = reportative, RPST = recent past tense, SG = singular.

the effect of scattered deletion applying to different sub-parts of the NP in its higher and lower occurrences (3c) (Fanselow & Ćavar 2002; Pereltsvaig 2008; Fanselow & Féry 2013; Davis 2020a; Bondarenko & Davis to appear).

- (3) a. *Sub-extraction:*
 Iina₁ makii [NP t₁ ikwani]
 this sleeps man
- b. *Remnant movement:*
 [NP Iina t₁]₂ makii ikwani₁ t₂
 this sleeps man
- c. *Distributed deletion:*
 [NP Iina ikwani] makii [NP iina ikwani]
 this sleeps man

In this paper, we will argue in favor of the distributed deletion approach in (3c) for discontinuous constituents in Iquito. Our main evidence comes from the varying patterns of split behavior that we find with complex possession structures both within NPs and PPs, as well as at the clause-level.

To see this, we will preview our discussion of movement of phrases containing determiners to a clause-internal position between the subject and the verb (this is the so-called ‘irrealis position’ to which we return in section 4). As can be seen in (4b), only the determiner modifying the object undergoes displacement to this position. As the parallel example in (4c) indicates, movement of the entire NP constituent is not possible, therefore reaffirming the obligatoriness of split NP constructions in Iquito that we already saw for (2b).

- (4) a. Nu= simiita-ki-Ø [NP iina simiimi]
 3SG= read-ASP-NPST DET book
 ‘She/he read this book (earlier today).’
- b. Nu= iina simiita-ki-Ø [NP _____ simiimi]
 3SG= DET read-ASP-NPST book
 ‘She/he will read this book.’
- c. *Nu= [NP iina paápaaja] asa-rii-Ø _____
 3SG= DET fish eat-ASP-NPST
 Intended: ‘She/he will eat this fish.’

(Beier et al. 2011: 85, (42, 43))

Importantly, things become more complicated with NPs with internal possession. In (5), we have a complex NP ‘these children of the woman’ where the possessum ‘children’ is associated with the determiner and the possessor is bare. Putting NP-internal word order aside for a moment (see section 2.1), only the determiner moves to pre-verbal position in (5), just as in (4b).

- (5)
- | | | | | | | | |
|--------------|------|-------------|----------------|-----------------------|--------|-------------|---|
| Aámiikáaka | kí= | <u>iipi</u> | miwĩra-kwa-Ø | [_{NP} _____ | mĩsaji | <u>mira</u> |] |
| one.day.away | 1SG= | DET.PL.AN | visit-ASP-NPST | | woman | child.PL | |
- ‘Tomorrow, I will go there to visit these children of the woman.’
- (Hansen 2011: 155, (3.89))

When the determiner is instead associated with the possessor, as in ‘the clothes of those children’, a different pattern emerges. In (6), both the determiner associated with the possessor ‘children’ (indicated by underlining) and the bare possessor are displaced.

- (6)
- | | | | | | | | |
|--------------|------|-------------|---------|---------------|-----------------------|--------------|---|
| Aámiikáaka | kí= | <u>iipi</u> | sinaaki | sikita-rĩ-Ø | [_{NP} _____ | mira-jaarika |] |
| one.day.away | 1SG= | DET.PL.AN | clothes | wash-ASP-NPST | | child.PL-DIM | |
- ‘Tomorrow, I will wash the clothes of these children.’
- (Hansen 2011: 161, (3.102))

It is particularly striking that the moved elements do not plausibly form a constituent. Furthermore, we observe that the appearance of an apparent non-constituent in the moved position is correlated with the semantic association of the determiner involved in that split. We therefore arrive at the following descriptive generalization about split constructions in Iquito (Beier et al. 2011: 87; Hansen 2011: 137–138):

- (7) *Possessum pied-piping generalization (PPG)*
 A possessum P appears together with a determiner D before a movement-triggering head H if D modifies the possessor of P and P moves to Spec-HP.

This generalization is summarized by the abstract pattern in (8) where the possessum is pronounced in a higher position only if the determiner is co-referent with its possessum:

- (8) a. Det_i ... Det_i Possessor Possessum_i
 b. Det_i Possessum ... Det_i Possessum Possessor_i

We will show how this follows naturally under a distributed deletion analysis, but not under competing analyses. Since we assume movement of the entire phrase (plus deletion), ‘pied-piping’ in (7) should be understood in a purely descriptive sense. In our distributed deletion analysis, the derivational history within the phrase targeted for extraction is what determines the amount of material pronounced in the higher copy. In short, the reason why the possessum is pronounced high in a configuration like (8b) is because the determiner undergoes an additional movement step within the noun phrase that is absent in (8a). We will motivate this NP-internal displacement on independent grounds and show how it can provide a unified account of both word order variation within NPs and PPs, as well as of movement to the clause-internal ‘irrealis position’. The analysis of discontinuous constituents we develop will be highly restrictive, constrained by our proposal that Copy Deletion applies cyclically. Furthermore, the choice of which sub-constituent of a moved phrase is deleted is constrained by Cyclic Linearization at the phase-level (Fox & Pesetsky 2005).

In the second part of the paper, we investigate split constructions at the clause-level. First, we

provide a detailed exposition of the clause-level movement construction presented in (4)–(6) above. As noted by Beier et al. (2011), Iquito displays the typologically-interesting strategy of expressing irrealis mood solely through word order, i.e. an obligatory shift from SVX to SXV order. We propose an analysis of irrealis word order that involves movement to an inner specifier of T. We go on to argue that the data with discontinuous NPs in this position supports the characterization of the irrealis position in terms of phrasal movement and, thus, argue against an alternative involving head movement. After this, we turn to the behavior of split subjects such as those in (2). We show that there is a transitivity restriction involving split subjects in Iquito, such that the obligatoriness of split NPs with determiners is lifted if it would result in part of the subject pronounced within a transitive *v*P. We situate these observations in a cross-linguistic context by linking them to the *Subject In-Situ Generalization* (Alexiadou & Anagnostopoulou 2001). We adopt Richards’s (2010) *Distinctness* implementation of this generalization to capture the transitivity restriction that we find in split subject constructions.

The paper is structured as follows: Section 2 presents data about word order within NPs and PPs and establishes the key empirical generalizations that our analysis will derive. Then, we proceed to present our analysis in section 3 by first laying out the theoretical assumptions central to our analysis: distributed deletion, cyclic application of Copy Deletion and Spell-Out (linearization by phase). We then walk through derivations for NP and PP cases to illustrate how we derive the relevant generalizations, including the PPG (7). We also discuss why alternative approaches to splits, i.e. remnant movement and sub-extraction, fail to provide substantial insight into the Iquito patterns. In section 4, we present our analysis of the so-called ‘irrealis position’ and analyze how split NP constructions interact with movement to this position. We show that these examples follow under the analysis we develop for the NP/PP-internal examples. Section 5 moves on to discuss NP splits with subjects, highlighting a transitivity restriction that we argue falls under the well-known *Subject In-Situ Generalization*. Finally, section 6 concludes.

2 Discontinuous constituents in NPs and PPs

In this section, we lay out the descriptive generalizations about word order in noun phrases and adpositional phrases containing demonstrative determiners. While Iquito lacks a definite article, it has a number of demonstrative determiners, as the table from Hansen (2011: 105) in (9) shows.³

(9)

Orientation	sg/general	PL (inanimate)	PL (animate)
Speaker Proximal/Distal	<i>iina</i>	<i>iimi</i>	<i>iipɨ</i>
Addressee Proximal	<i>kiina</i>	<i>kiimi</i>	<i>kiipɨ</i>
Speaker/Addr. Distal	<i>iina tíira</i>	<i>iimi tíira</i>	<i>iipɨ tíira</i>

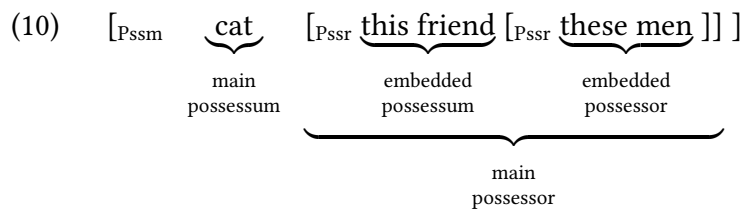
As is clear from the forms in this table, the respective determiners contain the suffixes *-na*, *-mi* and *-pɨ*, marking number and animacy distinctions. These suffixes are also found on adjectives, however for simplicity’s sake, we do not segment these morphemes in our glosses. The determiners that are most relevant for our data are the plural animate demonstrative *iipɨ* and the general

³ For this reason bare nouns can receive both definite and indefinite interpretations. Since Iquito allows for extraction of demonstratives from noun phrases, it qualifies as an ‘NP language’ in terms of Bošković (2008, 2009), lacking a DP projection. This is an assumption we adopt in our analysis (see footnote 5).

determiner *iina*, both of which can have either a proximal or distal meaning, depending on the context.

2.1 Discontinuous noun phrases

In this section, we discuss the different word order possibilities in complex noun phrases. Before presenting the data, we first clarify some of the terminology we will use to talk about possessive structures. In (10), we show the basic semantic subordination relations that hold in possession structures of the kind found in Iquito, e.g. ‘the cat of this friend of these men’. We call the constituent corresponding to ‘this friend of these men’ the *main possessor* and its associated possessum (‘cat’) the *main possessum*. Within the complex possessor, ‘these men’ is the *embedded possessor* to its own possessum ‘this friend’, which we refer to as the *embedded possessum*.



With this terminology in mind, we now turn to possible NP-internal word orders in Iquito. In (11), we see an example with a possessum *kajinani* (‘animal’) and the possessor *m̄isaji* (‘woman’). In (11a), the possessor precedes the possessum, however when the possessor is modified by a determiner as in (11b), the possessor must follow the possessum, with the determiner preceding the possessum.

- (11) a. $[_{NP} \text{m̄isaji kajinani}]$
 woman animal
 ‘the animal of the woman (the woman’s animal)’
- b. $[_{NP} \text{iina kajinani m̄isaji}]$
 DET animal woman
 ‘the animal of this woman (this woman’s animal)’ (Michael 2004b: 6, (15a,b))

In cases with recursive possessors such as (12), we find that the main possessor ‘the friend of the men’ precedes the main possessum *miisi* (‘cat’). The embedded possessor ‘men’ also precedes its associated possessum ‘friend’.

- (12) $[_{NP} \text{ikwani-wiya kujimani miisi}]$
 man-PL friend cat
 ‘the cat of the friend of the men’ (Michael 2003: 9, (36))

When we add a determiner to recursive possessor examples such as (12), we find that word order depends on which noun the determiner is associated with (Michael 2003: 9). In (13), the determiner is associated with the embedded possessum. The determiner *iipi* must appear at the left edge of the noun phrase, where it precedes the main possessum *miisi* (‘cat’). The embedded possessor *m̄isaji* (‘woman’) precedes the embedded possessum *m̄irajaarika* (‘children’).

- (13) [_{NP} iipi miisi miisaji mira-jaarika]
 DET.PL.AN cat woman child.PL-DIM
 ‘the cat of these children of the woman’ (Michael 2003: 9, (39))

If the determiner is associated with the embedded possessor, i.e. ‘man-PL’ in (14), both the determiner *iipi* from the embedded possessor and the embedded possessum *akuniita* (‘friend’) precede the main possessum *sapatu* (‘shoe’).

- (14) [_{NP} iipi akuniita sapatu ikwani-wiya]
 DET.PL.AN friend shoe man-PL
 ‘the shoe of the friend of these men’ (Michael 2003: 9, (40))

Finally, it is possible to modify both the embedded possessum and the embedded possessor with a determiner (15). In this case, only the determiner associated with the embedded possessum *iina* precedes the main possessum *miisi* (‘cat’).

- (15) [_{NP} iina miisi iipi kujimani ikwani-wiya]
 DET cat DET.PL.AN friend man-PL
 ‘the cat of this friend of these men’ (Michael 2003: 9, (37))

The possible NP-internal word orders we have seen above are summarized abstractly in (16). The bracketing here represents the basic semantic subordination relations between the NPs. A full exposition of our syntactic assumptions will be presented in the following section.

(16)	Underlying structure	Surface word order
a.	[_{PSSM} animal [_{PSSR} woman]]	<i>woman animal</i> (11a)
b.	[_{PSSM} animal [_{PSSR} this woman]]	<i>this animal woman</i> (11b)
c.	[_{PSSM} cat [_{PSSR} friend [_{PSSR} men]]	<i>men friend cat</i> (12)
d.	[_{PSSM} shoe [_{PSSR} friend [_{PSSR} these men]]]	<i>these friend shoe men</i> (14)
e.	[_{PSSM} cat [_{PSSR} these children [_{PSSR} woman]]]	<i>these cat woman children</i> (13)
f.	[_{PSSM} cat [_{PSSR} this friend [_{PSSR} these men]]]	<i>this cat these friend men</i> (15)

From this, we arrive at the following descriptive generalizations about NP-internal word order:

- (17) *Descriptive generalizations for NPs:*
- A bare possessor always precedes its possessum (16a, c, e).
 - A possessor modified by a determiner always follows its possessum (16b, d, f).
 - A single determiner in an NP is always realized at the left edge of NP (16b, d–f).
 - If both the embedded possessor and embedded possessum are modified by determiners, then only the determiner associated with the possessum occupies the left edge of NP (16f).
 - The embedded possessum and a determiner precede the main possessum only if the determiner is associated with the embedded possessor (16d) vs. (16e).

The generalization in (17e) will be one of the most relevant for our analysis, as it instantiates the *possessum pied-piping generalization* (7).

Before proceeding, we should point out that we have not presented any examples in which a

determiner modifies the highest possessum. For example, we might expect that we could have a parallel structure to (16b) such as [_{PSSM} this animal [_{PSSR} woman]] for ‘this animal of the woman’. Such examples are not possible, however. Hansen (2011: 127–128) notes that the Iquito consultants only interpret noun phrase strings of the form DET NP NP as the determiner modifying the possessor (18a) rather than the possessum (18b), that is, as involving the structure in (16b).

- (18) [_{NP} *this animal woman*]
 a. ‘the animal of this woman’
 b. *‘this animal of the woman’

This appears to be a performance factor rather than a deep grammatical property. In other words, structures in which the possessum is modified by a determiner are syntactically well-formed, but there is an overwhelming preference to assign the NP-internal string in (18) the interpretation in (18a). We believe that the underlying structure [_{DET_i} PSSM_i [PSSR]] is indeed licit, because the interpretation in (18b) becomes available once this structure is more deeply embedded (leading to a split configuration). This is what we find in (16e) where the embedded possessum (‘children’) is modified by a determiner. This is also true for movement to clause-internal position (see section 4), as we have seen in (5) in the introduction where the highest possessum is modified by a determiner: [_{PSSM} these children [_{PSSR} woman]]. Any potential parsing conflict is avoided, because this phrase is further moved to a higher position within the clause, leading to a split configuration.

2.2 Discontinuous constituents in adpositional phrases

In this section, we will show that there are strikingly similar word order patterns in adpositional phrases. First, consider the fact that adpositions in Iquito typically follow their complement NPs, as illustrated by (19).

- (19) a. [_{PP} *iita jinakuma*]
 house inside
 ‘inside the house’ (Michael 2004b: 5, (14a))
 b. [_{PP} *kúsi umáana=jina*]
 pot big=LOC
 ‘in a big pot’ (Hansen 2011: 119, (3.15))

However, if the complement to the adposition is modified by a determiner, then the noun phrase appears discontinuously. The determiner precedes the adposition while the associated noun phrase follows it (20). This example is comparable to (11b), where the adposition is parallel to the possessum.

- (20) [_{PP} *iina jinakuma iita*]
 DET inside house
 ‘inside this house’ (Michael 2004b: 5, (14b))

As (21) shows, if the complement of the adposition contains a possessor, then both the possessor and the possessum precede the adposition in that order, again this is parallel to NP-internal examples such as (12).

- (21) Ku-asa-ki-Ø [PP *ikwani amiiku aákuji*]
 1SG-eat-PFV-NPST man friend before
 ‘I ate before the friend of the man’ (Michael 2003: 4, (15a))

If we have the same possession structure as in (21), but with a determiner associated with the possessor *ikwani* (‘man’), we find that both the determiner and the possessum *amiiku* (‘friend’) precede the adposition (22). The parallel to an example like (14) and the PPG should be apparent, as we discuss further in section 2.3.

- (22) Ku-asa-ki-Ø [PP *iina* *amiiku aákuji ikwani*]
 1SG-eat-PFV-NPST DET friend before man
 ‘I ate before the friend of this man’ (Michael 2003: 5, (22a))

Furthermore, it is possible for an adposition to take an NP with recursive possessors as its complement. Recall (13) repeated below (23). Here, we saw that the determiner associated with the embedded possessum precedes the main possessum ‘cat’.

- (23) [NP *iipi* *miisi miisaji mira-jaarika*]
 DET.PL.AN cat woman child-DIM
 ‘the cat of these children of the woman’ (Michael 2003: 9, (39))

In (24), a noun phrase structurally similar to (23) (with a determiner modifying the embedded possessum) is the complement to the adposition *jata* (‘with’). Both the determiner associated with the embedded possessum and the main possessum (in this case ‘shoes’) precede the adposition.

- (24) Ku-aamiyaaki-:-Ø [PP *iipi* *sapatu-ka jata miisaji mira*]
 1SG-walk-IPFV-NPST DET.PL.AN shoe-PL with woman child.PL
 ‘I am walking with the shoes of these children of the woman’ (Michael 2003: 15, (53))

We can also take an example where both the embedded possessum and possessor are modified by determiners, i.e. (15) repeated below as (25a), and make it the complement of the adposition *jata* (‘with’). Again, we observe that both the determiner associated with the embedded possessum and the main possessum *miisi* (‘cat’) precede the adposition.

- (25) a. [NP *iina* *miisi iipi* *kujimani ikwani-wiya*]
 DET cat DET.PL.AN friend man-PL
 ‘the cat of this friend of these men’
 b. *Kí=ikwa-:-Ø* [PP *iina* *miisi jata iipi* *kujimani ikwani-wiya*]
 1SG-go-IPFV-NPST DET cat with DET.PL.AN friend man-PL
 ‘I am going with the cat of this friend of these men’ (Michael 2003: 15, (52))

We summarize the PP-internal word order possibilities in the table in (26).

(26)	Underlying structure	Surface word order	
a.	[_{PP} inside [_{NP} house]]	<i>house inside</i>	(19a)
b.	[_{PP} inside [_{NP} this house]]	<i>this inside house</i>	(20)
c.	[_{PP} before [_{NP} friend [_{P_{SSR}} man]]	<i>man friend before</i>	(21)
d.	[_{PP} before [_{NP} friend [_{P_{SSR}} this man]]]	<i>this friend before man</i>	(22)
e.	[_{PP} with [_{NP} shoes [_{P_{SSR}} these children [_{P_{SSR}} woman]]]]	<i>these shoes with woman children</i>	(24)
f.	[_{PP} with [_{NP} cat [_{P_{SSR}} this friend [_{P_{SSR}} these men]]]]	<i>this cat with these friend men</i>	(25b)

It is interesting to note that examples (26a–d) are entirely parallel to (16a–d). Whereas (16) summarizes word order of possessive NPs when embedded under another noun (i.e. the main possessum), in (26), similar phrases are embedded under an adposition instead. Here, the descriptive generalizations are essentially the same if we exchange the term ‘main possessum’ for ‘adposition’. Moreover, the examples in (26d,e) are actually more revealing as they include an extra layer of embedding beyond that seen in (16). That is, the most structurally complex NP-internal examples we have seen in (16), i.e. (16e, f), are embedded as the complement of an adposition in (26e,f).

Unfortunately, we do not have an example parallel to (16e) in which the determiner is associated with the possessum of an NP complement to an adposition (Michael 2003 does not contain an example of this kind). Given the close parallels we otherwise observe between NPs and PPs, we would expect to find the word order in (27), analogous to (16e) where only the determiner is pronounced in the higher position.

(27) [_{PP} before [_{NP} this friend [_{P_{SSR}} man]]] → *this before friend man*
‘before this friend of the man’

Fortunately, we have examples containing PPs with the structure in (27) in which the entire PP constituent moves to a higher position in the clause, as we will show in section 4.3.2. The split configuration we observe there is expected if we assume the structure in (27). Moreover, when an example like (27) is further embedded and moved at the clause-level, it exhibits precisely the same split pattern as when the parallel NP example in (16e) is embedded under an adposition as in (26e). We take this parallelism as further support for the structure of the constructed example in (27).

2.3 Interim summary

In the rest of the paper, we focus on deriving the patterns of NP/PP-internal word order in a principled way. As mentioned above, we argue that the following important generalization emerges from these data:

(28) *Possessum pied-piping generalization (preliminary)*
A possessum P appears together with a determiner D preceding a higher head H if D modifies the possessor of P and P is the complement of H.

This is linked to the generalization we identified in (17e) for the examples repeated below in (29). If the determiner semantically modifies the embedded possessum, then only the determiner may appear before the higher embedding head ‘cat’, the main possessum, in (29a). However, if the determiner modifies the embedded possessor, then both the determiner and the embedded possessum appear before the higher embedding noun (the main possessum ‘shoe’) (29b).

- (29) a. $\left[\text{NP } \overbrace{\text{iipi}}^{\text{DET.PL.AN}} \text{ miisi } \left[\text{NP } \text{ miisaji } \overbrace{\text{mira-jaarika}}^{\text{child.PL-DIM}} \right] \right]$
 DET.PL.AN cat woman child.PL-DIM
 ‘the cat of these children of the woman’
 [NP cat [NP **these** children [NP woman]]]
- b. $\left[\text{NP } \overbrace{\text{iipi}}^{\text{DET.PL.AN}} \text{ akuniita } \text{sapatu} \left[\text{NP } \text{ ikwani-wiya} \right] \right]$
 DET.PL.AN friend shoe man-PL
 ‘the shoe of the friend of these men’
 [NP shoe [NP **friend** [NP **these** men]]]

The bracketed structure indicates what we take to be the general underlying structure for each example. The boldface elements are those which undergo displacement. As is clear from the bracketing in (29b), the moved items do not appear to form a constituent.

The generalization in (28) is also instantiated by the examples in (5) and (6), repeated below. Here, we again observe that apparent non-constituent displacement above a higher embedding head, in this case the verb, tracks the base position of the determiner.⁴ Only if the determiner originates with the possessor, as in (30b), do we find ‘pied-piping’ of the possessum.

- (30) a. $\left[\text{VP } \text{Aámiikáaka } \text{kí= } \overbrace{\text{iipi}}^{\text{DET.PL.AN}} \text{ miwiira-kwa-}\emptyset \left[\text{NP } \text{ miisaji } \overbrace{\text{mira}}^{\text{woman child.PL}} \right] \right]$
 one.day.away 1SG= DET.PL.AN visit-ASP-NPST woman child.PL
 ‘Tomorrow, I will go there to visit these children of the woman.’
 [VP visit [NP **these** children [NP woman]]]
- b. $\left[\text{VP } \text{Aámiikáaka } \text{kí= } \overbrace{\text{iipi}}^{\text{DET.PL.AN}} \text{ sinaaki } \text{sikita-rii-}\emptyset \left[\text{NP } \text{ mira-jaarika} \right] \right]$
 one.day.away 1SG= DET.PL.AN clothes wash-ASP-NPST child.PL-DIM
 ‘Tomorrow, I will wash the clothes of these children.’
 [VP wash [NP **clothes** [NP **these** children]]]

Furthermore, (21), repeated below, shows that the generalization holds within PPs, too. The determiner and the possessum appear preceding the adposition (‘before’) when the complement of the adposition is a possessive phrase where the determiner modifies the possessor as in (31).

- (31) $\left[\text{PP } \text{Ku-asa-ki-}\emptyset \left[\text{PP } \overbrace{\text{iina } \text{amiiku } \text{aákuji}}^{\text{DET friend before}} \left[\text{NP } \text{ ikwani} \right] \right] \right]$
 1SG-eat-PFV-NPST DET friend before man
 ‘I ate before the friend of this man’
 [PP before [NP **friend** [NP **this** man]]]

The generalization in (28) is further exemplified by (32), repeated from (24). Here, the possessum

⁴While (28) works as a preliminary descriptive formulation, it will need to be revised, as we will argue in section 4 that the verb is actually in T and therefore NP is not its complement. Ultimately, it will be important that H is a head triggering movement of the NP containing a determiner, rather than H’s structural relation to the noun phrase.

‘shoes’ is the complement to an adposition. Furthermore, the determiner *iipi* actually modifies the entire NP possessor of ‘shoes’, namely ‘children of the woman’, as will become clearer in our analysis in section 3. As we expect, both the determiner and possessum are realized preceding the adposition.

- (32)
- | | | | | | | | | |
|--------------------|-----------------|-------------|----------------|-----------------|-------|---------|-------------|----|
| Ku-aamiyaaki-ɪ-∅ | [_{PP} | <u>iipi</u> | sapatu-ka jata | [_{NP} | _____ | miɬsaji | <u>mira</u> |]] |
| 1SG-walk-IPFV-NPST | | DET.PL.AN | shoe-PL with | | | woman | child.PL | |
- ‘I am walking with the shoes of these children of the woman’
- [_{PP} with [_{NP} **shoes** [_{NP} **these** children [_{NP} woman]]]]

These examples pose the two main challenges for a successful analysis. First, one must account for the displacement of an apparent non-constituent. Second, the generalization in (28) ties this apparent non-constituency to a particular structural configuration in the base that correlates with the interpretation of the determiner. We are therefore seeking an explanation for why the base position of the determiner affects whether or not the possessum undergoes displacement with it.

In the following section, we develop an analysis in which the various embedding heads (nouns, verbs, adpositions) all trigger obligatory movement of noun phrases containing determiners, therefore leading to a split construction. In our approach, in cases where the determiner originates lower (with the possessor), each additional cycle of movement within the noun phrase leads to the pronunciation of more material in the higher copy when the entire noun phrase moves. This is the basic insight behind our derivation of the effects of the PPG.

3 Analysis

In this section, we focus on deriving the empirical generalizations about NP/PP-internal word order that were identified in the preceding section. First, we specify the central theoretical assumptions for our analysis in section 3.1, in particular about noun-phrase internal movement (3.1.1), distributed deletion (3.1.2) and Cyclic Linearization (3.1.3). Subsequently, we present analyses of the discontinuous patterns in noun phrases in section 3.2 and adpositional phrases in section 3.3.

3.1 Theoretical assumptions

3.1.1 The X2 requirement

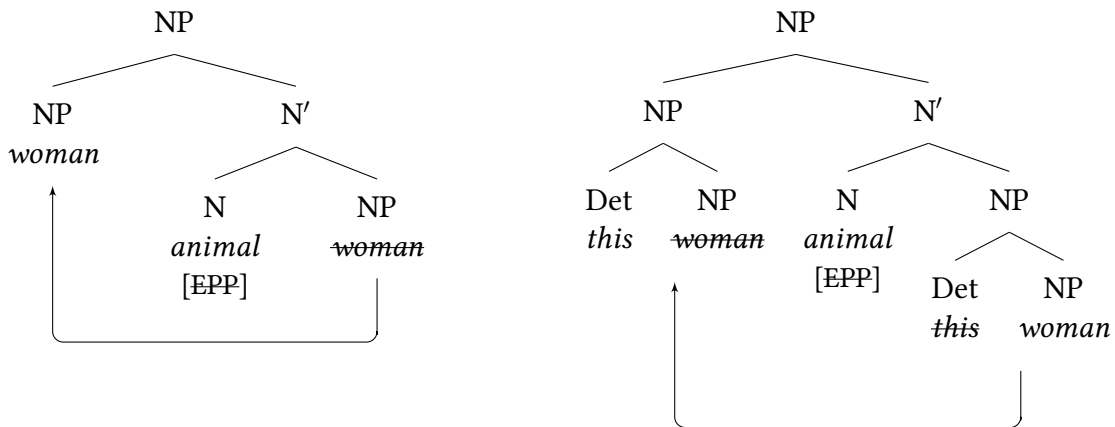
First, we will lay out our assumptions the internal syntax of NPs and PPs in Iquito. Recall the descriptive generalizations in (17a,b), repeated below.

- (33) a. A bare possessor always precedes its possessum.
 b. A possessor modified by a determiner always follows its possessum.

We argue that these two generalizations are related in that they both ensure that the possessum is always in ‘second position’ within the noun phrase, either preceded by a bare possessor or the determiner associated with the possessor. Iquito therefore seems to have a ‘second position’

requirement for noun phrases, what we might call an ‘N2 requirement’, comparable to the well-known V2 requirement in several Germanic languages (den Besten 1983). This N2-requirement follows from the assumption that the head of a noun phrase bears an [EPP] feature requiring that its complement move to its specifier. Furthermore, we assume that possessors are always base-generated as the complement of the possessum noun, as shown in the trees in (34). In order to check the [EPP] feature, the possessor moves to the specifier of N.⁵ With bare possessors, this leads to the observed word order in (34a), whereas a phrase containing a determiner (34b) will necessarily result in a split construction due to the obligatory discontinuous realization of a moved NP containing a determiner (something we return to in more detail below).

- (34) a. *m̥ɨsaji kajinani*
 woman animal
 ‘the woman’s animal’
- b. *iina kajinani m̥ɨsaji*
 DET animal woman
 ‘this woman’s animal’

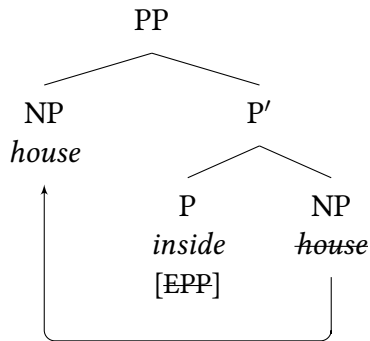


Parallel data is found within PPs. A bare NP complement always precedes the adposition (26a), whereas an NP modified by a determiner always follows the adposition. This suggests the same kind of generalization as above, namely an ‘adposition second’ or ‘P2 requirement’. We assume that PPs in Iquito are underlyingly head-initial, an assumption that is line with the general head-initial character of the language (Michael 2004b). Analogous to the NPs discussed above, we assume that every P head in Iquito bears an [EPP] feature that triggers movement of its complement to its specifier. This derives the correct word order for examples (35a) and (35b).

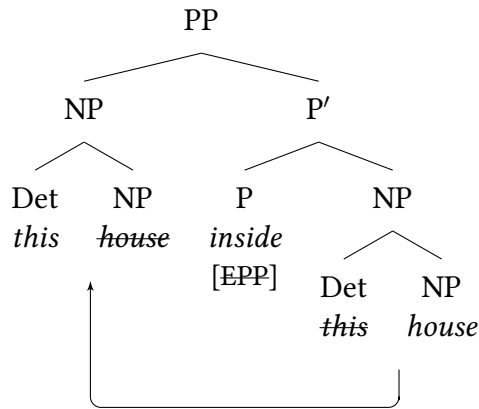
⁵ In our trees, we make only very basic assumptions about the internal structure of the noun phrase. We treat determiners as being of category Det and adjoined to the noun phrase that they modify. The main reason for this is a practical one: Since the structures we discuss will get rather complex, these minimal representations are intended to increase readability. As far as we can tell, nothing substantial in our analysis changes under a more articulated theory of the noun phrase, e.g. including *nP* and other functional projections. However, if we were to take determiners to be heads of category D and thus the head of the traditional noun phrase, then certain additional assumptions would have to be made, i.e. both DP and NP would have to count as phases, for example. However, Iquito seems to fall on the NP side of Bošković’s (2008) NP/DP-Parameter, see footnote 3.

Furthermore, given the structures we adopt here, movement to Spec-NP violates Comp-to-Spec Anti-Locality (see e.g. Abels 2003). This would not be the case, however, if the NP contained a more richly-articulated structure involving a *nP* projection, for example. Nevertheless, we stick to the more conservative representations used here for the aforementioned reasons.

(35) a. *iita jinakuma*
 house inside
 ‘inside the house’



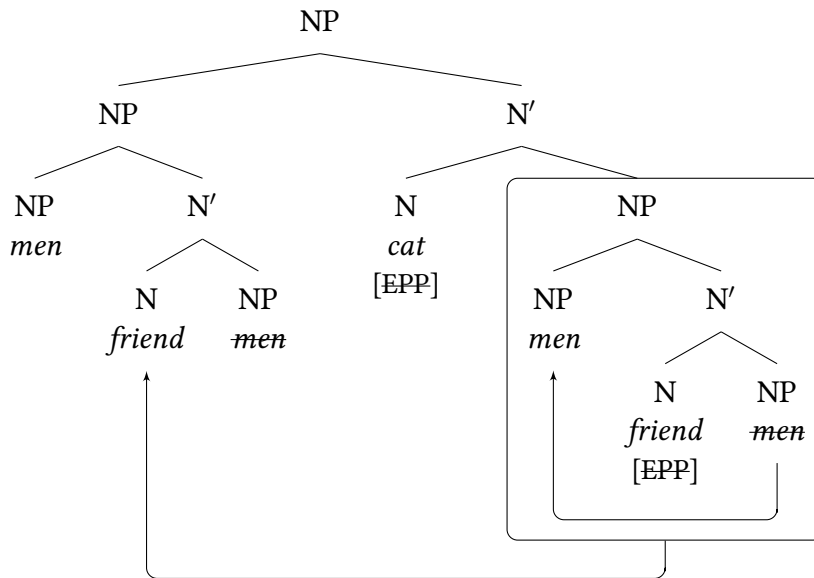
b. *iina jinakuma iita*
 DET inside house
 ‘inside this house’



Assuming a syntactic ‘second position’ requirement for NPs also accounts for the word order we find with complex possessors. Taking an example such as (12), repeated as (36), the complex possessor phrase ‘friend of the men’ will be built first, involving [EPP]-driven movement of the embedded possessor ‘men’ to the specifier of its possessum. When the main possessum ‘cat’ is merged with the complex possessor, the entire complex possessor moves to prenominal position as shown in the tree below.

(36) *ikwani-wiya kujimani miisi*
 man-PL friend cat
 ‘the cat of the friend of the men’ (the men’s friend’s cat)

(Michael 2003: 9, (36))



The same derivation applies to the parallel PP examples like (21) if we replace the highest N head with a P head that also bears an [EPP] feature.

Before moving on, it is worth noting that the alternative assumption that possessors are arguments of some higher functional head (e.g. PossP) would not capture the relatedness of these generalizations. Consider (37) as potential alternative base structures for the examples in (34). Deriving the desired surface word order for (37b) (i.e. *this animal woman*) turns out to be rather difficult. While the base-generated order in (37a) gives us the correct surface structure without further ado, (37b) would have to involve multiple movements both of the possessor and the possessum to derive the string *this animal woman*.

- (37) a. [PossP [NP woman] [Poss' Poss [NP animal]]]
 b. [PossP [NP this woman] [Poss' Poss [NP animal]]]

As such, the two surface word orders for (37) would have to be derived by radically different means. In contrast, under the analysis we propose, they involve the same kind of movement to prenominal position with the independently-motivated observation that movement of an NP containing a determiner always leads to a split construction.⁶ Furthermore, the fact that we find parallel word order inside PPs does not have to be treated as coincidental, unlike on this alternative analysis. Finally, we will show that the assumption that the head of each PP or NP triggers roll-up movement of its complement to its specifier will be a crucial part of capturing the PPG when coupled with additional assumptions about how split constructions are derived, namely by distributed deletion.

3.1.2 Cyclic copy deletion

The second important component of our analysis is the assumption that distributed deletion is responsible for deriving split constructions (we defer the comparison with alternative approaches to section 3.4). As mentioned in the introduction, distributed deletion approaches assume that split constructions involve movement of an entire phrasal constituent with deletion applying in a scattered fashion to certain sub-constituents in both the higher and lower occurrences (see e.g. Fanselow & Ćavar 2002; Pereltsvaig 2008; Fanselow & Féry 2013; Davis 2020a; Bondarenko & Davis to appear). On this analysis and in light of the assumptions in the previous section, an example such as (34b) would be analyzed as in (38).

⁶Further evidence for a second-position requirement in noun phrases comes from nominalizations. Non-finite subordinate clauses in Iquito are expressed via event nominalization of the verb (Christine Beier, p.c.). The verbal suffix *-ni* is sometimes glossed as an infinitive marker, but more recent work treats it as a nominalizer (Michael et al. 2019). In such clauses, we find exceptional OV order with a bare NP object (ia) and a split construction when the object has a determiner (ib).

- (i) a. Aámiikáaka ku=atitii-yaa-kura [nasi kamaraa-ni]
 one.day.away 1SG=begin-IPFV-RPST field clear-NMLZ
 'Yesterday I started to clear the field.'
 b. Aámiikáaka ku=atitii-yaa-kura [iina kamaraa-ni nasi]
 one.day.away 1SG=begin-IPFV-RPST DET clear-NMLZ field
 'Yesterday I started to clear this field.' (Michael 2004b: 8-9, (23a-b))

The analysis presented above can be straightforwardly extended to such cases, as illustrated for (ib) below:

- (ii) [NP [NP iina nasi] [N' [N [V kamaraa] -ni<sub>[EPP]]] [NP iina nasi]]]
 DET clear -NMLZ field</sub>

The *Copy Deletion* algorithm in (39) says nothing about when the P-mark is assigned. We assume that this is an idiosyncratic property of a given language, given the apparent cross-linguistic heterogeneity of split constructions. In some languages P-marking might be optional, or linked to information-structural factors (e.g. Fanselow & Ćavar 2001). Conversely, in Iquito, movement of any phrase containing a determiner necessarily results in a split construction (but see section 5 for an exception). We take this language-specific property of Iquito to be encoded in the grammar by the statement in (42).

(42) *Split determiner requirement (Iquito-specific)*

In a moved phrase α dominating a determiner, a P-mark must be assigned to a sub-constituent of α .

Due to this requirement, a step of movement of a phrase containing a determiner will always result in a P-mark being assigned. Correspondingly, a crucial part of our analysis will be that P-mark assignment can apply multiple times to the same phrase. As such, it is also important to highlight our assumption that the *Copy Deletion* algorithm in (39) applies cyclically, that is, after each step of movement. For this reason, the definition considers only two members of a movement chain at a time, a higher instance α and a lower instance β . The algorithm re-applies after each cycle of movement, which is in line with our final assumption, namely about the nature of cyclic Spell-Out.

3.1.3 Cyclic Linearization

The final component of the analysis is designed to add restrictiveness to our theory of distributed deletion. Note that the *split determiner requirement* in (42) does not specify which sub-constituent a P-mark should be assigned to. This will often be the determiner, but not always. We argue that it is not necessary to stipulate this detail, as it follows naturally from adopting the well-established concept of *Cyclic Linearization* in (43).

(43) *Cyclic Linearization*

Upon completion of a phase ZP, linearize all terminal nodes dominated by ZP.

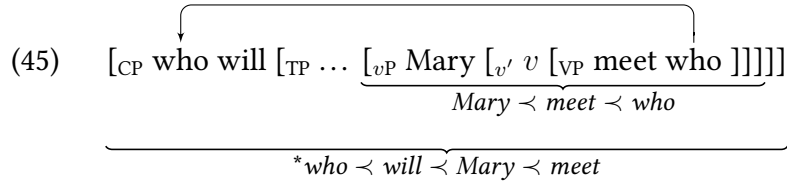
At its core, Cyclic Linearization approaches assume that Spell-Out takes place upon completion of each phase (see e.g. Fox & Pesetsky 2005; Ko 2007; Sabbagh 2007; Drummond et al. 2010; Jenks 2011; Erlewine 2017; Simpson & Park 2019; Davis 2020a,b). Once a phase is complete, linearization statements are generated for all terminal nodes in that phase. The syntactic derivation proceeds, however the output of subsequent operations may not yield contradictory linearization statements, a property that Fox & Pesetsky (2005) dub *Order Preservation* (44).

(44) *Order Preservation* (Fox & Pesetsky 2005: 6)

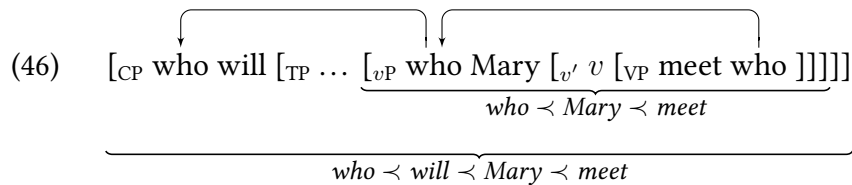
Information about linearization, once established at the end of a given Spell-out domain, is never deleted in the course of a derivation.

Fox & Pesetsky (2005) then demonstrate how this explains, among other things, why movement from a phase must be successive-cyclic. Let us assume that *vP* and *CP* are the relevant phases for now, Fox & Pesetsky propose that the entire Spell-Out domain (including the traditional ‘edge’) is part of the relevant domain for linearization. In a standard *wh*-movement example such as *Who will*

Mary meet?, linearization statements are generated at the *vP*-level. If the *wh*-object does not move to the edge of *vP*, as in (45), then a linearization conflict will arise at the *CP*-level. Linearization of the *vP* generates $\{Mary, meet\} \prec who$, while the *CP*-level generates the contradictory ordering statement $who \prec \{Mary, meet\}$.



This problem is avoided if the moving phrase makes an intermediate stop at the edge of the phase, as can be seen in (46). Crucially, this approach does not require recourse to any of the traditional (and indeed sometimes problematic) notions such as edge features (Müller 2011) or the *Phase Impenetrability Condition* (Chomsky 2000, 2001; Richards 2011).



Cyclic Linearization also extends naturally to split constructions, as shown by Ko (2007), Podobryaev (2009), Jenks (2011) and Davis (2020a). In particular, Davis (2020a) identifies that it captures the striking cross-linguistic generalization that stranding at intermediate positions appears to only be possible if the leftmost element of an XP is extracted, e.g. there is intermediate postposition stranding (e.g. du Plessis 1977; Barbiers 2002; Koopman 2010), but no intermediate preposition stranding (Postal 1972). Assuming that linearization of the internal constituents of a phrase is fixed at some earlier point, then sub-extraction will be limited to the leftmost sub-constituent in that phrase. We will show that a similar ‘leftmost’ generalization holds for pronunciation in split constituents in Iquito.

3.2 Deriving NP-internal splits

We can now show how these assumptions work together to derive the full range of NP splits in Iquito. First, we will consider a simple NP-internal split with a determiner modifying a possessor. Recall example (11b) repeated below as (47). After the possessor has been merged, the NP phase is spelled-out and the linearization statement $this \prec woman$ is generated. The derivation proceeds with the possessor moving to Spec-NP to check to the [EPP] feature on the possessum ‘animal’.

the moved phrase due to the requirement that split constructions conform to previously generated ordering statements. An important exception to this arises when a phrase already contains a P-marked constituent. Given the way (42) is defined, P-mark assignment must apply with every movement cycle. By assumption, a node is either P-marked or not, making multiple P-mark assignment to the same node impossible. For this reason, additional movement within a given phrase can potentially result in multiple P-marks in a given movement copy, and therefore pronunciation of multiple elements in the higher copy. This is the core insight we use to derive the *possessum pied-piping generalization* (28), as we illustrate in what follows.

To see this, consider examples in which either the embedded possessor or embedded possessum is modified by a determiner. First, we will discuss the example in (49) where the embedded possessum is modified by the determiner *iipi*.

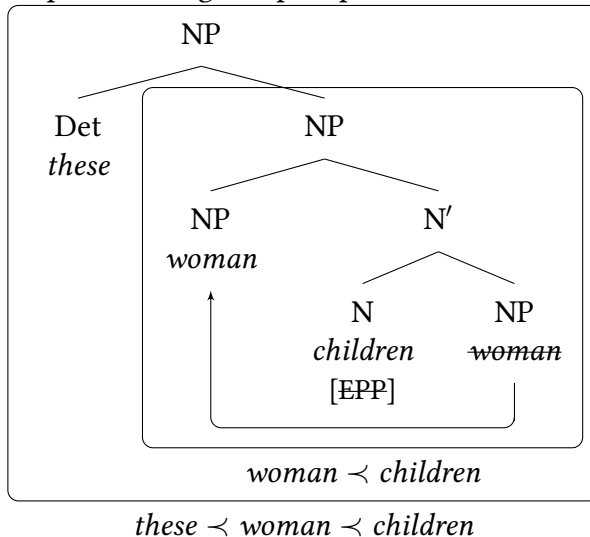
- (49) [NP iipi miisi mihsaji mira-jaarika]
 DET.PL.AN cat woman child-DIM
 ‘the cat of these children of the woman’ (Michael 2003: 9, (39))

We assume the following basic mapping from underlying constituency to surface word order:

- (50) [cat [these children [woman]]] → *these cat woman children*

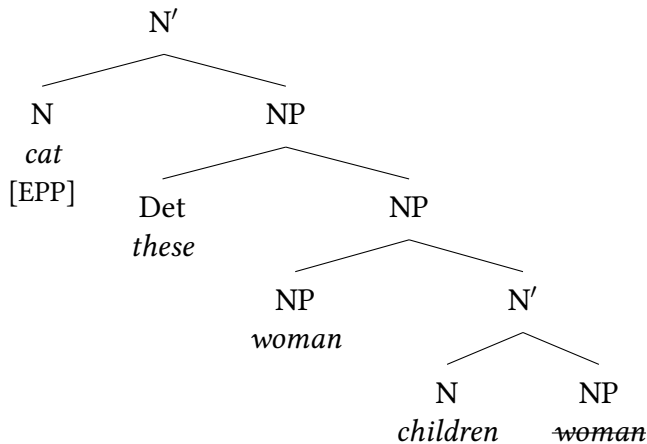
In the first step (51), the complex possessor corresponding to ‘these children of the woman’ is built. The possessor *woman* moves the edge of the possessum due to the second-position requirement of the possessum within that NP as expressed by its [EPP] feature. Subsequently, the determiner adjoins to the entire possessum NP. At each NP phase, the relevant linearization statements are generated.

- (51) Step 1: Building complex possessor



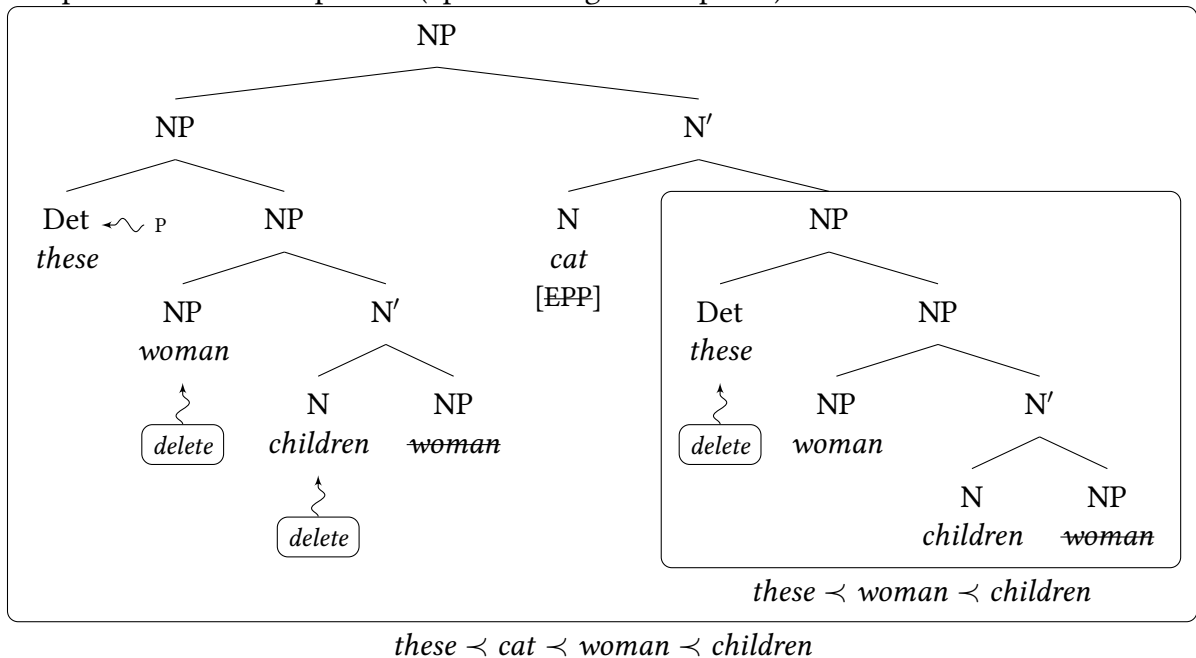
In the next step, this phrase is merged as the possessor of the noun *cat* (52). All previous P-marks and deletion specifications are retained.

(52) Step 2: Embedding complex possessor



Since each noun phrase is a second-position domain, *cat* also bears an [EPP] feature that will trigger movement of the entire complex possessor to its specifier, as shown in (53). At this point, we have a moved phrase containing a determiner, so the *split determiner requirement* in (42) becomes relevant and requires assignment of a P-mark to a sub-constituent in the higher copy. In (53), the P-mark is (correctly) assigned to the leftmost sub-constituent, namely the determiner *these*. Now the *Copy Deletion* algorithm (39) applies. As a result of this P-assignment, the lower instance of the determiner is deleted by (39a-i) and all other previously undeleted, non-P-marked constituents in the higher copy are deleted by (39a-ii). Finally, the entire NP phase is linearized and no contradictory ordering statements are generated.

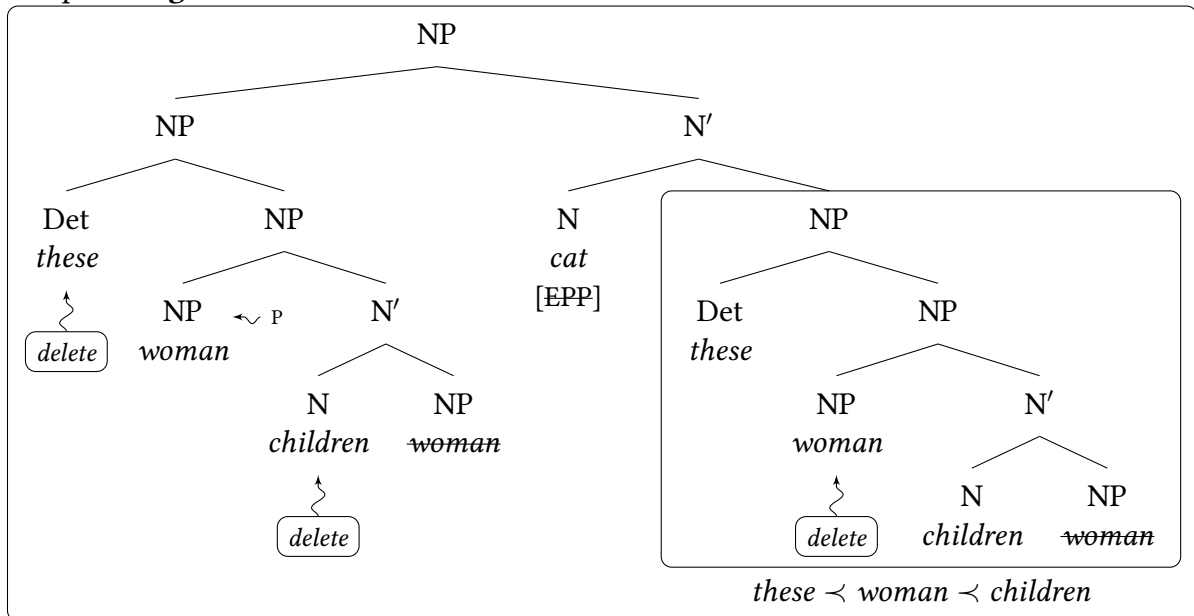
(53) Step 3: Movement to Spec-NP (Spell-Out higher NP phase)



Recall that the *split determiner requirement* (42) does not specify which sub-constituent should receive a P-mark. Instead, this is ensured by Cyclic Linearization. If we were to assign the P-mark

to a non-leftmost constituent, e.g. *woman* in (54), then this will necessarily result in a linearization conflict, i.e. *woman* \prec *these* and *these* \prec *woman*.

(54) Step 3': **Ungrammatical** alternative



**woman* \prec *cat* \prec *these* \prec *children*

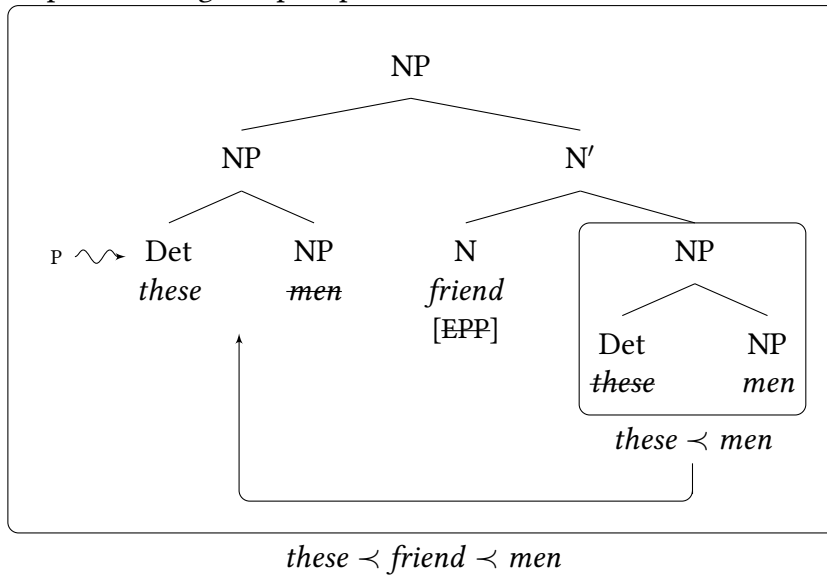
Now, let us turn to an example in which the embedded possessor is modified by a determiner (55). Recall that this example instantiates what we called the *possessor pied-piping generalization*. Given our assumptions about the underlying structure (56), we find that an apparent non-constituent *these friend* precedes the highest N in the noun phrase.

(55) [_{NP} iipi akuniita sapatu ikwani-wiya]
 DET.PL.AN friend shoe man-PL
 ‘the shoe of the friend of these men’ (Michael 2003: 9, (39))

(56) [shoe [friend [these men]]] → *these friend shoe men*

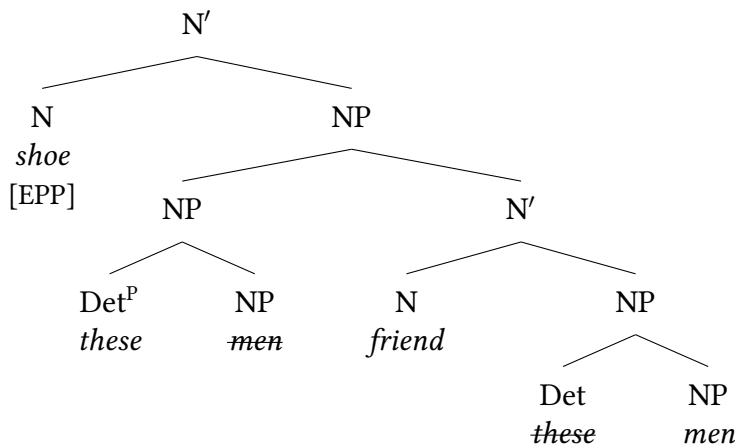
In the first step, the possessor ‘friend of these men’ is merged. The [EPP] feature on the embedded possessum *friend* triggers movement of the possessor to its specifier. Since the possessor contains a determiner, the *split determiner requirement* ensures P-mark assignment takes place. As we have seen, the requirement for Order Preservation inherent to Cyclic Linearization entails that only the determiner can receive the P-mark.

(57) Step 1: Building complex possessor



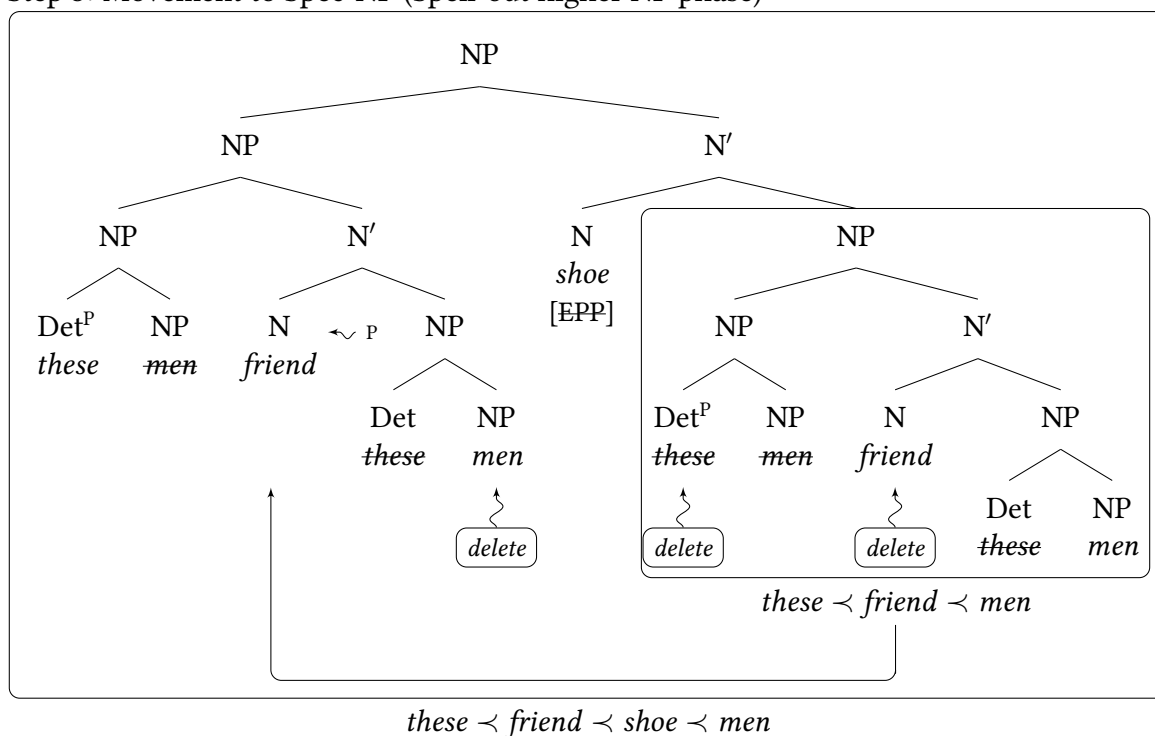
This phrase is then merged as the complement of the main possessum *shoe* (58).

(58) Step 2: Embedding complex possessor



The [EPP] feature on *shoe* triggers movement of the complement to Spec-NP. As the moved phrase contains a determiner, the *split determiner requirement* means that a P-mark must be assigned to the higher copy of the moved phrase. The crucial difference to the previous derivation is that, because there was a previous NP split within the complex possessor, the leftmost determiner in the higher copy already bears a P-mark. Since multiple P-mark assignment to a single element is not possible, P is assigned to the embedded possessum in the higher copy, namely *friend*. This is the only option that will lead to a result compliant with previously generated ordering statements.

(59) Step 3: Movement to Spec-NP (Spell-out higher NP phase)



Subsequently, *Copy Deletion* applies and clause (39a-i) ensures that all terminals in the lower copy corresponding to the P-marked constituents in the higher copy are deleted. Thus, the lower instances of *these* and *friend* are deleted.⁷ The second clause in (39a-ii) requires that all non-P-marked occurrences in the higher copy be deleted, leading to deletion of *men* in (59). This illustrates how the central difference in word order between noun phrases with a determiner modifying the embedded possessum vs. possessor are derived. There is ‘pied-piping’ of the possessum when the determiner is base-generated with the possessor, because that the possessor moves (leading to P-marking) within the complex possessor, due to the second position requirement within NPs. Since this P-mark diacritic is retained at later stages of the derivation, the subsequent P-mark is applied to the leftmost non-P-marked and undeleted sub-constituent of the moved phrase, namely the possessum. In cases where the possessum is modified by a determiner (53), the determiner is base-generated at the edge of the complex possessor without undergoing any movement and therefore not receiving a P-mark at that early stage of the derivation.

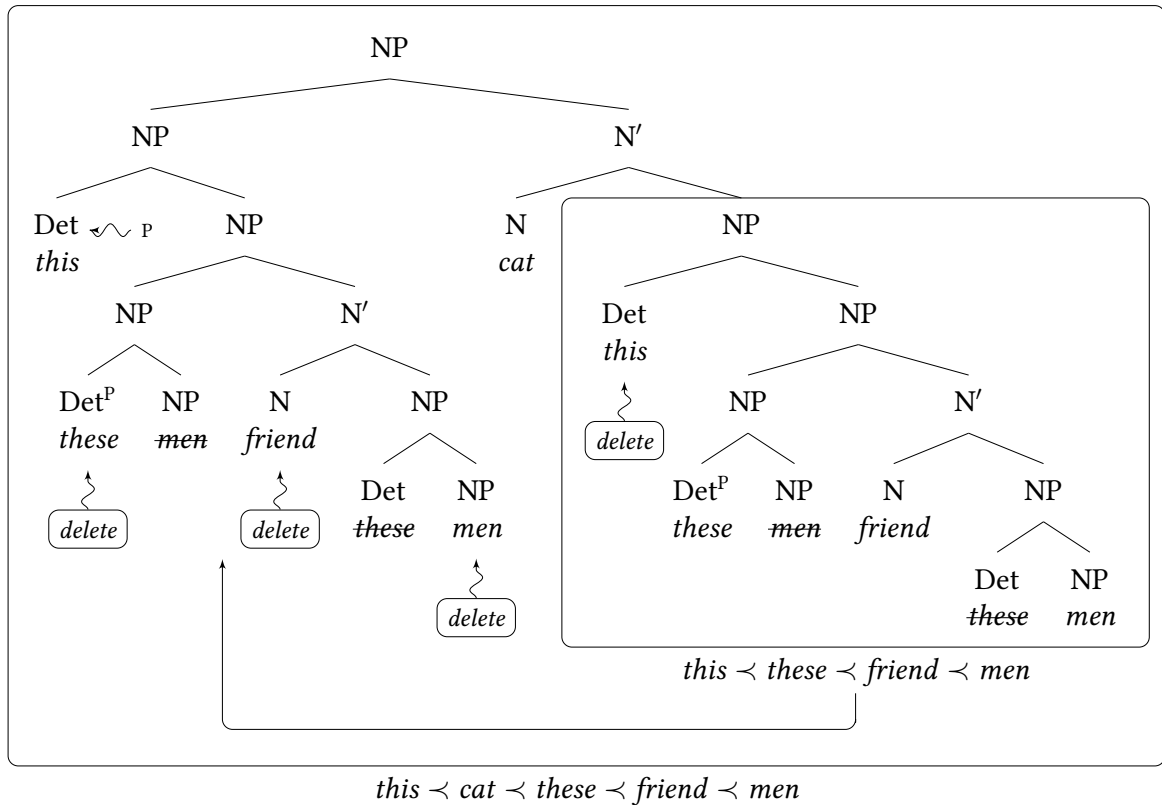
The final case we will consider in this section involves the example in (60) where both the embedded possessor and the embedded possessum are modified by determiners.

- (60) iina miisi iipi kujimani ikwani-wiya
 DET cat DET.PLAN friend man-PL
 ‘the cat of this friend of these men’ (Michael 2003: 9, (37))

This derivation combines elements of both of the previous examples we considered. When the

⁷It is important to note that an occurrence of a P-marked element can be deleted. The ‘P-mark’, despite being intended as a mnemonic for Pronounce, is not a direct instruction for pronunciation to PF. Instead, this diacritic is an instruction for how the *Copy Deletion* algorithm should apply in each case.

(62)



It is here that we encounter a problem. Given the *Copy Deletion* algorithm in (39), we would expect both of the determiners to be pronounced in the higher copy. The determiner *these* from the embedded possessor bears a P-mark from its previous split and a new mark is assigned to the determiner *this* in the higher copy. This would result in pronunciation of both of the determiners in the higher copy, and the incorrect surface word order **this these cat friend men*.

In order to account for such cases, we must resort to a stipulation that the P-mark on the determiner *these* in (62) is deleted. We suggest that this could be due to a general constraint against adjacent overt determiners (63). Determiners never surface adjacent to other determiners in Iquito and indeed this is something that has been shown to be avoided in other languages, e.g. Akan (Saah 1994) and Amharic (Kramer 2010).⁸

(63) A syntactic representation may not contain adjacent P-marked determiners.

The result of (63) is that one of the P-marks in the higher copy must be deleted. We do not need to stipulate which one, however, since the previously established linearization statement *this < these* will ensure that only the P-mark on *these* can be deleted (deleting *this* would lead to a contradictory linearization specification). With that P-mark deleted, only the determiner *this* is pronounced in the higher copy, yielding the desired linearization.

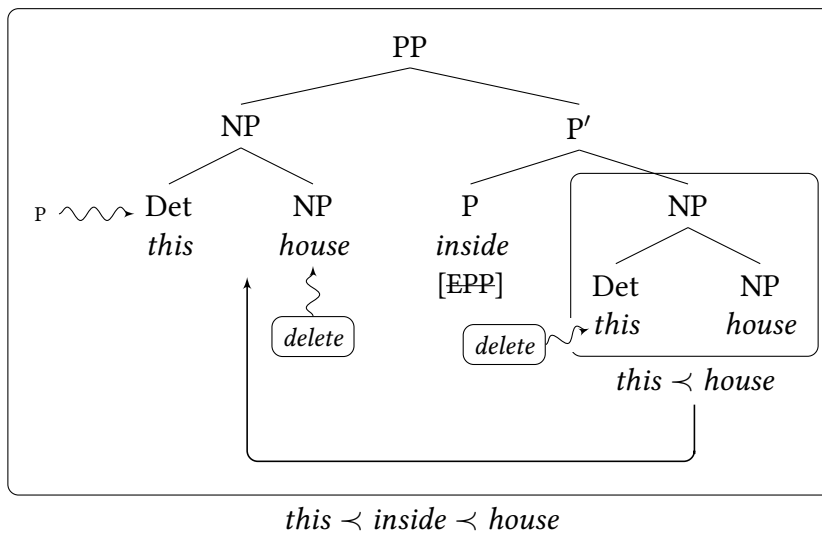
⁸An alternative possibility is that the constraint violated here involves a P-marked determiner c-commanding another P-marked determiner. This structural configuration (a determiner locally c-commanding another determiner) has been independently argued to lead to ungrammaticality with Hungarian possessors (den Dikken & Dékány 2018: 14) and the construct state in Hebrew and other languages (Richards 2010: 70–74).

3.3 Deriving NP splits in PPs

In this section, we turn to deriving PP-internal word order with determiners. Since some of the derivations here are, for the most part, parallel to those described above, we do not present them in full detail. Recall the example (20), repeated below, where the complement to an adposition contains a determiner. The derivation for this example is parallel to (47) and shown in (64). The NP complement to the adposition *inside* undergoes movement to Spec-PP, deriving its discontinuous realization (64).

- (64) [PP iina jinakuma iita]
 DET inside house
 ‘inside this house’

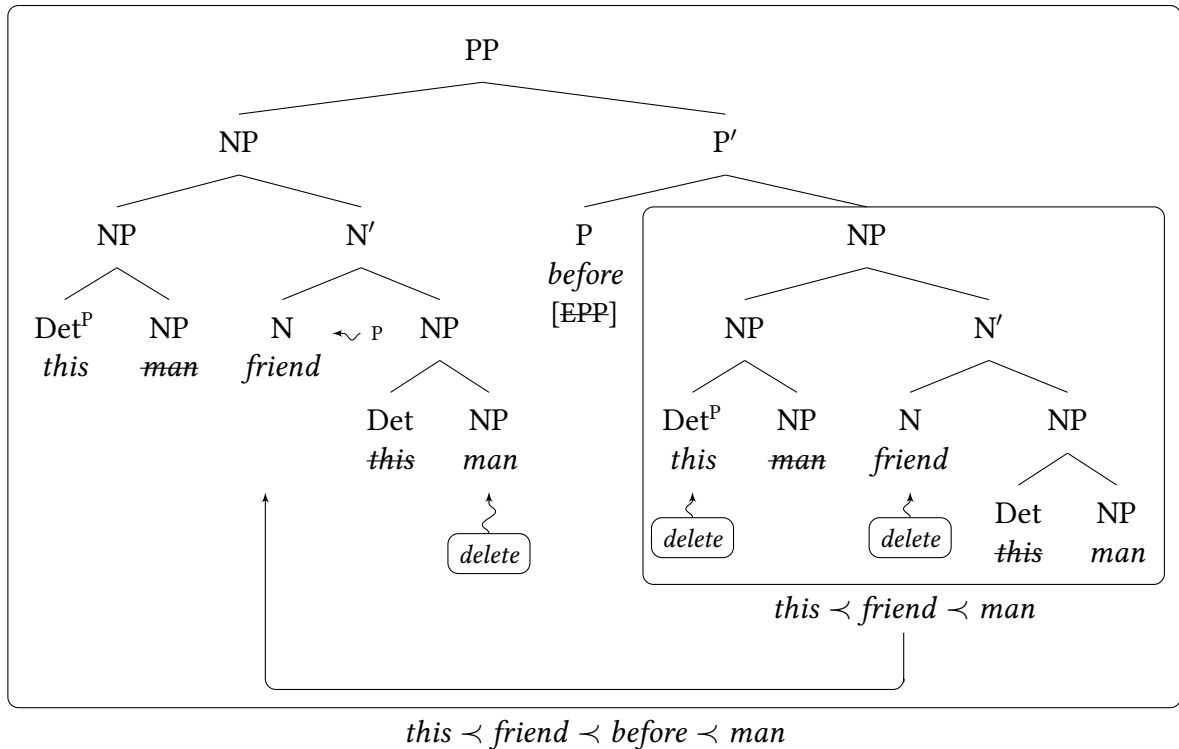
(Michael 2004b: 5, (14b))



Furthermore, the example in (65) shows another case of *possessum pied-piping generalization*. Since the determiner in (65) originates with the possessor, its movement to the edge of the NP triggers P-marking and an intermediate split configuration. This P-mark carries over to the later cycle when the entire NP moves to Spec-PP. Analogous to the example in (59), the possessum therefore receives the additional P-mark in this step, which leads to pronunciation of an apparent non-constituent preceding the adposition.

- (65) Ku-asa-ki-Ø [PP iina amiiku aákuji ikwani]
 1SG-eat-PFV-NPST DET friend before man
 ‘I ate before the friend of this man’

(Michael 2003: 5, (22a))



Finally, we consider the most structurally-complex example we have seen so far, namely (25b) repeated below.

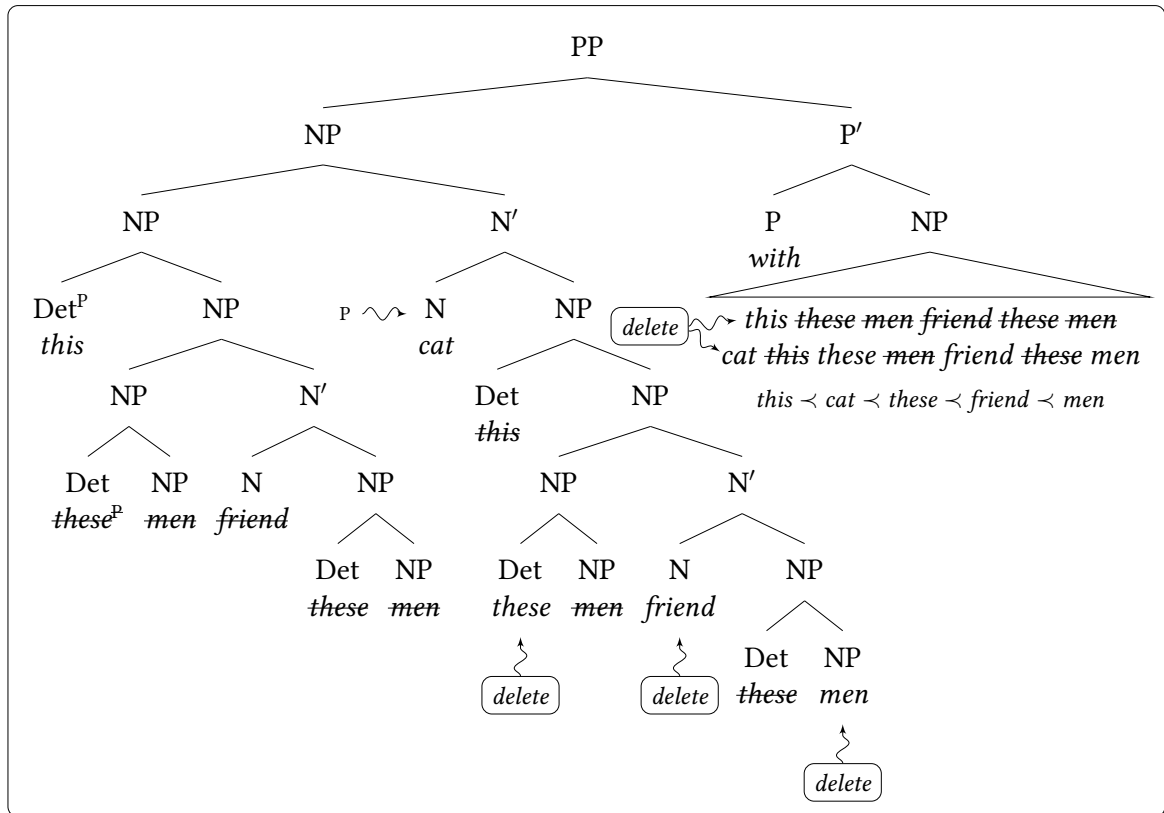
- (66) Kí=ikwa-ɪ-∅ [PP iina miisi jata iipi kujimani ikwani-wiya]
 1SG=go-IPFV-NPST DET cat with DET.PL.AN friend man-PL
 'I am going with the cat of this friend of these men'

(Michael 2003: 9, (37))

Here, an NP with both its embedded possessum and possessor modified by determiners is merged as the complement of the adposition *jata* ('with'). The surface order we derive involves pronunciation of the determiner associated with the entire complex possessor and the main possessum *cat* preceding the adposition (example (24) is entirely parallel however it lacks the second determiner on the embedded possessor).

In order to see how this example is derived, recall that we have already seen how the internal structure of the complement NP is derived in (62). This entire NP, complete with its P-marks and deletion specifications, is merged as the complement to the adposition *with*. The NP must move to Spec-PP to check the [EPP] feature on P. After it does so, we have the structure in (67). In the higher copy in Spec-PP, P-marking must apply. The determiner at left the edge already bears a P-mark from a previous cycle of *Copy Deletion* within the NP. As we have seen, Cyclic Linearization means that a P-mark must be assigned to the leftmost unmarked/undeleted sub-constituent in a phrase. In (67), this is the main possessum *cat*. Consequently, the corresponding occurrences of the two P-marked elements in the higher copy (*this* and *cat*) are deleted in the lower copy and all non-P-marked elements in the higher copy are deleted. This derives the desired word order.

(67)



This example also conforms to the *possessum pied-piping generalization*. The definition of the PPG in (28) relied on the notion of a head selecting the possessum NP as its complement. We can now replace this with ‘movement-triggering head’ in the revised definition in (68) (this will also hold for clause-internal movement cases in section 4).

(68) *Possessum pied-piping generalization (final)*

A possessum P appears together with a determiner D preceding a movement-triggering head H if D modifies the possessor of P and P moves to Spec-HP.

All of the cases conforming to the PPG have in common that they involve an additional cycle of movement within the phrase that moves to Spec-HP. For the NP-internal examples, this was movement of the possessor to the edge of the possessum NP, e.g. in (58). In (67), this is also the case with the complex possessor ‘this friend of these men’ moving to the specifier of the main possessum ‘cat’. This additional cycle of movement results in P-mark assignment to the leftmost sub-constituent (invariably the determiner), meaning that additional movement of the phrase containing the determiner will lead to P-mark assignment to a different element in that phrase. In other words, the PPG holds for moved phrases that already contained a P-mark prior to movement. It is therefore possible to have the more technical alternation definition of the PPG in (69) that makes explicit reference to P-marking.

(69) *Possessum pied-piping generalization (alternative formulation)*

A possessum appears together with a determiner before a movement-triggering head X iff that determiner was P-marked at a previous step in the derivation.

This analysis predicts that adding another cycle of movement (and therefore *Copy Deletion*) to the relevant PPG examples will result in even more material pronounced in the higher copy, e.g. a third element P-marked element in the higher copy. This prediction appears to be borne out, as we will show for clause-level movement to the ‘irrealis position’ in section 4.

3.4 Against alternative analyses


Before moving on, we will address the question of possible alternative analyses. As mentioned in the introduction, the two other competing analyses of split constructions are sub-extraction and remnant movement. We briefly discuss each and mention why they do not capture the Iquito data in a satisfactory or explanatory way. In particular, we will focus on whether or not these alternative approaches can derive the PPG.

3.4.1 Sub-extraction


Recall the basic mappings from underlying structure to surface order for the examples that are crucial for the PPG:

- (70) a. [cat [these children [woman]]] → *these cat woman children*
b. [shoe [friend [these men]]] → *these friend shoe men*

In the sub-extraction approach, we can assume that splits arise from movement of just the determiner to Spec-NP. As (71) shows, (70a) is relatively straightforward to derive by sub-extraction, with movement of the determiner to the specifier of the possessum (movement of possessor is not shown).

- (71) [NP these [N' cat [NP ~~these~~ children [P_{SSR} woman]]]]
- 

The apparent non-constituent movement in (70b) would have to involve multiple order-preserving steps of movement to Spec-NP (72) (see Bošković 2016: 21 for a similar approach).

- (72) [NP these [N' friend [N' shoe [NP friend [P_{SSR} ~~these~~ men]]]]]]
- 

The main problem with this kind of analysis is that it offers no explanation for why multiple specifiers of NP are only available when the determiner originates with the possessor. This could be stipulated as a construction-specific property, but it is unclear how to correlate the presence of multiple movement-triggering features on N with the base-position the determiner. As we have seen, this follows naturally on our distributed deletion analysis as the result of an extra cycle of P-marking within the possessor. Furthermore, the sub-extraction approach must treat all apparent non-constituent movement as multiple movement steps. This is a problem when we consider

movement of non-constituent strings to the irrealis position in section 4, as this position can host exactly one constituent (Beier et al. 2011).

3.4.2 Remnant movement

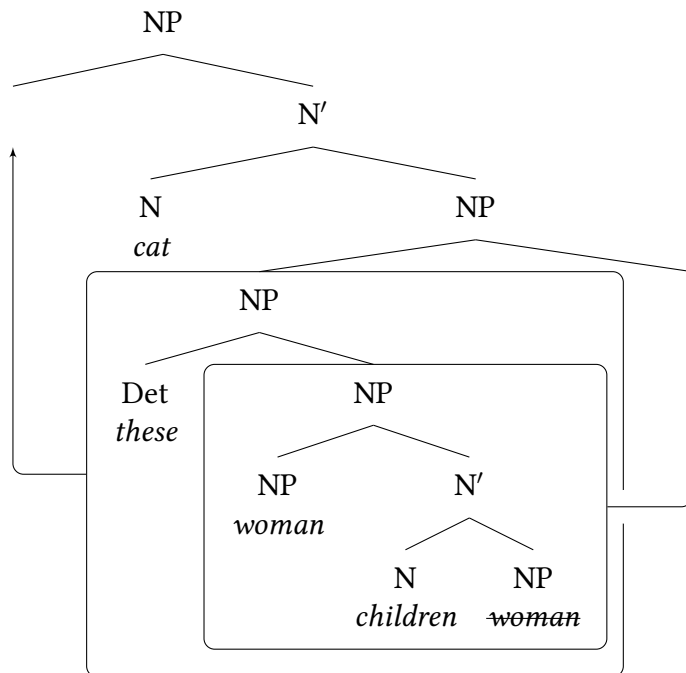
The remnant movement approach differs from sub-extraction in that it does not have to treat non-constituent movement as multiple movements. For this reason, it could fare better in capturing the PPG. That said, the major problem of the remnant movement analysis is the lack of evidence in Iquito for the various ‘evacuating’ movement steps required to create the remnant. We might imagine that the *split determiner requirement* in Iquito can be derived by (73) in a remnant movement analysis.

(73) *Split determiner requirement (remnant movement version)*

The NP complement of a determiner must move out the minimal NP containing the determiner and its complement.

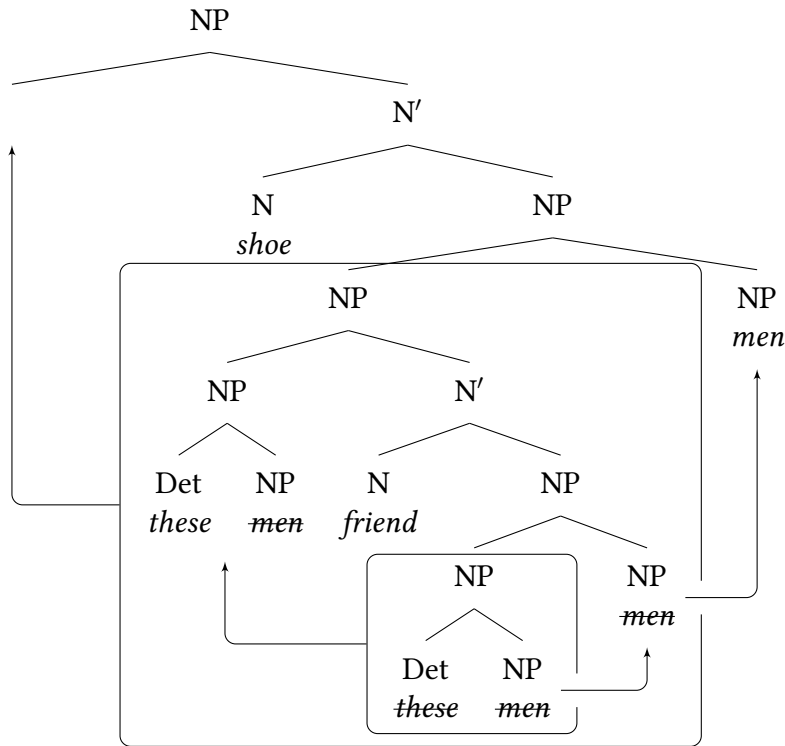
This is one way of deriving obligatory splits when an NP contains a determiner. For example, this applies relatively straightforwardly to cases where the determiner modifies the possessum, as shown in (74).

(74) [cat [these children [woman]]] → *these cat woman children*



However, when we want to derive the appearance of non-constituency when the determiner is associated with the possessor, we require an additional evacuation step of *men* out of the larger NP (75).

(75) [shoe [friend [these men]]] → *these friend shoe men*



This step has no independent motivation. Why would the already evacuated NP have to move again? All else being equal, we might expect to find the word order **these friend men shoe*. It would certainly be possible to stipulate additional evacuation steps, but these do not seem to correlate with any obvious independent property of the structure, e.g. the base-position of the determiner.

As we have already shown, the distributed deletion analysis using P-mark assignment captures the PPG as a simple side effect of independently-motivated 'second-position' movements within each noun phrase or adpositional phrase. The following section provides further support for this approach from discontinuous noun phrases under movement to the so-called 'irrealis position'.

4 The irrealis position

As previously noted in the literature, an important fact about Iquito syntax is that irrealis mood appears to be marked solely by word order (e.g. Lai 2009; Hansen 2011; Beier et al. 2011). For example, the contrast in (76) is between the canonical SVO order in (76a) and the alternative SOV order in (76b). These examples also differ minimally in their interpretation, i.e. realis (76a) vs. irrealis mood (76b), despite the lack of any additional morphological marking. For this reason, Beier et al. (2011) treat this change in word order as the sole indicator of irrealis mood in the language.

(76) *Direct object in the irrealis position*

- a. Iima kapi-ki-Ø [NP asúraaja] (realis)
Ema cook-PFV-NPST manioc
'Ema cooked manioc.'
- b. Iima [NP asúraaja] kapi-ki-Ø (irrealis)
Ema manioc cook-PFV-NPST
'Ema will cook manioc.'

(Beier et al. 2011: 66, (1a, b))

In fact, placing any constituent between the subject and the verb is sufficient to mark irrealis mood in Iquito. For example, an intervening adverb between the subject and the verb also leads to an obligatory irrealis interpretation (77b).

(77) *Adverb in the irrealis position*

- a. Kí=maki-ki-Ø [AdvP suwaáta] (realis)
1SG=sleep-PFV-NPST well
'I slept well.'
- b. Kí= [AdvP suwaáta] maki-ki-Ø (irrealis)
1SG= well sleep-PFV-NPST
'I will sleep well.'

(Beier et al. 2011: 82, (33a, b))

It is therefore not just SOV order that marks irrealis, but rather SXV where X stands for any moveable constituent in the clause. The position occupied by X is referred to as the 'irrealis position' by Beier et al. (2011: 73). We see further evidence for the category-neutrality of this position in (78), where an adpositional phrase fills the irrealis position.

(78) *Directional PP in the irrealis position*

- Kí-níyaaka [PP Iquito=jina] iiku-maa-Ø (irrealis)
1SG=husband Iquitos=LOC go-REMPFV-NPST
'My husband will go to Iquitos (in the distant future).'

(Beier et al. 2011: 81, (31a))

If it is possible for any phrase to occupy the irrealis position, we might expect cases of optionality. This is what we find with ditransitives, for example. With ditransitive verbs, it is possible for either the indirect object (79b) or the direct object (80b) to move to the position between the subject and the verb to signal irrealis mood.

(79) *IO of ditransitive in the irrealis position*

- a. Kí=masiiti-ríi-kura [NP Jaime] nuú (realis)
1SG=sell-MMTPFV-RPST Jaime 3SG
'I sold it to Jaime.'
- b. Kí= [NP Jaime] masiiti-ríi-Ø nuú (irrealis)
1SG= Jaime sell-MMTPFV-NPST 3SG
'I will sell it to Jaime.'

(Beier et al. 2011: 78, (22a, b))

(80) *DO of ditransitive in the irrealis position*

- a. Kí=masiiti-yaa-Ø [NP nuú] Jaime (realis)
1SG=sell-IPFV-NPST 3SG Jaime
'I am selling it to Jaime.'

- b. Kí= [NP nuú] masíiti-rii-Ø Jaime (*irrealis*)
 1SG= 3SG sell-MMTPFV-NPST Jaime
 ‘I will sell it to Jaime.’ (Beier et al. 2011: 78, (21a, b))

As mentioned in the introduction, another option is for part of a split noun phrase to appear in the irrealis position, as shown by (81b). We turn to more complex split examples in section 4.3.

(81) *Determiner in the irrealis position*

- a. Nu= simiita-ki-Ø [NP iina simiimi] (*realis*)
 3SG= read-PFV-NPST DET book
 ‘She/he read this book (earlier today).’
- b. Nu= [NP iina simiimi] simiita-ki-Ø [NP iina simiimi] (*irrealis*)
 3SG= DET read-PFV-NPST book
 ‘She/he will read this book.’ (Beier et al. 2011: 85, (42))

Finally, it is possible to have a negative particle in the irrealis position between the subject and the verb. In certain clause types, negation is marked with a post-verbal particle *kaa* and a verbal suffix *-ji*, as shown in (82a). The negative particle *kaa* can surface between the subject and the verb, leading to an irrealis interpretation (82b).

(82) *Negative particle in the irrealis position*

- a. Saakaa iina kasíra-’ji-ki-Ø [XP kaa] ikwani ? (*realis*)
 what DET catch-NEG-PFV-NPST NEG man
 ‘What didn’t this man catch?’
- b. Jáana simiimi kí= [XP kaa] paaaji-’ji-rii-Ø ? (*irrealis*)
 which book 1SG= NEG study-NEG-MMTPFV-NPST
 ‘Which book won’t I read?’ (Hansen 2018: 146, (52), 149, (59))

We assume that this bipartite negation is similar to similar constructions in other languages such as French *ne...pas* or Middle Dutch *en...niet*, where it has been argued that the affix is the head of a NegP projection and the negative particle occupies Spec-NegP (see e.g. Pollock 1989; Haegeman 1995; Zeijlstra 2004). We therefore adopt the structure in (83) where *kaa* is a phrasal projection in Spec-NegP and *-ji* is the head of NegP.

- (83) ... [NegP [XP *kaa*] [Neg’ [Neg *-ji*] [_vP ...]]]

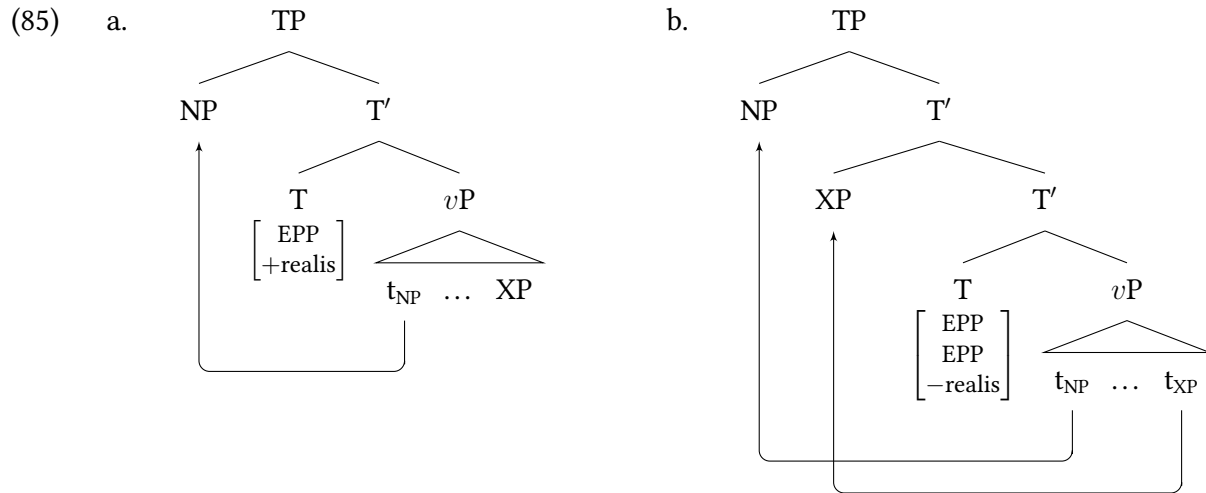
These observations therefore lead to the following descriptive generalization:

(84) *Irrealis generalization*

Irrealis clauses must have an intervening constituent between the subject and verb.

This raises the question of what kind of syntactic analysis best captures this generalization. We argue that this position is derived by movement to an inner specifier of T. In realis clauses, which show SVO order, we assume that the subject is in Spec-TP while the verb moves to T (85a). Movement of the subject is triggered by an [EPP] feature on T. In irrealis clauses, the T head bears a second [EPP] feature. We take this to be part of the lexical specification of irrealis T.

This additional [EPP] feature triggers movement of a second phrasal constituent (presumably the structurally closest one) to an inner specifier of T (85b).⁹



Both of the movements to Spec-TP must be order-preserving. This can be achieved by Richards’s (2001) notion of ‘tucking-in’, where this is a general property of movement to multiple specifiers. Alternatively, one could adopt the ‘buffer’ approach to order-preserving movement in Heck & Himmelreich (2017), where movement to multiple specifiers proceeds via a pushdown stack in a separate workspace. In fact, given the assumption of Cyclic Linearization we made earlier, the need to maintain linearization of *vP* is another potential way of deriving the fact that the irrealis position is the inner specifier of T.

In what follows we provide two arguments in support of this analysis (from adjacency effects and phonological intervention) before moving on to discuss split constructions in the irrealis position. We conclude this section by comparing our analysis of the irrealis position to a possible alternative.

4.1 Adjacency

As outlined above, we assume that the subject occupies Spec-TP and the finite verb moves to T. This is supported by certain adjacency restrictions. For example, it is ungrammatical for an adverb (or any other phrase) to intervene between the subject and the verb in a realis clause (86).

- (86) *No subject-verb intervention in realis*
 *Ikwani maakwáarika asa-ki-Ø iina pápaaja (*realis*)
 man slowly eat-PFV-NPST DET fish
 Intended: ‘A man ate the fish slowly.’ (Beier et al. 2011: 82, (36))

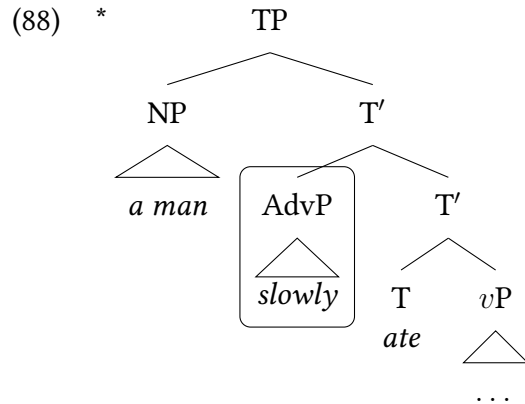
⁹Multiple specifiers of T have been proposed for languages with so-called ‘broad subjects’ (Doron & Heycock 1999, 2010; Alexopoulou et al. 2004; but cf. Landau 2011), e.g. for multiple nominative constructions in Japanese (i).

- (i) [_{TP} yoi otya-ga [_{T'} nihonzin-ga [_{T'} kononde nomu]]] (koto)
 good green.tea-NOM Japanese-NOM enjoying drink (fact)
 ‘Good green tea, Japanese people drink [it] with pleasure.’ (Doron & Heycock 1999: 70, (1b))

We suggest that this can be captured by a general constraint ruling out bar-level adjunction (87), an assumption often assumed to follow from Bare Phrase Structure (see e.g. Chomsky 1994).¹⁰

- (87) *Ban on X'-adjunction*
 Adjunction may not target intermediate projections.

This constraint then rules out (86) straightforwardly:



Importantly, we find the same restriction in irrealis clauses. While irrealis clauses are characterized by the obligatory presence of a constituent between the subject and the verb, Beier et al. (2011) show that no other constituent, e.g. an adverb, may occur between the phrase in the irrealis position and either the subject (89a) or the finite verb (89b).

- (89) *No multiple XPs between subject and verb*
- a. *Ína ikwani nu= nu-náana **iyarákata** jimata-rii-Ø (irrealis)
 DET man 3SG= 3SG-tree rapidly remove-MMTPFV-NPST
 Intended: ‘That man, he will remove his timber rapidly.’
- b. *Ína ikwani nu= **iyarákata** nu-náana jimata-rii-Ø (irrealis)
 DET man 3SG= rapidly 3SG-tree remove-MMTPFV-NPST
 Intended: ‘That man, he will remove his timber rapidly.’

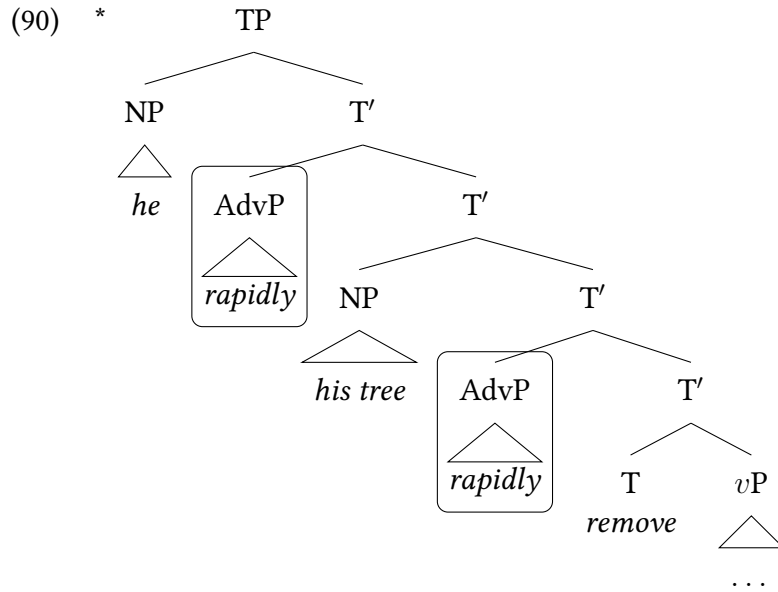
(Beier et al. 2011: 90, (55))

On our analysis, the irrealis position is an inner specifier of T. For this reason, the same ban on adjunction to T' in (88) also extends to the irrealis examples in (89), as shown in (90).

¹⁰This could also follow from a more general principle that intermediate projections are entirely inaccessible to the syntax, such as (i) recently proposed by Landau (2020).

- (i) *Syntactic X'-Invisibility* (Landau 2020: 378):
 Intermediate projections are invisible to syntactic operations.

While this would successfully derive the ban on intermediate adjunction, this would seem to be incompatible with an approach to order-preserving multiple specifier creation involving tucking-in since the second step of movement would have to target an intermediate projection.



We can therefore use the ban on bar-level adjunction to derive the adjacency requirement that the subject and verb must be immediately adjacent in realis clauses and subject-irrealis XP-verb must be immediately adjacent in irrealis clauses. In alternative analyses, this restriction does not follow as naturally, as we return to in section 4.4.

4.2 Phonological intervention

The second argument in favor of our structure comes from a phenomenon referred to by Beier et al. (2011) as ‘phonological gapping’. In our analysis, the irrealis position is characterized the presence of a second [EPP] feature on T. This renders the formation of an inner specifier by movement obligatory. One may then wonder what happens when there is no moveable constituent other than the subject in the clause, for example in the case of an intransitive clause that does not contain any adverbs. Beier et al. (2011: 91) present a particularly revealing example of this kind.

With an intransitive verb such as *iikwa* (‘go’), there is typically hiatus resolution when the proclitic subject ends in a vowel, as is the case with *pi* (‘we’) in (91). The sequence /i:/: that would occur between the end of the subject *pi* and the start of the verb *iikwa* is resolved by deleting the second vowel (while preserving its length) to derive [i:] (see Casali 1997 on deletion as a hiatus repair). However, the corresponding irrealis example in (92) has the same underlying representation as (91), but there is no hiatus resolution.

(91) [pɪ.k^wa.ki]
 Pi=iikwa-ki-Ø
 1PL.INCL=go-PFV-NPST
 ‘We went.’ (*realis*)

(92) [pɪ.i:k^wa.ki]
 Pi=iikwa-ki-Ø
 1PL.INCL=go-PFV-NPST
 ‘We will go.’ (*irrealis*)

(Beier et al. 2011: 91, (56, 57))

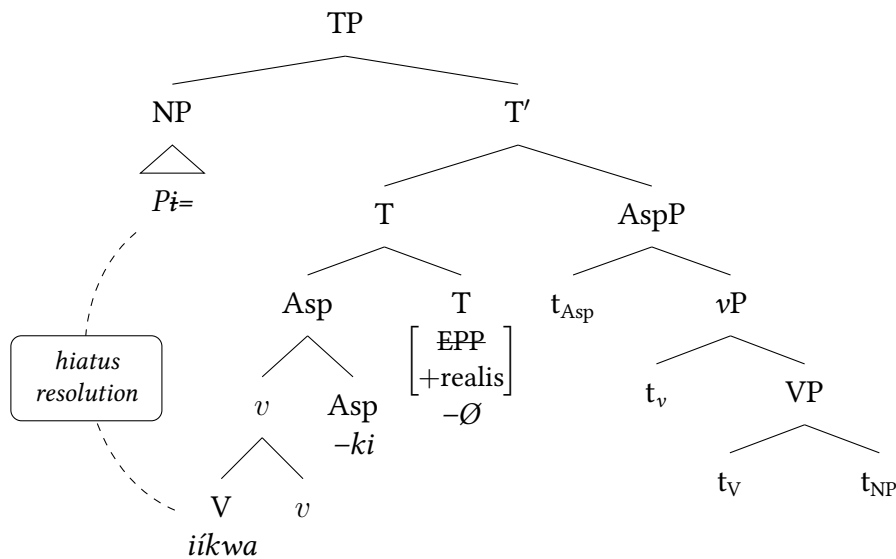
In these examples, irrealis marking is expressed by the blocking of hiatus resolution in (92). Beier et al. (2011: 91) suggest that there is an empty irrealis position that remains unfilled in examples like (92) and ‘presumably the formation of phonological words is impeded across the empty

syntactic position'. However, it is unclear why an unfilled syntactic position should have this effect.¹¹ In fact, it has been argued that the presence of an empty category derived in the syntax (e.g. a trace of movement) can sometimes block phonological operations from occurring across it (see e.g. with *wanna*-contraction: Lakoff 1970; Chomsky & Lasnik 1977; Bresnan 1978 and liaison in French: Selkirk 1972). We argue that there is indeed a null syntactic element intervening in the irrealis position in (92), namely the empty verb phrase.

Given our account of the irrealis position as an additional specifier of T created by EPP movement, it is obligatory that some XP move to this position in order to check the second EPP feature on irrealis T. In the case of an intransitive verb such as *iikwa* ('go'), where there is no additional phrasal XP in the clausal spine, we argue that what is moved to the irrealis position is a remnant verbal category containing no overt material. Since the verb has moved to T, the verb phrase (either VP or *v*P) does not contain any pronounced material. Nevertheless, this is an available syntactic category to check the second [EPP] on irrealis T.

To see this, first consider the structure for the realis clause in (91) given in (93). Since T only bears a single [EPP] feature, the sole argument of the verb is moved to Spec-TP and hiatus resolution can apply between the subject and the verb.

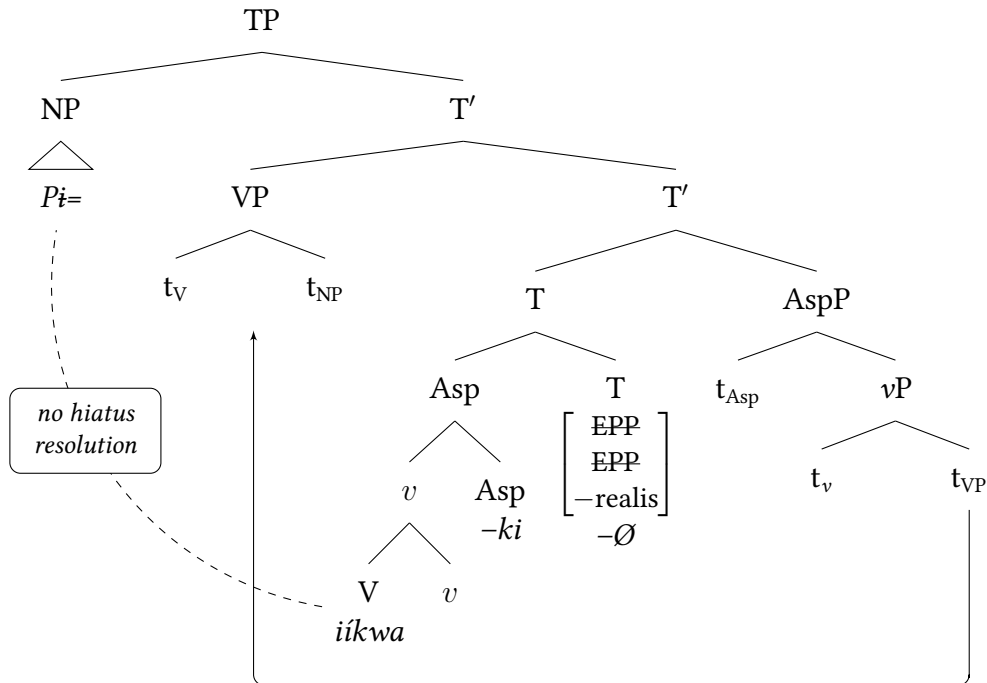
(93) [pɪ.k^wa.ki] 'We went' (*realis*)



In contrast, in irrealis clauses such as (92), the remnant VP is moved to the inner specifier of T to check the additional [EPP] feature. This constituent intervenes structurally between the subject and verb in T. As (94) shows, this interruption of structural adjacency blocks hiatus resolution.

¹¹Lai (2009: 150) argues that there is a silent pronoun in the irrealis position in such examples. This approach raises non-trivial questions about the status of this null element, i.e. why it is only available for intransitives.

(94) [pi.i.k^wa.ki] ‘We will go’ (*irrealis*)



Due to the obligatoriness of a second [EPP] in irrealis contexts, our analysis predicts that some phrase has to move to the inner specifier of T, even if that phrase is phonologically vacuous. Examples such as the ones above provide supporting evidence for this view, without having to assume some unmotivated empty category (e.g. a null expletive).

4.3 Split XPs in the irrealis position

In this section, we discuss examples in which we find discontinuous NPs and PPs under movement to the irrealis position. These examples are important as they allow us to fill in certain gaps in our data and also provide further support for the PPG.

4.3.1 Split NPs in the irrealis position

Recall the formulation of the PPG in (7), repeated below.

(95) *Possessum pied-piping generalization (PPG)*

A possessum P appears together with a determiner D before a movement-triggering head H if D modifies the possessor of P and P moves to Spec-HP.

We have already shown that certain examples of NP- and PP-internal word order fall under this generalization. In addition, movement to the irrealis position does too. There are two patterns we find with irrealis clauses where the object is a possessive NP containing a determiner (see Brown 2004a; Hansen 2011 for further examples). In (96a), the determiner is associated with the possessum and only the determiner surfaces in the irrealis position. In (96b), the determiner modifies the possessor and both the possessum and the determiner occupy the irrealis position.

(96) a. Pattern 1: Subj Det_i V Possessor Possessum_i

Aámiikáaka kí= iipi miwĩira-kwa-Ø [NP mĩsaji mira]
 one.day.away 1SG= DET.PL.AN visit-ASP-NPST woman child.PL
 ‘Tomorrow, I will go there to visit these children of the woman.’

(Hansen 2011: 155, (3.89))

b. Pattern 2: Subj Det_i Possessum V Possessor_i

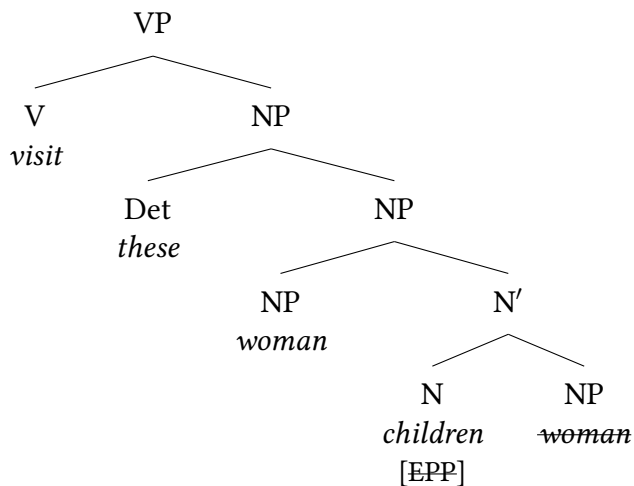
Aámiikáaka kí= iipi sináaki sikita-rii-Ø [NP mĩrajaarika]
 one.day.away 1SG= DET.PL.AN clothes wash-ASP-NPST child.PL.DIM
 ‘Tomorrow, I will wash the clothes of those children.’

(Hansen 2011: 161, (3.102))

The example in (96a) is important because it provides a structure that we did not have in the patterns of NP-internal word order in (16), namely an example where the main possessum is modified by a determiner. We noted that this configuration is only possible if the phrase undergoes displacement. We can now see this in more detail.

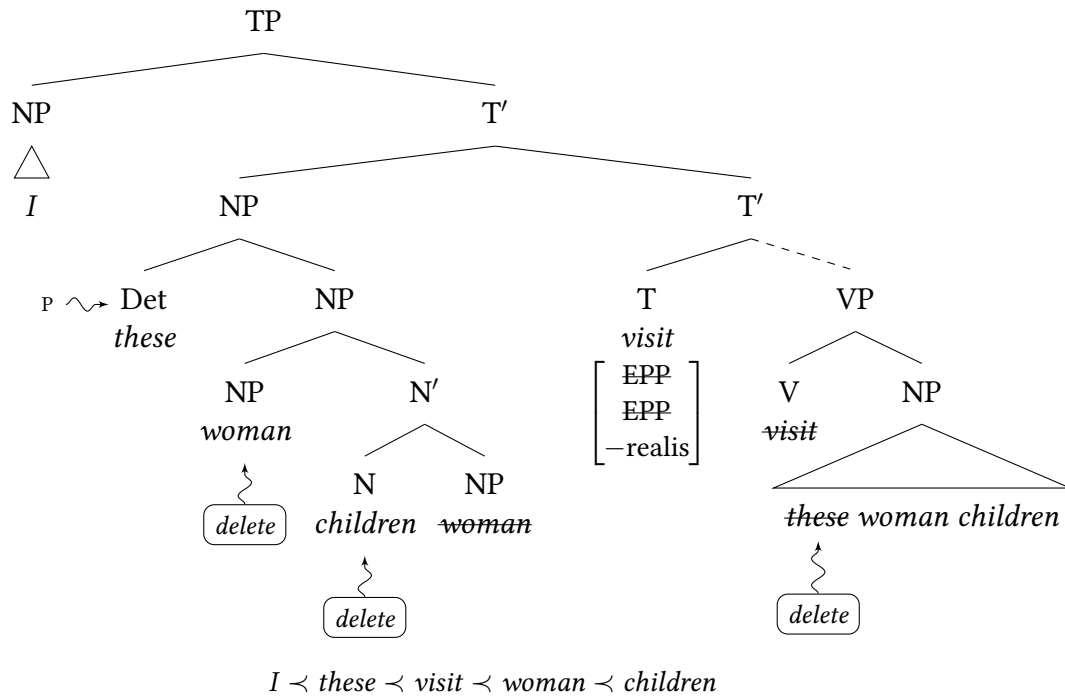
The pre-movement structure for (96a) is given in (97). The entire NP is merged as the direct object of the verb. Within the NP, the bare possessor *woman* has undergone second-position movement to the edge of the possessum noun phrase, which is modified by the determiner *these*.

(97) Pattern 1: Subj Det_i V Possessor Possessum_i



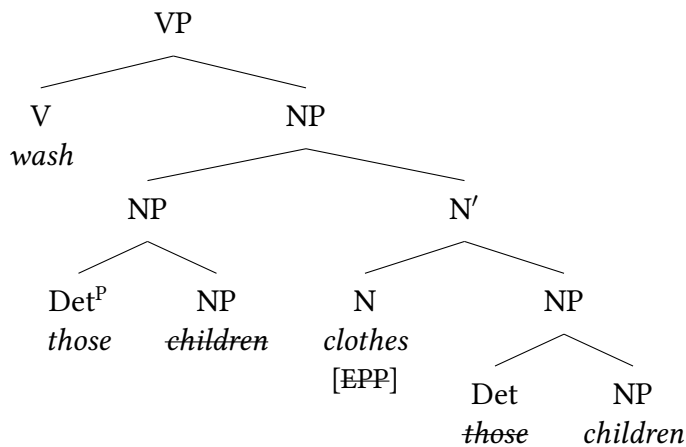
Recall that this structure with a determiner modifying the main possessum is not possible unless the phrase undergoes movement to derive a split construction. We saw this already with noun phrase-internal movement and (98) shows how this is derived under movement to the irrealis position. Since the determiner at the left edge was not previously P-marked, P is assigned to it in the higher copy in Spec-TP. The corresponding occurrence of the determiner is deleted in the lower copy, while all non-P-marked terminals in the higher copy are also deleted.

(98)



For Pattern 2 where the determiner modifies the possessor (96b), the pre-movement structure is given in (99). The important difference here is that the determiner is already P-marked due to the split construction derived inside the NP.

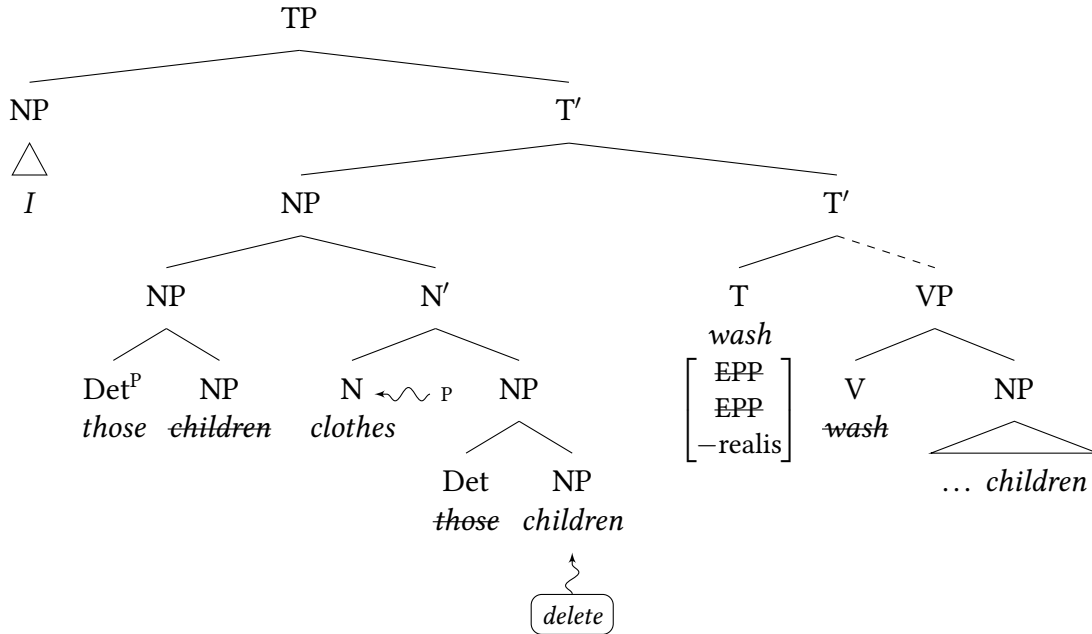
(99) Pattern 2: Subj Det_i Possessum V Possessor_i



When this phrase moves to the irrealis position (100), P-mark assignment applies to the possessum *clothes*. The corresponding occurrences of the P-marked elements (*those* and *clothes*) are deleted in the lower copy (this is omitted from the representation). Finally, *children* is deleted in the higher copy and pronounced in the lower one.¹²

¹²An important question here pertains to intermediate movement. If *vP* is a phase and requires moving phrases to stop at its edge (for reasons of Cyclic Linearization; see section 3.1.3), we do not want P-marking to apply. This would result in multiple elements pronounced in the higher copy of Pattern 1, for example, if an additional cycle of

(100)



These examples serve to show that the PPG, as captured by our analysis, holds for both NP-internal and clause-level movement. Examples such as (96a) also fill an important gap in NP-internal word order. They show that it is possible for a determiner to modify the highest possessum in a NP, as long as that NP undergoes movement to derive a split construction.

4.3.2 Split PPs in the irrealis position

We now turn to split PPs under movement to the irrealis position. Here, we also find two relevant patterns. For a PP undergoing movement to the irrealis position whose complement contains a possessor, if the determiner is associated with the possessum, then the determiner and the adposition are pronounced in the higher copy (101a). In the second pattern, the determiner modifies the possessor and we find three elements in the irrealis position: the determiner, the possessum and the adposition (101b).

P-marking applied after an intermediate movement step. An importance difference, however, is that the movement steps that lead to P-mark assignment involve second-position movement within PPs and NPs and movement to the irrealis position. We have assumed that all of these movements are driven by an [EPP] feature. We might then propose that the *split determiner requirement* only applies to movement chains created by feature-driven movement (i).

(i) *Split determiner requirement (revised)*

In a movement chain $\langle \alpha, \beta \rangle$ created to check feature F, if α dominates a determiner, then a P-mark must be assigned to a sub-constituent of α .

On a Cyclic Linearization approach, successive-cyclic movement is motivated by the need to create non-contradictory linearization statements. For this reason, we can eschew edge features on phase heads and similar devices and assume that successive-cyclic movement is not feature-driven (see e.g. Heck & Müller 2000).

(101) a. Pattern 1: Subj Det_i Adposition V Possessor Possessum_i

Aámiikáaka kí= iina =jina samaraata-ríi-Ø [PP ___ ikwani iita umaana]
 one.day.away 1SG= DET =LOC relax-ASP-NPST man house big
 ‘Tomorrow, I will relax in this big house of the man.’

(Hansen 2011: 170, (3.114))

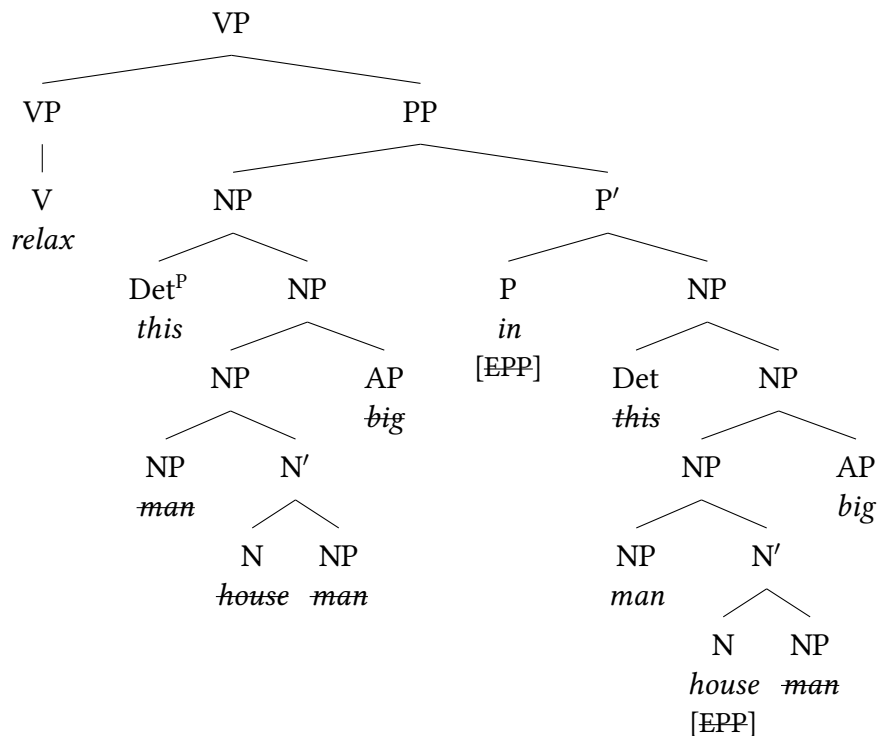
b. Pattern 2: Subj Det_i Possessum Adposition V Possessor_i

Aámiikáaka kana iina nasi =jina nata-ríi-Ø [PP ___ miisaji]
 one.day.away 1PL.EXCL DET field =LOC plant-ASP-NPST woman
 ‘Tomorrow, we will plant in the field of this woman.’

(Hansen 2011: 171, (3.118))

In Pattern 1 (101a), the relevant pre-movement structure for the PP adjunct is given in (102). The determiner modifies the possessum NP headed by *house* (the same is true for the adjective *big*). Recall that this is a configuration that constituted a gap in the table in (26). In this example, we have the corresponding structure in the base configuration (an adposition whose complement has a determiner modifying the possessum). Our analysis predicts that the PP has the internal structure in (102) in its base-position, where only the determiner is pronounced before the adposition.

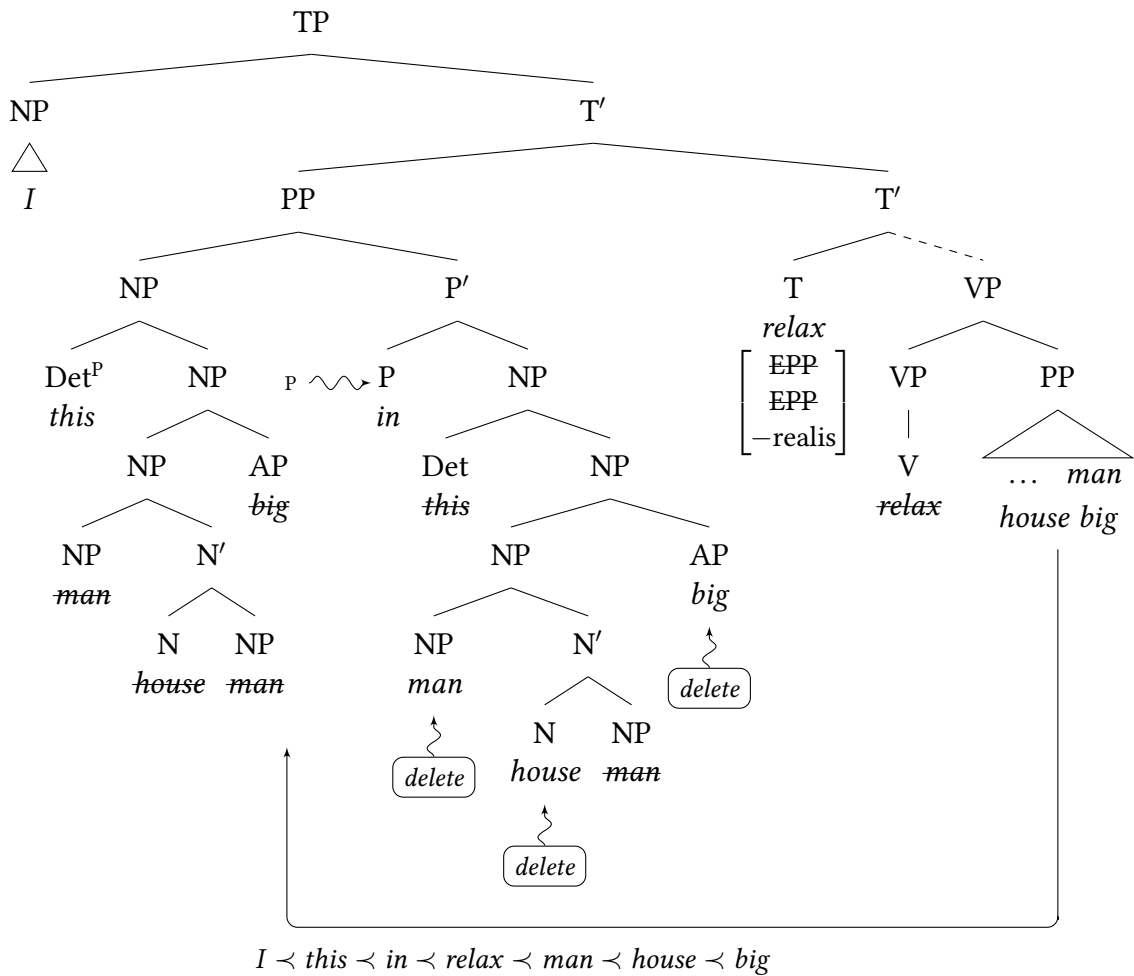
(102)



This assumption makes the correct prediction for the surface order when this phrase undergoes movement to the irrealis position (103). When P-mark assignment applies, the leftmost undeleted constituent is the adposition, so it receives the P-mark. Consequently, both the determiner and the adposition are pronounced in the higher copy and all other PP-internal material is realized in

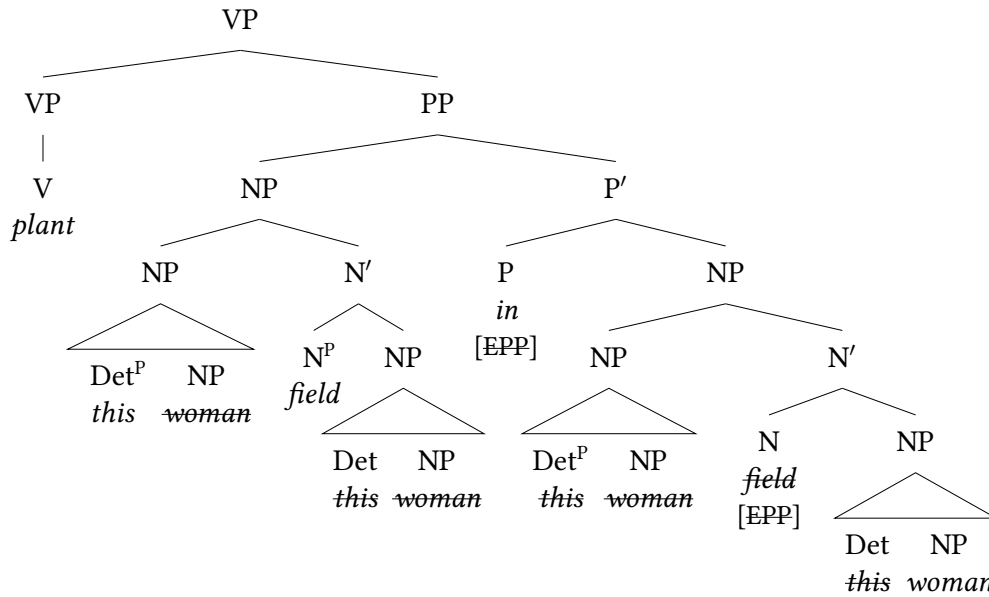
the lower copy.

(103)



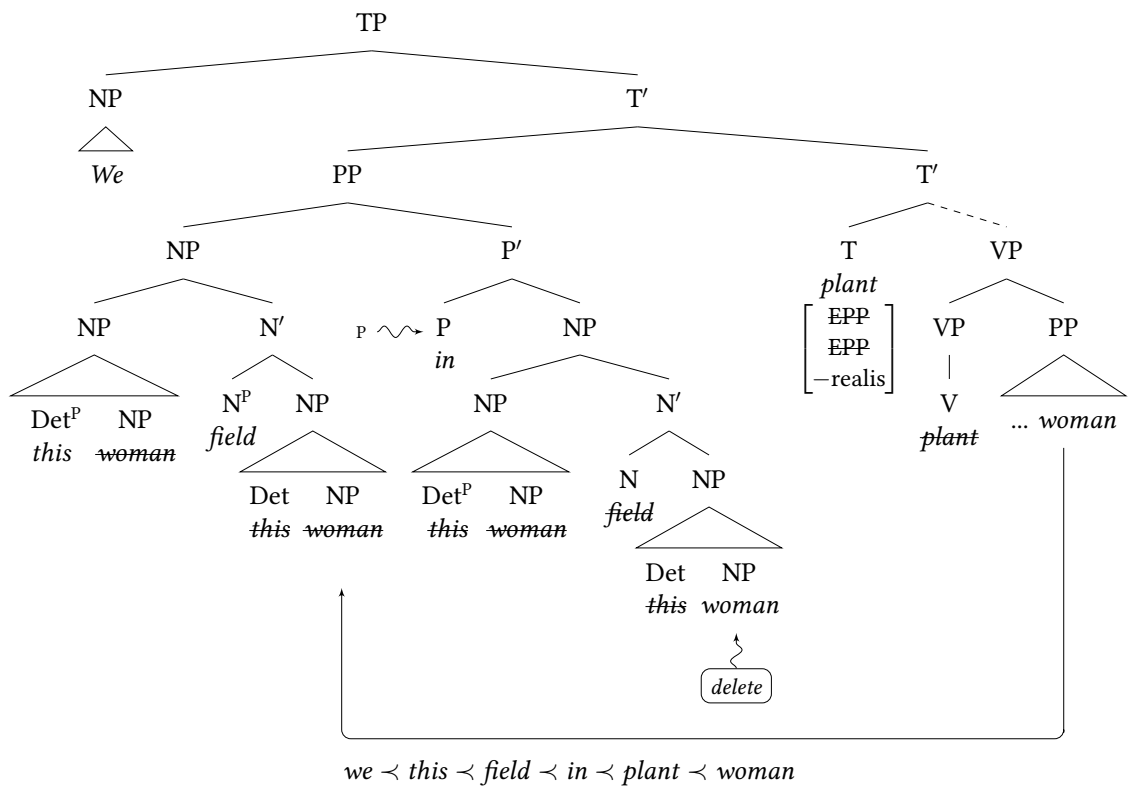
For the second pattern where the determiner is associated with the possessor (101b), we already have two cycles of P-marking within the PP before it moves to the irrealis position (104). The possessor first moves to the edge of its possessum's NP resulting in P-mark assignment. When the entire NP complement moves to Spec-PP in a subsequent step, the possessum is also P-marked.

(104)



Our analysis makes a clear prediction about these cases, namely that we expect assignment of a third additional P-mark when this PP moves to the irrealis position. As (105) shows, when the PP moves, the leftmost sub-constituent available for P-marking is the adposition.

(105)



For this reason, three elements are pronounced in the higher copy. This is precisely what our analysis predicts, if a phrase already contains two P-marks in its base-position, then movement of this phrase will result in a third sub-constituent of that phrase being pronounced. Indeed,

this is what we find in examples like (105). In principle, one might expect to find parallel NP examples where a noun with a complex possessor is further embedded under another noun (e.g. ‘the shoe of the friend of the children of these men’). We do not have attested examples of this kind, presumably due to their sheer complexity. In the absence of such examples, movement to the irrealis position offers a way of examining the kind of examples with three cycles of P-marking that our analysis predicts to exist.

4.4 Consequences for the analysis of the irrealis position

The data reviewed in this section have some important consequences for the analysis of irrealis mood in Iquito. We concur with Beier et al. (2011) that irrealis marking in Iquito involves displacement of any constituent to a dedicated ‘irrealis position’ in the clause. We identified the irrealis position as an inner specifier of T. Evidence for this structure comes from the obligatory adjacency of the subject, irrealis XP and verb (which we relate to a ban on X’-adjunction), the observation that this position is filled by silent material with intransitive verbs (the remnant VP on our analysis) and finally by the fact that the patterns of discontinuity we find with movement to the irrealis position are consistent with what we expect if phrasal movement is involved.

It is worth emphasizing these points in light of a potential alternative to the phrasal movement analysis, namely the idea that the distinction between realis and irrealis word order is the derived by head movement rather than phrasal movement, as suggested by Brown (2004*b*), Hansen (2006), and Berger (2017). As (106) shows, on this alternative approach, the verb raises to T in realis clauses (106a), while this movement is absent in irrealis clauses (106b).

- (106) a. [TP Iima [T’ [T [V kapiki]] [VP [NP asúraaja] t_v]]] (realis)
 Ema cook manioc
 ‘Ema cooked manioc.’
- b. [TP Iima [T’ [T Ø] [VP [NP asúraaja] kapiki]]] (irrealis)
 Ema manioc cook
 ‘Ema will cook manioc.’

On this analysis, a [–realis] lacks the feature relevant for head movement of the verb to T (in contrast to the [EPP] feature on our analysis).

This approach faces some problems though. First, in order to derive (106b), one would have to assume that Iquito is underlying OV, a fact that is broadly inconsistent with the head-initial profile of the language, or alternatively stipulate that there is obligatory object shift only in irrealis clauses. Furthermore, it is unclear how this analysis can capture the other data presented in this section. If the verb remains low in irrealis clauses (106b), then it is unclear why there should be a ban on adjunction to the verb phrase leading to the adjacency restrictions discussed in section 4.1. Furthermore, the phonological intervention effect from section 4.2 is equally unexpected. Finally, the parallelism between the patterns of discontinuous NP realization within NPs/PPs and irrealis clauses strongly suggests that the same mechanism is at play (i.e. phrasal movement), something that would not be captured by the alternative analysis with verb movement.

5 Split NPs in subject position

In this final section, we discuss some further intricacies of split NP constructions in Iquito involving movement to subject position. Recall from example (2), repeated below as (107), that NP splits are obligatory with intransitive verbs such as *makii* ‘sleep’.

- (107) a. Ikwani makii-Ø
 man sleep.IPFV-NPST
 ‘The man is sleeping.’
 b. Iina makii-Ø ikwani
 DET sleep.IPFV-NPST man
 ‘This man is sleeping.’
 c. *Iina ikwani makii-Ø
 DET man sleep.IPFV-NPST
 ‘This man is sleeping.’ (Michael 2004b: 3, (6))

In contrast, the subject of a transitive verb may not be split under movement to subject position, as (108) shows.

- (108) *Iina irikatájuu-yaa-Ø ikwani iina iimina
 DET repair-IPFV-NPST man DET canoe
 ‘This man repairs this canoe.’ (Michael 2004b: 4, (9a))

Accordingly, when the subject of a transitive verb contains a determiner, both the determiner and the noun must appear together in the pre-verbal subject position (109).¹³ This therefore constitutes the only exception to Iquito’s *split determiner requirement* (42) that we are aware of.

- (109) a. ?Iina ikwani irikatájuu-yaa-Ø iina iimina.
 DET man repair-IPFV-NPST DET canoe
 This man repairs this canoe. (Michael 2004b: 4, (9b))
 b. Iina miyaara s̄inaki-Ø-kura iina kaaya
 DET dog bite-PFV-RPST DET person
 That dog bit that person (yesterday). (Lai 2009: 54, (18))

Interestingly, the impossibility of split transitive subjects is lifted when the direct object undergoes displacement to clause-initial position. This can be seen both with *wh*-movement (110a) and focus fronting (110b).

¹³Example (109a) is judged as marginal (?), but this is due to a discourse constraint in Iquito requiring that, when there are two third person arguments of a verb, one of them must be more ‘marked’ than the other. This generally means that one of them must be topicalized or focused, as is the case for the subject in (i).

- (i) Iina ikwani_i nu_i=irikatájuu-yaa-Ø iina iimina
 DET man 3SG=repair-IPFV-NPST DET canoe
 This man, he repairs this canoe. (Michael 2004b: 4, (9c))

The marginality of (109a) means that ‘this man’ and ‘this canoe’ must both be discourse neutral. However, Michael (2004a) notes that this is an entirely pragmatic constraint determined by the discourse context.

- (110) a. Saakaá₁ iina irikatájuu-yaa-Ø ikwani —₁ ?
 what DET repair-IPFV-NPST man
 ‘What is this man going to repair?’ (Michael 2004*b*: 4, (8b))
- b. [_{NP} Masiána nasi]₁ iina mii-yaa-Ø mhisaji —₁
 a.lot field DET have-IPFV-NPST woman
 ‘This woman has SEVERAL FIELDS.’ (Hansen 2011: 134, (3.46))

We propose that the restrictions on split subjects in Iquito are best analyzed as belonging to the class of constructions that Alexiadou & Anagnostopoulou (2001) subsume under their *Subject In-Situ Generalization* (SSG), whose descriptive formulation is given in (111).

- (111) *Subject In-Situ Generalization* (Alexiadou & Anagnostopoulou 2001: 193):
 Whenever a sentence contains a subject and a direct object, one of the arguments must vacate the *vP*.

This generalization covers a range of constructions, including expletive constructions and locative/quotative inversion in English, stylistic inversion in French, among others. These constructions all have in common a transitivity restriction that is assumed to be related to the lack of movement of the subject.

As a representative example, consider locative inversion in English (similar data can be given for quotative inversion in Collins & Branigan 1997). A relatively established view is that locative inversion involves movement of the locative phrase to the subject position, Spec-TP, and exceptional raising of the verb to T (e.g. Bresnan 1977; Collins 1997; Culicover & Levine 2001; Doggett 2004; Bailyn 2004; but cf. Postal 2004; Bruening 2010). The presence of the subject in the canonical subject position therefore forces the external argument to remain in its base position. For intransitives like (112a), this is not problematic in light of the SSG. Crucially, though, the SSG accounts for the emergence of a transitivity restriction with locative inversion due to the fact that subject stays low in (112b).¹⁴

- (112) a. [_{TP} [_{PP} Into the room] [_{T'} walked [_{vP} a child —_V —_{PP}]]]
 b. * [_{TP} [_{PP} Into the room] [_{T'} kicked [_{vP} a child —_V a ball]]]

Furthermore, so-called ‘stylistic inversion’ in French shows a similar restriction (Kayne & Pollock 1978; Valois & Dupuis 1992; Collins & Branigan 1997; Alexiadou & Anagnostopoulou 2001). Under certain circumstances, it is possible for the subject to appear post-verbally, as in (113a). However, this is generally not possible with transitive verbs (113b).

- (113) a. Je me demande [_{CP} quand partira [_{vP} ton ami —_V]]
 I wonder when will.leave your friend
 ‘I wonder when your friend will leave.’ (Kayne & Pollock 1978: 595, (2a))

¹⁴Indeed, the same restriction emerges when the subject movement is blocked, perhaps more uncontroversially, by an expletive occupying the canonical subject position (see e.g. Bobaljik & Jonas 1996):

- (i) a. Suddenly, there walked a child into the room.
 b. *Suddenly, there kicked a child a ball (into the room).

- b. *Je me demande [_{CP} quand achèteront [_{vP} les consommateurs ____v les pommes]]
 I wonder when will.buy the consumers the apples
 Int. ‘I wonder when the the consumers will buy the apples.’

(Alexiadou & Anagnostopoulou 2001: 196, (7))

On Alexiadou & Anagnostopoulou’s (2001) analysis, the subject stays low in French stylistic inversion (also see Valois & Dupuis 1992). For this reason, (113b) also falls under the SSG.

Importantly, the SSG predicts that movement of the direct object out of *vP* should void this effect. As (114) shows, this is indeed borne out, parallel to what we saw with Iquito splits in (110).

- (114) Que₁ crois-tu [_{CP} que manquet [_{vP} un grand nombre d’étudiants ____v ___₁]] ?
 what believe-you that be.absent.from a great number of.students
 ‘What do you think that a large number of students are missing?’

(Alexiadou & Anagnostopoulou 2001: 196, (8a))

We therefore suggest that the source of the transitivity restriction on split subject constructions in Iquito is the same as in these examples: No part of the subject may be pronounced inside the *vP* if there is a direct object pronounced inside *vP*. Thus, a split with an intransitive verb is unproblematic (107b), as only a single NP is pronounced inside the *vP* (115a). With a transitive verb, as we saw in (108), both the head nouns associated with the subject and the object are pronounced within *vP* (115b), leading to a violation of the SSG. Parallel to stylistic inversion in French, moving the direct object out of the *vP* makes a split transitive subject licit (115c), as shown by (110).

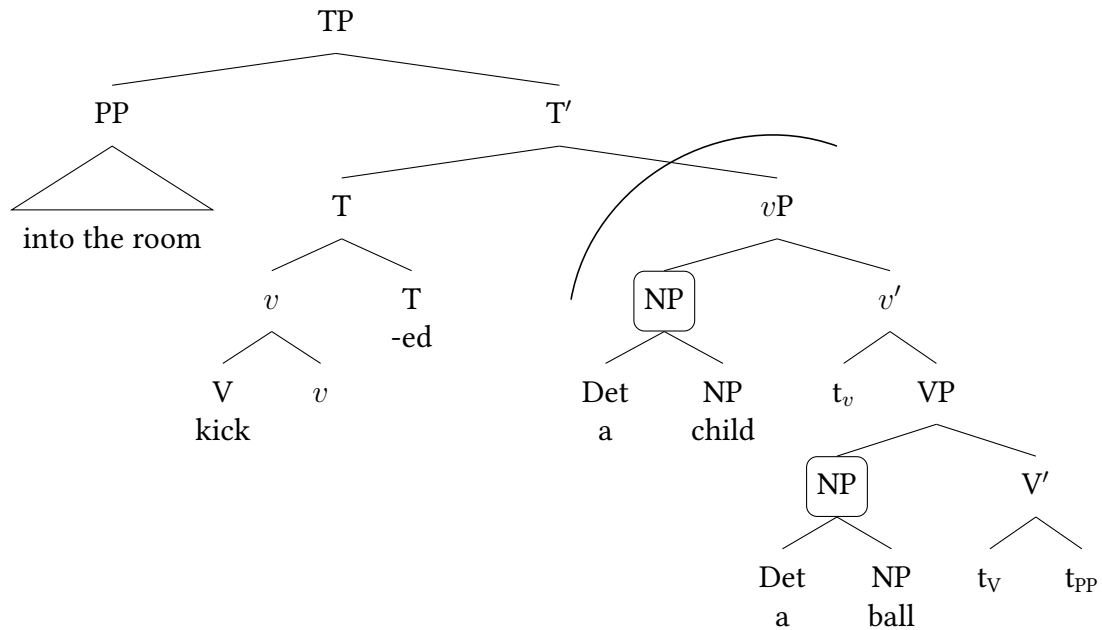
- (115) a. [_{TP} [_{NP} this man] [_{T'} sleep [_{vP} [_{NP} this man] t_v]]]
 b. * [_{TP} [_{NP} this man] [_{T'} repair [_{vP} [_{NP} this man] t_v [_{NP} this canoe]]]]
 c. [_{CP} [_{NP} what] [_{TP} [_{NP} this man] [_{T'} repair [_{vP} [_{NP} this man] t_v [_{NP} what]]]]]]

Iquito therefore provides a novel argument in favor of the SSG. The important difference in the Iquito data, however, is that they illustrate that the SSG also holds with split constructions, where only part of the subject remains *vP*-internal. From a theoretical perspective, this means that the analysis of the SSG cannot be linked to the complete absence of movement to subject position. On the distributed deletion account advocated here, the entire subject does in fact move to Spec-TP, however not all of the phrase is pronounced there.

For this reason, we find the implementation of the SSG in Richards (2010) to be the most promising in terms of capturing the Iquito facts. Richards argues in favor of a general constraint that Spell-Out domains may not contain two items which are ‘too similar’ in some relevant sense, a constraint that he terms *Distinctness*. In an ungrammatical locative inversion example such as (112b), Richards (2010: 15) argues that the two boxed NP nodes in (116) may not co-occur in the same Spell-Out domain due to a linearization conflict.¹⁵

¹⁵It is worth noting that, given our assumption of phases and Cyclic Linearization (section 3.1.3), it is the entire *vP* phase that is spelled-out, including the base position of the subject (Spec-*vP*). This differs minimally from Richards (2010: 15) who ensures this with an additional functional head *v_C* merged above *vP* that acts as the phase head.

(116)

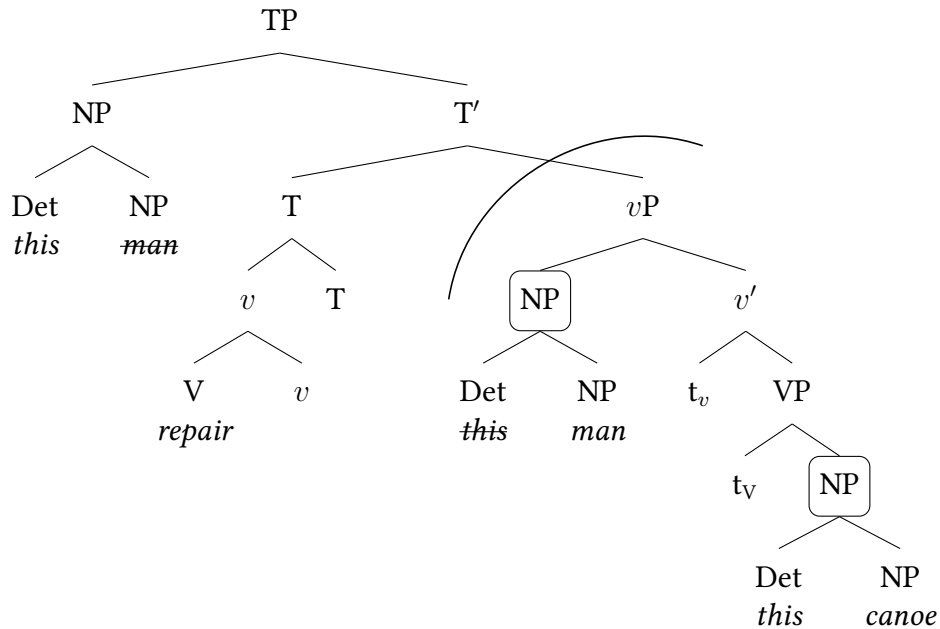


This then gives us a general way of capturing the SSG as a PF constraint. When extended to the Iquito data, even though the subject moves to Spec-TP in the ungrammatical (108), repeated below, the pronunciation of the head noun 'man' of the subject within the *v*P will suffice to violate Distinctness (117).¹⁶

¹⁶There is more that needs to be said here, however. Richards (2010) explicitly assumes that two phrases must stand in an asymmetric c-command relation in order for them to trigger a Distinctness violation. This is why the boxed nodes in (116) are the phrasal projections rather than the actual terminals that undergo linearization. We therefore need to assume that any pronounced material inside a copy of an XP renders it active for Distinctness. In (117), the higher NP node of the subject would then asymmetrically c-command the object NP, leading to *(NP, NP).

- (117) **Iina irikatájuu–yaa–Ø ikwani iina iimina*
 DET repair–IPFV–NPST man DET canoe
 ‘This man repairs this canoe.’

(Michael 2004b: 4, (9a))



As we have seen, one way to repair this structure is by \bar{A} -moving the object (110). The other possibility is to pronounce the entire external argument in Spec-TP, meaning that there is only one contentful NP node present within vP . The split determiner requirement (42) must therefore be overruled by, or ranked lower in some relevant sense than, the Distinctness constraint. This is what yields the sole exception to the obligatoriness of NP splits with determiners in Iquito.¹⁷

While this analysis is successful in accounting for the data motivating a transitivity restriction for NP splits in subject position and linking it to a broader cross-linguistic generalization, it is important to mention that there have been some potentially problematic counterexamples reported in the Iquito literature. Consider the data in (118), for example, where a transitive subject NP is split despite the presence of a lower direct object.

¹⁷One might worry that the assumptions outlined in this section cause problems for the complex NP internal cases discussed in section 3. We saw structures such as (i), where an NP Spell-Out domain contained two contentful NP nodes. We do not want Distinctness to apply in such cases. What makes (i) different, however, is the fact that the two NPs to be linearized are copies of the same phrase. In the Copy Theory of Movement, it is necessary to have some way of distinguishing copies from repetitions. Following Chomsky (1995: 227), it is commonplace to assume that copies contain a lexical index to keep track of which phrases are copies rather than repetitions (see e.g. Nunes 2001: 306; Collins & Stabler 2016: 45). We can exempt copies created by movement from the scope of Distinctness, as it seems that Richards (2010: 7) intended, by assuming that two elements must bear distinct lexical indices in order to trigger a Distinctness violation. In (i), the relevant phrases bear the same lexical index L-1. In an ungrammatical example like (108), however, the offending NPs are lexically distinct (ii).

- (i) $[_{NP} L-2 [_{NP} L-1 \text{ these men}] [_{N'} [_{N} \text{ friend}] [_{NP} L-1 \text{ these men}]]]]$
- (ii) $*[_{TP} [_{NP} \text{ this man}] [_{T'} \text{ repair} [_{vP} [_{NP} L-1 \text{ this man}] t_v [_{NP} L-2 \text{ this canoe}]]]]]$

- (118) a. lina karinii–yaa–Ø kaaya nuu
 DET look.at-IPFV–NPST person 3SG
 ‘The man was looking at him.’
- b. “Kwasiiija=na” iina aáti–Ø–kura–ána kaaya nuu
 good–REP DET say–PFV–RPST–REP person 3SG
 ‘“Good”, the man said to him.’
- c. iina mii–yaa–Ø ihuaariini nuu
 DET cause.to.suffer–IPFV–NPST illness 3SG
 ‘He has this illness.’ (Lit. This illness causes him to suffer.)
 (Hansen 2011: 132, (3.42, 3.44–5))

These examples differ from (108) in that the object is a pronoun in all of these cases. One could tentatively assume that the syntactic representation of pronouns is not sufficient to trigger a Distinctness effect with regard to the NP subject. This might follow if pronouns are viewed as (potentially minimal) projections of D/Det. This could also make sense of why topicalizing an object with a resumptive pronoun in its base position does not appear to violate the SSG (119).

- (119) [_{NP} lipi jáakaana–ka]₁ ka=iipi amuu–Ø–Ø mira–jaarika nuu₁
 DET white.monkey–PL NEG=DET kill–PFV–NPST children–DIM 3.SG
 ‘These children haven’t killed the white monkeys.’
 (Lit. These white monkeys, these children haven’t killed them)
 (Michael 2004b: 5, (13))

That said, there still remains an example that is difficult to accommodate even under the view that pronominal direct objects are excluded from the scope of the SSG. In (120), the object is a full noun phrase *nu=naaki* (‘its eggs’), albeit without a determiner. Here, the subject is split despite the presence of a non-pronominal object.

- (120) tí iina inaáriki=na mitiija nu=naaki
 where.REL DET lay.DPST.IPFV=REP turtle 3SG=eggs
 ‘where the turtle lays its eggs.’
 (Hansen 2011: 132, (3.43))

One possibility for accommodating such examples is to assume that they are not actually transitive constructions. Hansen (2011: 131–132) notes that these examples are indeed ‘less transitive’ in a functional sense (e.g. based on the criteria in Hooper & Thompson 1980). It could well be that it is the reduction or absence of transitivity that excludes examples like (120) from the purview of the SSG. In practical terms, this could mean that *vP* does not count as a phase in (120) and, as such, the linearization conflict does not arise in the same way as in (117).

6 Conclusion

In this paper, we have developed an analysis of discontinuous constituents in Iquito, both phrase-internally (i.e. in NPs and PPs) and under clause-internal movement to the irrealis and the subject position. We argued that it is possible to make sense of the range of different attested word orders with a distributed deletion analysis in which Copy Deletion applying to movement chains applies cyclically within the derivation, i.e. after each movement step, and the choice of what is deleted

is constrained by Cyclic Linearization. We observed that an overarching generalization for split constituents in both phrase-internal and phrase-external positions is that the possessum of a noun phrase is also displaced together with a determiner only if that determiner modifies the possessor of that possessum. We dubbed this the *Possessor Pied-Piping Generalization (PPG)*. We showed that the PPG follows naturally under the aforementioned distributed deletion analysis once we take into account an independent property of NPs/PPs in Iquito, namely that they constitute ‘second-position’ domains and therefore trigger roll-up movement of their respective complements. Assuming that such movements are obligatory allowed us to account for why the position of the determiner conditions the amount of material pronounced in the higher copy. A determiner associated with a possessor will undergo movement to the edge of its local possessum NP (deriving a split configuration), whereas a determiner modifying the possessum is base-generated higher with no NP/PP-internal movement required. The deletion algorithm we proposed is sensitive to whether or not a given sub-constituent of a moved phrase has participated in a split at a previous step and will privilege a different element for pronunciation in the current cycle if it has.

We also showed how the PPG holds for movement to the irrealis position. Previous work on Iquito had noted a typologically unusual fact about Iquito, namely its configurational marking of reality status by word order (Beier et al. 2011). We put forward a novel analysis of the so-called ‘irrealis position’ in Iquito as [EPP]-driven movement to an inner specifier of T. We argue that this accounts for various properties of irrealis marking, e.g. category neutrality, adjacency restrictions, and phonological gapping. A phrasal movement account is further motivated by the fact that the patterns of discontinuity found under movement to the irrealis position both parallel and extend those found within NPs and PPs. This parallelism is not captured by a competing analysis involving verb movement. In addition, we discussed a transitivity restriction that emerges with split NPs in subject position. We suggested that the ungrammaticality of split subjects of transitive verbs falls under a broader cross-linguistic generalization, namely the *Subject In-Situ Generalization* (Alexiadou & Anagnostopoulou 2001). To account for Iquito, we adopted Richards’s (2010) *Distinctness* analysis of the SSG.

The proposal in this paper has two main broader consequences for our understanding of grammar: First, it lends support to distributed deletion analyses of split constructions more generally since the intricate patterns in Iquito, the PPG in particular, fall out naturally in our analysis, unlike on competing theories such as sub-extraction and remnant movement. Second, it provides further evidence for an organization of grammar in which post-syntactic operations can, to a certain extent, be interleaved in the syntactic derivation. This position is very much in keeping with the spirit of Cyclic Linearization (Fox & Pesetsky 2005), but also more recent work such as Calabrese & Pescarini (2014) and Martinović (2019). These proposals, including the present one, lead to the conclusion that the syntax may in fact require more access to the output of the PF component of grammar than has often been assumed in Minimalist theorizing thus far.

References

- Abels, Klaus (2003). *Successive Cyclicity, Anti-Locality and Adposition Stranding*. PhD thesis, University of Connecticut.
- Abels, Klaus (2012). *Phases: An Essay on Cyclicity in Syntax*. de Gruyter: Berlin.

- Adger, David, Daniel Harbour & Laurel J. Watkins (2009). *Mirrors and Microparameters: Phrase Structure Beyond Free Word Order*. Cambridge University Press: Cambridge.
- Alexiadou, Artemis & Elena Anagnostopoulou (2001). The Subject-in-Situ Generalization and the Role of Case in Driving Computations. *Linguistic Inquiry* 32(2). 193–231.
- Alexopoulou, Theodora, Edit Doron & Caroline Heycock (2004). Broad Subjects and Clitic left Dislocation. In D. Adger, C. de Cat & G. Tsoulas (eds). *Peripheries: Syntactic Edges and their Effects*. Kluwer: Dordrecht. 329–358.
- Androutsopoulou, Antonia (1998). Split DPs, Focus and Scrambling in Modern Greek. In E. Curtis, J. Lyle & G. Webster (eds). *Proceedings of WCCFL 16*. CSLI: Stanford, CA. 1–16.
- Bailyn, John Frederick (2004). Generalized Inversion. *Natural Language and Linguistic Theory* 22(1). 1–50.
- Baker, Mark (1996). *The Polysynthesis Parameter*. Oxford University Press: New York.
- Barbiers, Sjef (2002). Remnant Stranding and the Theory of Movement. In A. Alexiadou, E. Anagnostopoulou, S. Barbiers & H.-M. Gärtner (eds). *Dimensions of Movement: From Features to Remnants*. John Benjamins: Amsterdam. 47–67.
- Bašić, Monika (2004). *Nominal subextraction and the Structure of NPs in Serbian and English*. Master's thesis, University of Tromsø
- Bašić, Monika (2009). Left Branch Extractions: A Remnant Movement Approach. In L. Subotić (ed.). *Novi Sad Generative Syntax Workshop 2: Proceedings, August 28-29, 2008*. Filozofski fakultet, University of Novi Sad: Novi Sad. 39–51.
- Beier, Christine, Cynthia Hansen, I-Wen Lai & Lev Michael (2011). Exploiting word order to express an inflectional category: Reality status in Iquito. *Linguistic Typology* 15(1). 65–99.
- Berger, Marcus (2017). Overt Movement as a Marker of (Ir)realis in Iquito. Talk given at the 22nd Workshop on the Structure and Constituency of the Languages of the Americas. University of British Columbia. April 21–23rd, 2017.
- Bobaljik, Jonathan David & Dianne Jonas (1996). Subject Positions and the Roles of TP. *Linguistic Inquiry* 27(2). 195–236.
- Bondarenko, Tatiana & Colin Davis (to appear). Concealed Pied-Piping in Russian: On Left Branch Extraction, Parasitic Gaps, and Beyond. *Syntax*
- Borsley, Robert D. & Ewa Jaworska (1988). A Note on Prepositions and Case Marking in Polish. *Linguistic Inquiry* 19(4). 685–691.
- Bošković, Željko (2005). On the Locality of Left-Branch Extraction and the Structure of NP. *Studia Linguistica* 59(1). 1–45.
- Bošković, Željko (2008). What Will You Have, DP or NP?. In E. Elfner & M. Walkow (eds). *Proceedings of NELS 37*. GLSA: Amherst, MA. 101–115.
- Bošković, Željko (2009). More On the No-DP Analysis of Article-less Languages. *Studia Linguistica* 63(2). 187–203.
- Bošković, Željko (2016). Getting Really Edgy: On the Edge of the Edge. *Linguistic Inquiry* 47(1). 1–33.
- Bresnan, Joan (1977). Variables in the Theory of Transformations. In P. W. Culicover, T. Wasow & A. Akmajian (eds). *Formal Syntax*. Academic Press: New York. 157–196.
- Bresnan, Joan (1978). Contraction and the Transformational Cycle in English. Indiana University Linguistics Club, Bloomington.
- Brown, Mark (2004a). Possession and Cliticization in Iquito. In M. Ettliger, N. Fleisher & M. Park-Doob (eds). *Proceedings of the 13th Annual Meeting of the Berkeley Linguistics Society*. 11–21.

- Brown, Mark (2004*b*). *Topics in Iquito Syntax: Word Order, Possession and Nominal Discontinuity*. Master's thesis, The University of Texas at Austin
- Bruening, Benjamin (2010). Language-Particular Syntactic Rules and Constraints: English Locative Inversion and *Do*-Support. *Language* 86(1). 43–84.
- Calabrese, Andrea & Diego Pescarini (2014). Clitic Metathesis in the Friulian Dialect of Forni di Sotto. *Probus* 26(2). 275–308.
- Casali, Roderic F. (1997). Vowel Elision in Hiatus Contexts: Which Vowel Goes?. *Language* 73(3). 493–533.
- Chomsky, Noam (1994). *Bare Phrase Structure*. MIT Working Papers in Linguistics: Cambridge, MA.
- Chomsky, Noam (1995). *The Minimalist Program*. MIT Press: Cambridge, MA.
- Chomsky, Noam (2000). Minimalist Inquiries: The Framework. In R. Martin, D. Michaels, J. Uriagereka & S. J. Keyser (eds). *Step by Step: Essays on Minimalist Syntax in Honor of Howard Lasnik*. MIT Press: Cambridge, MA. 89–155.
- Chomsky, Noam (2001). Derivation by Phase. In M. Kenstowicz (ed.). *Ken Hale: A Life in Language*. MIT Press: Cambridge, MA. 1–52.
- Chomsky, Noam & Howard Lasnik (1977). Filters and Control. *Linguistic Inquiry* 8(3). 425–504.
- Collins, Chris (1997). *Local Economy*. MIT Press: Cambridge, MA.
- Collins, Chris & Edward Stabler (2016). A Formalization of Minimalist Syntax. *Syntax* 19(1). 43–78.
- Collins, Chris & Phil Branigan (1997). Quotative Inversion. *Natural Language and Linguistic Theory* 15(1). 1–41.
- Corver, Norbert (1992). On Deriving Certain Left Branch Extraction Asymmetries: A Case Study in Parametric Syntax. In K. Broderick (ed.). *Proceedings of NELS 22*. GLSA: Amherst, MA. 67–84.
- Corver, Norbert (2017). Subextraction. In M. Everaert & H. C. van Riemsdijk (eds). *The Wiley-Blackwell Companion to Syntax*. 2 edn. Vol. 7. Wiley-Blackwell: Somerset, NJ. 4139–4189.
- Culicover, Peter W. & Robert D. Levine (2001). Stylistic Inversion in English: A Reconsideration. *Natural Language and Linguistic Theory* 19(2). 283–310.
- Dahlstrom, Amy (1987). Discontinuous constituents in Fox. In P. Kroeber & R. Moore (eds). *Native American Languages and Grammatical Typology*. Indiana University Linguistics Club: Bloomington. 53–73.
- Davis, Colin (2020*a*). Crossing and Stranding at Edges: On Intermediate Stranding and Phase Theory. *Glossa* 5(1). 17. 1–32.
- Davis, Colin (2020*b*). *The Linear Limitations of Syntactic Derivations*. PhD thesis, MIT.
- den Besten, Hans (1983). On the Interaction of Root Transformations and Lexical Deletive Rules. In W. Abraham (ed.). *On the Formal Syntax of Westgermania*. John Benjamins: Amsterdam. 47–131.
- den Besten, Hans (1985). The Ergative Hypothesis and Free Word Order in Dutch and German. In J. Toman (ed.). *Studies in German Grammar*. Foris: Dordrecht. 23–62.
- den Dikken, Marcel & Éva Dékány (2018). A Restriction on Recursion. *Syntax* 21(1). 37–71.
- Doggett, Teal (2004). *All Things Being Unequal: Locality in Movement*. PhD thesis, MIT.
- Doron, Edit & Caroline Heycock (1999). Filling and Licensing Multiple Specifiers. In D. Adger, S. Pintzuk, B. Plunkett & G. Tsoulas (eds). *Specifiers: Minimalist Perspectives*. Oxford University Press: Oxford. 69–89.
- Doron, Edit & Caroline Heycock (2010). In Support of Broad Subjects in Hebrew. *Lingua* 120(7). 1764–1776.

- Drummond, Alex, Norbert Hornstein & Howard Lasnik (2010). A Puzzle about P-Stranding and a Possible Solution. *Linguistic Inquiry* 41(4). 689–692.
- du Plessis, Hans (1977). Wh-Movement in Afrikaans. *Linguistic Inquiry* 8(4). 723–726.
- Erlewine, Michael Yoshitaka (2017). Why the Null Complementizer is Special in Complementizer-Trace Effects. In C. Halpert, H. Kotek & C. van Urk (eds). *A Pesky Set: Papers for David Pesetsky*. MITWPIL: Cambridge, MA. 371–380.
- Fanselow, Gisbert (1988). Aufspaltung von NPn und das Problem der ‘freien’ Wortstellung. *Linguistische Berichte* 114. 91–113.
- Fanselow, Gisbert & Caroline Féry (2006). Prosodic and Morphosyntactic Aspects of Noun Phrases: A Comparative Perspective. Ms. University of Potsdam.
- Fanselow, Gisbert & Caroline Féry (2013). A Comparative Perspective on Intervention Effects on Left Branch Extractions in Slavic. In W. Sulym, M. Smolij & C. Djakiw (eds). *Non Progređi Est Regredi. Festschrift für Alla Paslawska*. Pais: Lviv. 266–295.
- Fanselow, Gisbert & Damir Ćavar (2001). Remarks on the Economy of Pronunciation. In G. Müller & W. Sternefeld (eds). *Competition in Syntax*. de Gruyter: Berlin. 107–150.
- Fanselow, Gisbert & Damir Ćavar (2002). Distributed Deletion. In A. Alexiadou (ed.). *Theoretical Approaches to Universals*. John Benjamins: Amsterdam. 65–107.
- Fox, Danny & David Pesetsky (2005). Cyclic Linearization of Syntactic Structure. *Theoretical Linguistics* 31(1–2). 235–262.
- Franks, Steven & Ljiljana Progovac (1994). On the placement of Serbo-Croatian clitics. *Indiana Linguistic Studies* 7. 69–78.
- Haegeman, Liliane (1995). *The Syntax of Negation*. Cambridge University Press: Cambridge.
- Hansen, Cynthia (2006). *Adverbs and Phrase Structure in Iquito*. Master’s thesis, The University of Texas at Austin
- Hansen, Cynthia (2011). *Expressing Reality Status Through Word Order: Iquito Irrealis Constructions in Typological Perspective*. PhD thesis, The University of Texas at Austin.
- Hansen, Cynthia (2018). Subordinate and Interrogative Clause Negation in Iquito. *Linguistic Typology* 22(1). 119–163.
- Heck, Fabian & Anke Himmelreich (2017). Opaque Intervention. *Linguistic Inquiry* 48(1). 47–97.
- Heck, Fabian & Gereon Müller (2000). Successive-Cyclicality, Long-Distance Superiority and Local Optimization. In R. Billerey & B. D. Lillehaugen (eds). *Proceedings of WCCFL 19*. Cascadilla Press: Somerville, MA. 218–231.
- Hooper, Paul J. & Sandra A. Thompson (1980). Transitivity in Grammar and Discourse. *Language* 56(2). 251–299.
- Jenks, Peter (2011). *The Hidden Structure of Thai Noun Phrases*. PhD thesis, Harvard University.
- Johnson, Meredith & Bryan Rosen (2015). The Syntax of Discontinuous Noun Phrases in Algonquian Languages: Left Branch Extractions and Focus Movements. In M. Macaulay & J. R. Valentine (eds). *Papers of the 43rd Algonquian Conference*. SUNY Press: Albany, NY. 135–150.
- Kayne, Richard & Jean-Yves Pollock (1978). Stylistic Inversion, Successive-Cyclicality and Move NP in French. *Linguistic Inquiry* 9(4). 595–621.
- Kayne, Richard S. (2002). On Some Prepositions That Look DP-Internal: English *of* and French *de*. *Catalan Journal of Linguistics* 1. 71–115.
- Ko, Heejeong (2007). Asymmetries in Scrambling and Cyclic Linearization. *Linguistic Inquiry* 38(1). 49–83.

- Koopman, Hilda (2010). On Dutch *allemaal* and West Ulster English *all*. In J.-W. Zwart & M. de Vries (eds). *Structure Preserved: Studies in Syntax for Jan Koster*. John Benjamins: Amsterdam. 267–275.
- Kramer, Ruth (2010). The Amharic Definite Marker and the Syntax-Morphology Interface. *Syntax* 13(3). 196–240.
- Lai, I-Wen (2009). *Time in the Iquito Language*. PhD thesis, The University of Texas at Austin.
- Lakoff, George (1970). Global Rules. *Language* 46(3). 627–639.
- Landau, Idan (2011). Alleged Broad Subjects in Hebrew: A Rejoinder to Doron and Heycock (in press). *Lingua* 121(2). 129–141.
- Landau, Idan (2020). A Scope Argument Against T-to-C Movement in Sluicing. *Syntax* 23(4). 375–393.
- Lefebvre, Claire & Pieter Muysken (1988). *Mixed Categories: Nominalizations in Quechua*. Kluwer: Dordrecht.
- Leu, Thomas (2008). *What For Internally*. *Syntax* 11(1). 1–25.
- Little, Carol-Rose (2020). Left Branch Extraction, Object Shift, and Freezing Effects in Tumbalá Ch’ol. *Glossa* 5(1). 26. 1–29.
- Martinović, Martina (2019). Interleaving Syntax and Postsyntax: Spell-Out Before Syntactic Movement. *Syntax* 22(4). 378–418.
- Mchombo, Sam (2004). *The Syntax of Chichewa*. Cambridge University Press: Cambridge.
- Michael, Lev (2003). Posposiciones: Aspectos de su Sintaxis. In C. Beier & L. Michael (eds). *Estudios del Idioma Iquito 2003*. Module 5 (23 July 2003).
- Michael, Lev (2004a). El sistema discursivo de próximo-obviado. In C. Beier & L. Michael (eds). *Estudios del Idioma Iquito 2004, Tomo II*. Module 28 (9 August 2004).
- Michael, Lev (2004b). Frases determinantes discontinuas. In C. Beier & L. Michael (eds). *Estudios del Idioma Iquito 2004, Tomo II*. Module 12 (30 June 2004).
- Michael, Lev, Christine Beier, Jaime Pacaya Inuma, Ema Llona Yareja, Hermenegildo Díaz Cuyasa & Ligia Inuma Inuma (2019). *Iquito–English Dictionary*. Ediciones Abya Yala: .
- Müller, Gereon (2011). *Constraints on Displacement: A Phase-Based Approach*. John Benjamins: Amsterdam.
- Muysken, Pieter (1989). Predication Chains: Case and Argument Status in Quechua and Turkish. *Linguistic Inquiry*
- Ntelitheos, Dimitrios (2004). *Syntax of Elliptical and Discontinuous Nominals*. Master’s thesis, UCLA
- Nunes, Jairo (2001). Sideward Movement. *Linguistic Inquiry* 32(2). 303–344.
- Nunes, Jairo (2004). *Linearization of Chains and Sideward Movement*. MIT Press: Cambridge.
- Ott, Dennis (2012). *Local Instability: Split Topicalization and Quantifier Float in German*. de Gruyter: Berlin.
- Pereltsvaig, Asya (2008). Split Phrases in Colloquial Russian. *Studia Linguistica* 62(1). 5–38.
- Podobryaev, Alexander (2009). ‘Postposition Stranding’ and Related Phenomena in Russian. In G. Zybatow, U. Junghanns, D. Lenertová & P. Biskup (eds). *Studies in Formal Slavic Phonology, Morphology, Syntax, Semantics and Information Structure: Proceedings of FDSL 7, Leipzig 2007*. Peter Lang: Frankfurt a. M.. 197–208.
- Pollock, Jean-Yves (1989). Verb Movement, Universal Grammar and the Structure of IP. *Linguistic Inquiry* 20(3). 365–424.
- Postal, Paul M. (1972). On Some Rules That Are Not Successive Cyclic. *Linguistic Inquiry* 3(2). 211–222.
- Postal, Paul M. (2004). *Skeptical Linguistic Essays*. Oxford University Press: Oxford.

- Richards, Marc D. (2011). Deriving the Edge: What's in a Phase?. *Syntax* 14(1). 74–95.
- Richards, Norvin (2001). *Movement in Language: Interactions and Architectures*. Oxford University Press: Oxford.
- Richards, Norvin (2010). *Uttering Trees*. MIT Press: Cambridge, MA.
- Ross, John R. (1967). *Constraints on Variables in Syntax*. PhD thesis, MIT.
- Saah, Kofi K. (1994). *Studies in Akan Syntax, Acquisition and Sentence Processing*. PhD thesis, University of Ottawa.
- Sabbagh, Joseph (2007). Ordering and Linearizing Rightward Movement. *Natural Language and Linguistic Theory* 25(2). 349–401.
- Schultze-Berndt, Eva & Candide Simard (2012). Constraints on Noun Phrase Discontinuity in an Australian Language: The Role of Prosody and Information Structure. *Linguistics* 50(5). 1015–1058.
- Selkirk, Elisabeth (1972). *The Phrase Phonology of English and French*. PhD thesis, MIT.
- Siewierska, Anna (1984). Phrasal Discontinuity in Polish. *Australian Journal of Linguistics* 4(1). 57–71.
- Simpson, Andrew & Soyoung Park (2019). Strict vs. Free Word Order Patterns in Korean Nominal Phrases and Cyclic Linearization. *Studia Linguistica* 73(1). 139–174.
- Skopeteas, Stavros, Elisabeth Verhoeven & Gisbert Fanselow (to appear). Discontinuous Noun Phrases in Yucatec Maya. *Journal of Linguistics*
- Starke, Michal (2001). *Move Dissolves into Merge*. PhD thesis, University of Geneva.
- Szabolcsi, Anna (1983). The Possessor That Ran Away From Home. *The Linguistic Review* 3(1). 89–102.
- Valois, Daniel & Fernande Dupuis (1992). On the Status of Verbal Traces in French: The Case of Stylistic Inversion. In P. Hirschbühler & K. Koerner (eds). *Romance Languages and Modern Linguistic Theory*. John Benjamins: Amsterdam. 325–338.
- van Hoof, Hanneke (2006). Split Topicalization. In M. Everaert & H. van Riemsdijk (eds). *Blackwell Companion to Syntax*. 1 edn. Vol. 4. Blackwell: Oxford. 410–465.
- Zeijlstra, Hedde (2004). *Sentential Negation and Negative Concord*. PhD thesis, University of Amsterdam.