

Discontinuous Noun Phrases in Iquito

Andrew Murphy¹ and Brianna Wilson²

¹University of Potsdam

²The University of Chicago

andrew.murphy@uni-potsdam.de, briannawilson@uchicago.edu

October 2, 2023

Abstract

In this paper, we provide an account of the syntactic restrictions on noun phrase discontinuity in Iquito. In Iquito, noun phrases containing determiners that have undergone movement must have a discontinuous realization where the determiner strands the noun phrase. With moved possessive noun phrases, we find apparent pied-piping of the possessum in addition to the determiner only in case the determiner is semantically associated with the possessor. We argue that this ‘possessum pied-piping’ is determined by the syntactic attachment height of the determiner within the noun phrase. In doing so, we provide a novel way of restricting the mechanism of distributed deletion based on configurational properties of the noun phrase, rather than some information structural or phonological property. Furthermore, we show how extending this analysis to phrase-internal syntax also allows us to derive the apparently idiosyncratic word orders we find inside NPs and PPs, thereby providing a unified account of both phrase-level and the clause-level word order in Iquito.

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 of split NP constructions 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) of a discontinuously realized 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 kenohtamwihene 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 (Bošković 2005). 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).

In this paper, we focus on split NP constructions in the SVO language Iquito (Zaparoan; Northern Peru).¹ Unlike the languages mentioned above, split NP constructions in Iquito are only possible with demonstrative determiners. Furthermore, Iquito differs from other split NP languages in that, in the syntactic contexts where we find discontinuous noun phrases, that is, whenever a noun phrase containing a determiner undergoes displacement, the observed split is obligatory, not optional. Consider the examples in (2). Example (2a) provides a baseline SVO sentence without movement. In the example in (2b), there is displacement to a position between the subject and the verb. We observe that just the determiner is realized in the derived position and the associated NP is left behind. In this construction, discontinuous realization of the noun phrase is obligatory, as the ungrammatical parallel example in (2c) shows.

- (2) 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))

In the theoretical literature on split NP constructions, three main types of analysis have been pursued. 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 the effect

¹Iquito is a highly endangered language of the Zaparoan family that is 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.

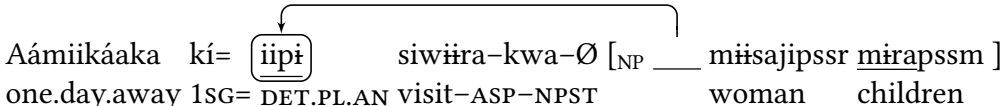
We use the following abbreviations in our glosses: 1=first person, 2=second person, 3=third person, AN=animate, ASP = aspect DET = determiner, DIM = diminutive, DPAST = distant past, EXCL = exclusive, IND = indicative, INCL=inclusive, IPFV = imperfective, LOC = locative adposition, MMTFV=momentary perfective, 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.

of scattered deletion applying to different sub-parts of the NP in its higher and lower occurrences (3c) (Wilder 1995; Fanselow & Ćavar 2002; Pereltsvaig 2008; Fanselow & Féry 2013; Davis 2020a; Bondarenko & Davis 2023).

- (3) a. *Extraction*
 Nu= iina₁ simiitaki [_{NP} t₁ simiimĩ]
 3SG= this reads book
- b. *Remnant movement*
 Nu= [_{NP} iina t₁]₂ simiitaki simiimĩ₁ t₂
 3SG= this reads book
- c. *Distributed deletion*
 Nu= [_{NP} iina simiimĩ] simiitaki [_{NP} iina simiimĩ]
 3SG= this reads book

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. Here, we find cases of apparent non-constituent movement that can be straightforwardly captured by a distributed deletion approach. Nevertheless, one of the major challenges facing this line of analysis is how to provide a restrictive theory that sufficiently constrains the application of scattered deletion in movement chains (see e.g. van Urk to appear). We will propose such a structural restriction for distributed deletion in Iquito and argue that the appearance of discontinuous constituents is determined solely on the basis of c-command relations in the base configuration, thereby providing a principled explanation of how distributed deletion can apply in a constrained manner.

To see this, we will preview our discussion of movement of possessive noun phrases containing determiners. In (4), we have a possessive 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 4.1), we observe that only the determiner moves to pre-verbal position in (4), just as in (2b).

- (4) 
 Aámiikáaka kí= iipi siwĩra-kwa-Ø [_{NP} ____ miisajipssr mirapssm]
 one.day.away 1SG= DET.PL.AN visit-ASP-NPST woman children
 ‘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 (5), both the determiner associated with the possessor ‘children’ (indicated by underlining) and the bare possessum are displaced.²

²In general, we will represent both displaced determiners and multiple displaced elements with a single gap at the left edge of the NP, which is where they would surface in a non-movement configuration. This is not intended to indicate their origin within the NP and not their precise base position within the NP.

- (5)
- | | | | | | | | |
|--------------|------|-----------|-------------|---------------|-----------------|-----------------|---|
| Aámiikáaka | kí= | iipi | sináakipssm | sikita-rii-ø | [_{NP} | mirajaárikapssr |] |
| one.day.away | 1SG= | DET.PL.AN | clothes | wash-ASP-NPST | | children.DIM | |
- ‘Tomorrow, I will wash the clothes of those children.’
- (Hansen 2011: 161, (3.102))

It is important to note that the moved elements in (5) do not plausibly form a constituent. Furthermore, the appearance of an apparent non-constituent in the moved position is correlated with an apparently independent property, namely the semantic association of the determiner involved in the split. We therefore arrive at the following descriptive generalization about split constructions in Iquito (Beier et al. 2011: 87; Hansen 2011: 137–138):

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

When a determiner is realized discontinuously from a possessive NP, the possessum appears together with the determiner in its moved position if the determiner modifies the possessor.

One of the contributions of the paper will be to show how the PPG is straightforwardly captured under a distributed deletion approach. The PPG follows, we argue, from the internal structural properties of the noun phrase, i.e. the c-command domain of the determiner. Given the syntax of the Iquito NP that we adopt, any element c-commanded by the base-position of the determiner will be protected from deletion in the lower copy of a movement dependency by virtue of a feature/diacritic, which we refer to as a ‘P-mark’ that is assigned to the sister of a determiner. This is what gives the effect of ‘pied-piping’ when an NP containing the determiner undergoes phrasal movement.

We argue that alternative approaches to split noun phrases either struggle to capture the non-constituent displacement (sub-extraction) or fail to provide a sufficiently constrained way of deriving it (remnant movement). Our analysis therefore builds on recent attempts to constrain the mechanism of distributed deletion that has been used to derive apparent non-constituent movement.

Moreover, we will illustrate how the PPG can provide insights into the somewhat puzzling word order restrictions found at the phrase-level, namely with recursive possession in noun phrases and also inside adpositional phrases. The internal syntax of such phrases has not been analyzed in previous work and the word order variation that we find here may seem, at first glance, to be rather idiosyncratic. We will show, however, that the patterns we find have some striking parallels to the patterns of those shown above for clause-level movement. We argue that this parallel falls out naturally once we assume that PPG is also active in these domains and that word order within both NPs and PPs are derived by phrasal movement. This serves to further add to the body of cross-linguistic evidence for structural parallels between clause-level and phrase-level syntax (see e.g. Bernstein 2001; Giusti 2006; Alexiadou et al. 2007). Furthermore, it provides additional support for the claim that some NP-internal word orders should be derived by phrasal movement (e.g. Cinque 2005).

The paper is structured as follows. We first establish the basic structure of possessive noun phrases in section 2, arguing that there is a ‘noun second’ requirement inside NPs that can result in split constructions. We also present our assumptions about how to derive split constructions by means of distributed deletion, as constrained by the structurally-determined assignment of a diacritic we call a ‘P-mark’. We then move on to discuss clause-level movement to the so-called

‘irrealis position’ in section 3. After clarifying our background assumptions about this movement, we illustrate how our theory of P-mark assignment straightforwardly derives the PPG. In section 4, we then go on to show how the PPG is also active within recursive possession structures inside NPs and how this is captured under our approach. We show that the same applies to PPs in section 5, whose internal word order is also subject to the PPG. Furthermore, we will show that our approach correctly predicts the patterns we find with PPs that are moved to the irrealis position. In section 6, we briefly discuss split NP constructions under movement to subject position that provide a counterexample to the general observation of the obligatoriness of NP splits in Iquito. We propose that the requirement for NP splits governed by P-marking appears to be overridden by an independent constraint that we argue falls under the well-known *Subject In-Situ Generalization*. Two further issues are addressed in section 7. First, we consider alternative approaches involving Left-Branch Extraction and remnant movement, which we argue cannot adequately derive the PPG. Second, the cross-linguistic implications of the analysis we developed for Iquito will be presented and discussed. Finally, section 8 concludes.

2 The structure of possessive noun phrases

In this section, we will present our assumptions about the structure of simple possessive noun phrases in Iquito. As we have already seen, while Iquito lacks a definite article, it has several demonstrative determiners given in the table in (7) taken from Hansen (2011: 105).

(7)

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

As is clear from the forms in this table, the respective determiners contain the suffixes *-na*, *-mi* and *-p̄i*, 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 relevant for our purposes are the plural animate demonstrative *iip̄i* and the general determiner *iina*, both of which can have either a proximal or distal meaning, depending on context. Bare nouns lacking a determiner can receive both definite and indefinite interpretations.

Relatedly, we will assume that Iquito noun phrases are NPs rather than DPs. This follows the typological generalization put forward by Bošković (2008, 2009) that languages that lack articles also lack a DP. Iquito also allows for extraction of demonstratives from noun phrases, as expected of an ‘NP language’ given Bošković’s NP/DP-Parameter. Both Beier et al. (2011) and Hansen (2011) argue that determiners in Iquito are undergoing a grammaticalization process from demonstratives to definite articles, but have not yet reached that stage yet, which further supports the synchronic status of Iquito as an NP language.

2.1 The structure of possession

Now, let us consider the structure of noun phrases containing a possessor. If the possessor is a bare noun, then it proceeds the possessum. This can be seen in (8a) where the possessor ‘woman’

precedes the possessum ‘animal’. When the possessor is modified by a determiner, however, only the determiner associated with the possessor ‘woman’ precedes the possessum, while the possessor itself appears postnominally (8b).

- (8) a. [NP *m̥saji kajinani*]
 woman animal
 ‘the animal of the woman’
 b. [NP *iina kajinani m̥saji*]
 DET animal woman
 ‘the animal of this woman’ (Michael 2004*b*: 6, (15a,b))

We argue that, descriptively speaking, Iquito has a ‘second position’ requirement for noun phrases, what we might call an ‘N2-requirement’ in reference to the well-known V2-requirement in several Germanic languages (den Besten 1983). We propose to analyze the second position requirement in NPs as the result of the head of the noun phrase bearing an [EPP] feature which requires a phrase to be merged as its specifier. Furthermore, we assume that possessors are always base-generated as the complement of the possessum noun, as shown in the trees in (9). In order to check the [EPP] feature, the possessor moves to the specifier of N.³ With bare possessors, this leads to the observed word order in (9a), whereas a phrase containing a determiner (9b) 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 section 2.2).⁴

³ Throughout the paper, we will 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, in line with our proposal that Iquito is an NP language. Another reason for this is a practical one: Since some of 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, or even if determiners were assumed to head a DP projection after all. Given the minimal 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 has a more richly-articulated structure involving a *nP* projection, for example. We omit any such details here.

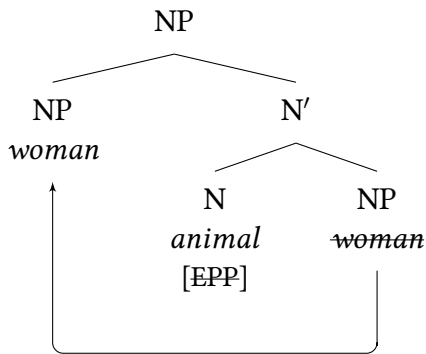
A related point pertains to the phasal status of the noun phrase. As a reviewer points out, we require that deletion apply to an embedded NP in (8). In the course of our discussion, we will encounter more complex examples in which deletion applies within several levels of embedding. The reviewer mentions that this could be seen as incompatible with the view that the NP constitutes a phasal domain, in line with conclusions reached in Davis (2020*b*) and Sabbagh (2007), but contra Bošković (2005). Aside from this consideration, nothing major in our analysis hinges on this assumption, however.

⁴Further evidence for this 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).

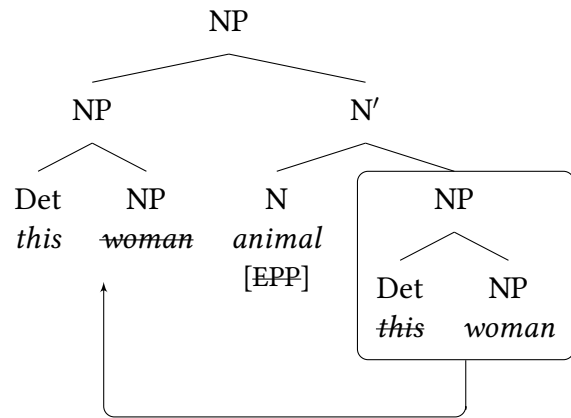
- (i) a. *Aámiikáaka ku=atitii-yaa-kura* [*nasi kamaraa-ni*]
 one.day.away 1SG=begin-IPFV-RPST field clear-NMLZ
 ‘Yesterday I started to clear the field.’
 b. *Aámiikáaka ku=atitii-yaa-kura* [*iina kamaraa-ni nasi*]
 one.day.away 1SG=begin-IPFV-RPST DET clear-NMLZ field
 ‘Yesterday I started to clear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

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

(9) a. *m̄isaji kajinani*
 woman animal
 'the woman's animal'



b. *iina kajinani m̄isaji*
 DET animal woman
 'this woman's animal'



It is worth mentioning that the alternative assumption that possessors are arguments of some higher functional head (e.g. PossP) cannot straightforwardly capture the relatedness of these generalizations. Consider (10) as potential alternative base structures for the examples in (9). While the base-generated order in (10a) gives us the correct surface structure without further ado, (10b) would have to involve multiple movements both of the possessor and the possessum to derive the order corresponding to *this animal woman*.

(10) a. $[_{PossP} [_{NP} \text{woman}] [_{Poss'} Poss [_{NP} \text{animal}]]]$
 b. $[_{PossP} [_{NP} \text{this woman}] [_{Poss'} Poss [_{NP} \text{animal}]]]$

As such, the two surface word orders for (10) 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, coupled with the independently-motivated observation that movement of an NP containing a determiner always leads to a split construction.

Finally, we will discuss cases in which the determiner modifies the possessum rather than the possessor, as in 'this animal of the woman'. The structure we would expect would be one in which the determiner merges directly with the possessum NP in which there has been movement of the possessor.

(11) $[_{NP} \text{this} [_{NP} \text{woman} [_{N'} [_{N} \text{animal}] \text{woman}]]]$

Surprisingly, Hansen (2011: 127–128) notes that the Iquito consultants only interpret noun phrases of the form 'DET NP NP' as having the determiner modify the possessor rather than the possessum. Surprisingly, Hansen (2011: 127–128) notes that the Iquito consultants only interpret noun phrases of the form 'DET NP NP' as having the determiner modify the possessor rather than the possessum. So, the string in (12) could only be interpreted as if woman is the possessum and animal is the possessor and the determiner modifies the possessor (12a). It cannot be interpreted as if it has the

(ii) $[_{NP} [_{NP} \text{iina nasi}] [_{N'} [_{N} [_{V} \text{kamaraa}] \text{-ni}_{[EPP]}] [_{NP} \text{iina nasi}]]]$
 DET clear -NMLZ field

underlying structure in (11) where woman is the possessor and animal is the possessum and the determiner modifies the possessum (12b).

- (12) [NP *this woman animal*]
 a. ‘the woman of this animal’
 b. *‘this animal of the woman’

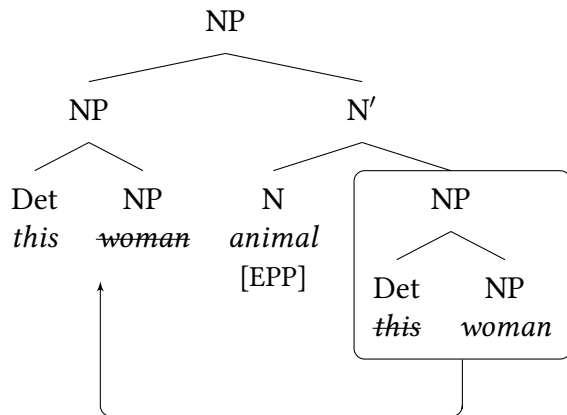
We assume that structures in which the possessum is modified by a determiner are syntactically well-formed, but there is some, at present poorly-understood, speaker preference to assign the NP-internal string in (12) the interpretation in (12a) over (12b).

Importantly, this does not appear to be a deep grammatical restriction, however. The structure in (11) must be licensed by the grammar, because the interpretation in (12b) is available when the NP in question has undergone a split. We have already seen this in (4), repeated below.

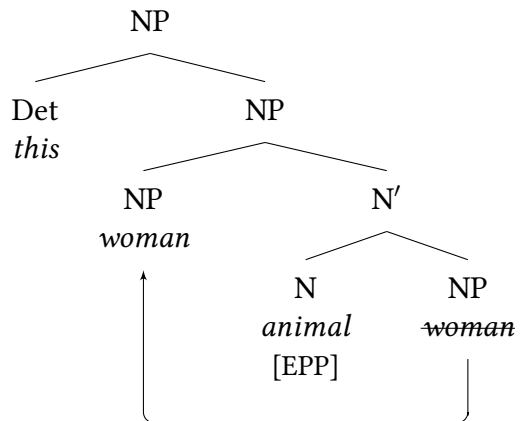
- (13)
- | | | | | | | | | |
|--|--|------|-----------|----------------|-----|--------|----------|---|
| | Aámiikáaka | kí= | iipi | siwĩira-kwa-Ø | [NP | mĩsaji | mĩra |] |
| | one.day.away | 1SG= | DET.PL.AN | visit-ASP-NPST | | woman | children | |
| | ‘Tomorrow, I will go there to visit <u>these children</u> of the woman.’ | | | | | | | |
| | (Hansen 2011: 155, (3.89)) | | | | | | | |

Here, it is the possessum ‘children’ that is modified by a determiner. The underlying structure for such an example must therefore involve the structure in (11). We will therefore for assume that both of the following structures are licensed in the grammar in principle:

(14) *Determiner modifying possessor*



(15) *Determiner modifying possessum*



As we have seen, the NP-internal word of possessive phrases can be accounted for by assuming that the possessor moves. When the possessor contains a determiner, as in (14), the moved NP must be realized discontinuously. This is a general property of noun phrases containing determiners in Iquito, however we have not yet specified what exactly leads to the obligatory split constructions in the language. This will be addressed in the following section.

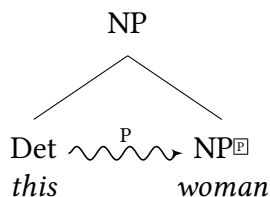
by the presence of a demonstrative determiner within the noun phrase. Furthermore, recall that the amount of material stranded in the split was dependent on the semantic association of the determiner (the PPG). As such, we do not see how one can successfully apply Fanselow & Ćavar’s (2002) analysis to the Iquito data, since, aside from the question of explaining the PPG, it is hard to identify what distinct formal features could be at play here and what projections they move to.

Alternative proposals have suggested that a different featural distinction is responsible for triggering a split construction. Hinterhölzl (2000, 2002) argues that only pied-piped material may be deleted in a higher copy, while the locus of the movement-triggering feature may not. Van Urk (to appear) makes a similar proposal for Imere and other predicate fronting languages, arguing that a constraint *REALIZEGOAL* mandates deletion of all material in the higher copy that does not bear the feature responsible for movement of the verb phrase (for van Urk, this is a verbal category feature [*iV*]). It is not easy to see how this approach could be extended to Iquito, however. We could assume that the determiner fulfils a similar function in hosting the feature driving movement of the noun phrase (e.g. [*iN/D*]), however it remains unclear how we could account for the PPG on this kind of analysis. It would seem to require that the possessum also bear the relevant movement triggering feature only when the determiner originates with the possessor. The motivation for such a stipulation remains far from obvious.

Instead, we propose an alternative syntactically-determined approach to restricting distributed deletion in Iquito that does not rely on the featural content of the moved phrase. Recall that the conditioning factor for obligatory split NP constructions in Iquito is the presence of a determiner. In other words, whenever a moved NP contains a determiner, a discontinuous realization of that NP is mandatory. We model this by assuming that determiners in Iquito have the inherent lexical property of assigning a special diacritic to their complement. We refer to this diacritic as \overline{P} (or as a ‘P-mark’) and represent the P-mark visually as in (18). It is important to mention that splits are only triggered by determiners in Iquito. Moved NPs containing adjectives, numerals and other modifiers do not result in splits. In languages where this is the case, P-mark assignment would be available optionally and for a wider range of lexical items (see section 7.2).

(18) *P-marking in Iquito*

A determiner assigns a P-mark to its sister.



The language-specific property of P-marking by determiners will derive both the obligatoriness of NP splits in Iquito and also the structural sensitivity of the PPG. A language-specific stipulation of this kind is unavoidable in any account of why NP splits are mandatory with determiners in Iquito, unlike most other split NP languages. The diacritic \overline{P} can be thought of as an instruction to PF with regard to how deletion applies within a given movement chain. As we will show, the assignment of P-marks must take place in the syntax. P-mark assignment could easily be implemented as valuation of some morphosyntactic feature [*PRON*: \square] under Agree on all terminal

nodes in the c-command domain of the determiner.⁵ In what follows, we adopt the ‘P-mark’ diacritic view in (18), while acknowledging that there are other ways of implementing this.

In line with previous work, we assume distributed deletion to be a special instance of the more general Copy Deletion operation involved in generating displacement (Chomsky 1995; Nunes 2004). Assuming the Copy Theory of Movement, an explicit PF algorithm is required in order to determine which elements in a movement chain are pronounced (see e.g. Nunes 2004; Landau 2006; Hein 2018). We propose the formulation of *Copy Deletion* in (19).

(19) *Copy Deletion*

In a movement chain $\langle \alpha, \beta \rangle$ where α is the higher copy and β is the lower copy,

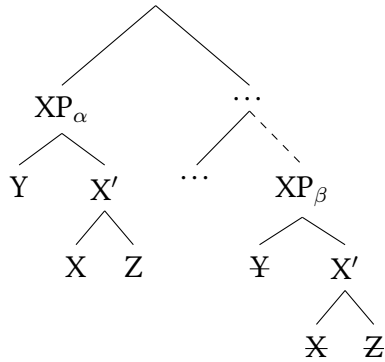
- a. delete all terminals in α which are (reflexively-)dominated by a P-marked node,
- b. delete all terminals in β which are not (reflexively-)dominated by a P-marked node.

An important assumption, which we return to in the following section, is that the algorithm in (19) applies cyclically in the derivation, i.e. after each movement step. This is why Copy Deletion is formulated over exactly two copies created by a single application of Internal Merge. The result of the deletion specification assigned by Copy Deletion is preserved at later stages of the derivation. This formulation of Copy Deletion allows us to derive both regular instances of full deletion of a lower copy, as well as distributed deletion determined by P-mark assignment.

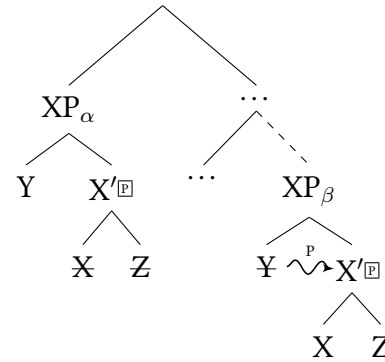
To see how (19) works, consider the abstract derivations in (20) and (21) in which an XP has undergone movement. In (20), the moved phrase does not contain any occurrences of \overline{P} . Consequently, no deletion occurs in the higher copy, as per (19a). In the lower copy, all terminals are deleted due to the absence of any P-marked nodes. This derives the general case for overt displacement: When a phrase moves, the lower copy is deleted. The situation will be different if a particular head has a P-marking property, however. In (21), the Y head assigns a P-mark to its sister X' . This P-mark is also present on the higher copy of XP. When this phrase undergoes displacement, all terminals dominated by X' in the higher copy (XP_α) will be deleted, as per (19a). In the lower copy (XP_β), those same terminals are protected from deletion by (19b), with only Y being deleted. This yields a split construction: ‘Y ... X Z’.

⁵This follows our overarching analytical generalization about the PPG that any previously undeleted nodes in the c-command domain of the determiner are protected from deletion in the lower copy. As a reviewer notes, this kind of multiple Agree is similar to what is required by Agree-based analysis of concord in the nominal domain (cf. Danon 2011). On the Agree-based implementation of this idea, the definition of Copy Deletion in (19) would not be ‘delete all terminal nodes (reflexively-)dominated by a P-marked node’, but instead just delete all terminals without the feature [PRON:+] (i.e. all those which did not enter an Agree relation with the c-commanding determiner). On this view, syntactically-determined ‘deletion’ could be valuation of the [PRON: □] feature as ‘–’, with all other features valued ‘+’ by default upon Transfer to the PF interface. For reasons of space, we do not follow this particular implementation here, but it is perfectly compatible with our overall analysis.

(20)



(21)



This implementation of Copy Deletion automatically derives the complementarity of deletion that is inherently assumed by most approaches to distributed deletion, i.e. deleting an instance of an element in the higher copy of a movement dependency necessarily implies pronouncing it in the lower one, and vice versa (see e.g. Wilder 1995: 292).

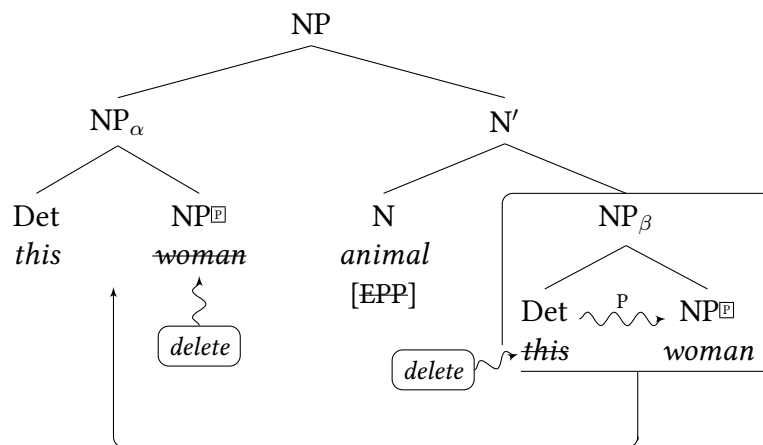
Now, let us see how these assumptions derive a simple NP-internal split with a determiner modifying a possessor. Recall example (8b) repeated below as (22).

(22) [NP iina kajinani m̄isaji]
 DET animal woman
 ‘the animal of this woman’

(Michael 2004b: 6, (15b))

As (23) shows, the possessor ‘this woman’ moves to the specifier of the possessum ‘animal’ to check its [EPP]-feature. Since the determiner assigns a P-mark to its sister, the P-marked NP ‘woman’ is marked for deletion in the higher copy and protected from deletion in the lower copy, given the Copy Deletion algorithm we have proposed. This correctly derives the NP-internal split.

(23)



Thus, whenever a determiner is contained in an NP, it will necessarily assign a P-mark to some subpart of that NP, necessarily leading to a split construction if the NP undergoes movement. This derives the basic generalization about Iquito that split constructions are obligatory whenever the moved NP contains a determiner (see section 7.2 for discussion of the cross-linguistic implications of this analysis). With these assumptions in place, we will now show how this particular approach

to split constructions derives the *Possessum Pied-Piping Generalization* that we find with movement at the clause level.

3 Split NPs with irrealis movement

Having clarified the internal structure of possessive noun phrases and how split NP constructions are derived in our approach, we now turn to the movement at the level of the clause. In order to show how our analysis accounts for the PPG, we must first clarify what exactly the relevant movement process is that leads to discontinuity, namely ‘irrealis movement’.

3.1 The irrealis position

One important driver of clause-level movement in Iquito is the marking of reality status. In Iquito, finite clauses are obligatorily marked for reality status, which is an inflectional category that distinguishes between realized events and unrealized events (Mithun 1995; Elliott 2000). Most importantly for our purposes, irrealis mood is marked by a change in word order, which appears to involve clause-level movement of a post-verbal constituent to a position between the subject and verb. Given this typologically unusual strategy of marking mood as well as its pervasiveness in the Iquito language, reality status marking has been extremely well-documented in Iquito and the topic of much of the previous Iquito literature. While the foundational work (e.g. Lai 2009; Hansen 2011; Beier et al. 2011) focused on the word order changes that appear in irrealis mood and argued that word order was the sole exponent of reality status marking, more recent discoveries have brought to light that, in addition to the obligatory word order distinction between realis and irrealis, there is also i) a tonal melody that accompanies irrealis mood, and ii) a vowel length difference in subject pronouns (Beier & Michael 2022). In the present paper, we focus on the word order distinction between realis and irrealis, which we argue to involve clause-level movement and, subsequently, examine how this movement leads to another environment for NP and PP splits.

First, we will briefly illustrate the word order distinction between realis and irrealis clauses. Irrealis clauses are marked by the intervention of a single constituent between the subject and verb, while realis clauses require the adjacency of subject and verb. For example, the contrast in (24) is between the canonical SVO order in (24a) (realis mood) and the alternative SOV order in (24b), where the placement of the object between the subject and verb marks irrealis mood.

(24) *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))

As shown in the introduction of the paper (example (2)), another option is for part of a split noun phrase to appear in the irrealis position, as shown by (25b).

(25) *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))

Furthermore, it is important to mention that it is not possible to split an adjective from its modified noun, for example. As (26) shows, the adjective and noun appear together in the irrealis position.

- (26) Aamikáaka Iima [NP paápaaja umáana] asa-rii-Ø (*irrealis*)
one.day.away Ema fish big eat-MMTPFV-NPST
'Tomorrow Ema will eat a big fish.' (Beier et al. 2011: 79, (24b))

In addition to nominals, we see that a constituent of any category may occupy the position between the subject and the verb in an irrealis clause. For example, an intervening adverb between the subject and the verb also leads to an obligatory irrealis interpretation (27b).

(27) *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 (28), where an adpositional phrase fills the irrealis position.

(28) *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))

It is also 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 (29a). The negative particle *kaa* can surface between the subject and the verb, leading to an irrealis interpretation (29b).

(29) *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**] paa*ji*-**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 (30) where *kaa* is a phrasal projection in Spec-NegP and *-ji* is the head of Neg.

- (30) ... [NegP [XP *kaa*] [Neg' [Neg *-ji*] [_vP ...]]]

Given the examples introduced thus far, we can make the following descriptive generalization about the word order component of irrealis marking:⁶

- (31) *Irrealis generalization*

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

At this point, it is also important to emphasize that Beier & Michael (2022) have recently shown that, in addition to the word order requirement in (31), there is also a tonal change involved in the marking of irrealis mood in Iquito. In the realis clause in (32a), there are no elements with lexical tone and no irrealis tonal melody, so the only tone expressed is the right-edge boundary tone (H%), which is realized on the verbal argument. In the corresponding irrealis clause in (32b), there is an additional HLL tonal melody. The H docks to the final mora of the subject, and the LL docks to the first two mora of the element in the irrealis position.

- (32) a. [naafikitaki núú]
 Naa= jikita-Ø-ki [NP nuu] H%
 3PL= wash-PFV-NPST 3SG
 ‘They washed it (today).’ (realis)

⁶A relevant question one might ask is what happens when there is no moveable constituent other than the subject in the clause. For example, what happens in the case of an intransitive clause that does not contain any adverbs? Beier et al. (2011: 91) present a revealing example of this kind, which we have revised to accommodate an updated analysis where the subject pronoun has an underlying long vowel [pɨ̃] (doubled vowels represent a long vowel). 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 in example (i). The sequence /ɨ̃i/ (that would occur at the end of the subject and the start of the verb) is resolved by deleting the second vowel (while preserving its length) to derive [ɨ̃] (see Casali 1997 on deletion as a hiatus repair). Evidence that its length is preserved comes from the fact that while the long vowel of *pɨ̃* is optionally shortened in some environments, in this instance, the vowel is obligatorily long. Turning to the corresponding irrealis example in (ii), we see that it has the same underlying representation as (i), but there is no hiatus resolution. The lack of hiatus resolution in (ii) is indicative of some intervening null material in the irrealis position in line with the generalization in (31).

- | | | | |
|-----|---|------|--|
| (i) | [pɨ̃.kwa.ki]
Pɨ̃=iikwa-ki-Ø
1PL.INCL=go-PFV-NPST
‘We went.’ (realis) | (ii) | [pɨ̃.í.kwa.ki]
Pɨ̃=iikwa-ki-Ø
1PL.INCL=go-PFV-NPST
‘We will go.’ (irrealis) |
|-----|---|------|--|

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

- b. [náá nùùfikitakí]
 Naa^{HLL} [NP nuu=] fíkita-Ø-ki H%
 3PL IRR 3SG wash-PFV-NPST
 ‘They will wash it (today).’ (*irrealis*) (Beier & Michael 2022: 7, (10), (11))

With the empirical generalizations about irrealis marking now in place, we move on to our analysis of the irrealis position.

3.2 Analysis of irrealis movement

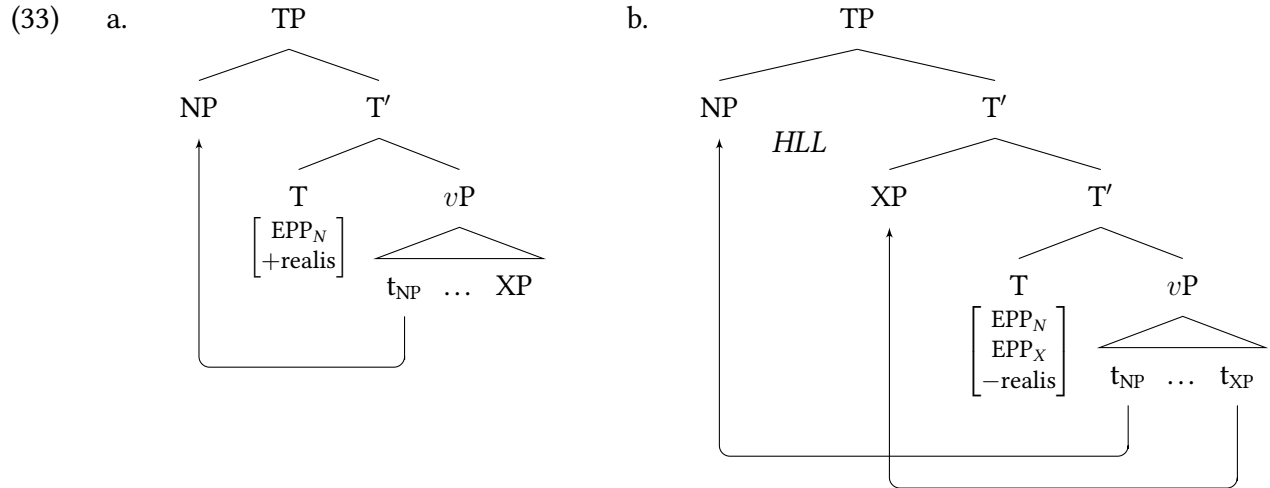
In order to capture the generalization in (31), we propose a movement-based account of the irrealis position. Specifically, we argue the irrealis position is an inner specifier of T. In realis clauses, which show SVO order, we assume that the subject is in Spec-TP while the verb moves to T (33a). Movement of the subject is triggered by an [EPP] feature on T that triggers movement of the closest NP to its specifier. In irrealis clauses, the T head bears an additional [EPP] feature, which triggers movement of a second phrasal constituent to an inner specifier of T (33b).⁷ We take this to be part of the lexical specification of irrealis T. Importantly, this additional [EPP] feature is category-neutral, meaning that it can attract a phrase of any category to an inner specifier of T. In (33), we emphasize this difference in the category-sensitivity of the features by using a subscript [EPP_X] for the category-neutral variant in (33). A category-neutral [EPP] feature on T has been proposed for other languages, e.g. for stylistic fronting in Icelandic (Holmberg 2000, 2006; Ott 2018), and similar inversion constructions in Finnish (Holmberg 2005), Russian (Bailyn 2004), Czech (Kučerova 2012) and English (Collins 1997).

⁷Multiple specifiers of T have been proposed for languages with so-called ‘broad subjects’ (Doron & Heycock 1999, 2010), e.g. for multiple nominative constructions in Japanese (i) (also see Davis 2021: 320–322 for an argument for multiple specifiers of T in English).

- (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))

A reviewer also points out that the assumption of an additional [EPP] brings up a question of restrictiveness: Could there be a language with three or more [EPP] features on a given head? In principle, this may be the case. We wish to think about the additional [EPP] on T in Iquito as part of the realization of irrealis mood in the language (in conjunction with the tonal changes mentioned above). In some sense, this additional [EPP] is then linked to the feature [–realis], i.e. as a kind of ‘configurational exponence’. Although not fully worked out, the intuition we are pursuing here is that an additional [EPP] feature on a head such as T would only be posited if it serves to mark some grammatical distinction (e.g. realis vs. irrealis). This may ultimately be one way to constrain the postulation of such additional features cross-linguistically.



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 addition, we indicate that the floating HLL tonal melody that is responsible for the tonal changes observed in the irrealis must somehow also be incorporated into the structure in (33b). One possibility, raised by a reviewer, would be to say that the tonal melody occupies an additional syntactic position between the subject and the irrealis XP, i.e. yet another inner specifier of T (this could potentially be an explanation for the effect noted in footnote 6). Alternatively, one could view the floating tonal melody as a regular concatenative exponent of T whose association is regulated by constraints in the phonology (Trommer to appear). What is clear is that its effects are best captured by assuming that it occupies the position in (33b). Since this tonal change is not crucial for our analysis, we do not commit to either of these particular implementations.

The multiple specifier analysis in (33) has the potential of being able to account for adjacency restrictions found in both realis and irrealis clauses. For example, it is ungrammatical for an adverb (or any other phrase) to intervene between the subject and the verb in a realis clause (34).

- (34) *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))

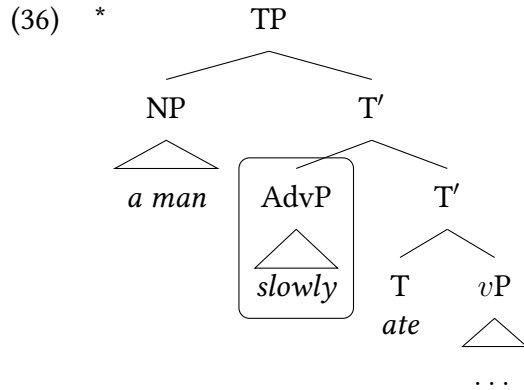
We suggest that this can be captured by a general constraint ruling out bar-level adjunction (35), an assumption often assumed to follow from Bare Phrase Structure (see e.g. Chomsky 1994; also see Landau 2020: 378 for a more general version of this constraint). Recall, as outlined above, that the subject occupies Spec-TP and the finite verb moves to T.⁸

⁸An anonymous reviewer points out that this view might be challenged by the fact that adverbs may intervene between modals/auxiliaries in English (i), even though the most natural order appears to be one in which the adverb follows the modal.

- (i) The man probably can climb the fence.

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

This constraint then rules out (34) straightforwardly:



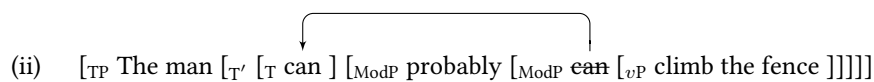
Importantly, we find the same restriction in irrealis clauses. While irrealis clauses are characterized by the obligatory presence of a constituent between the subject and the verb, Beier et al. (2011) show that no other constituent, e.g. an adverb, may occur between the phrase in the irrealis position and either the finite verb (37a) or the subject (37b).

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

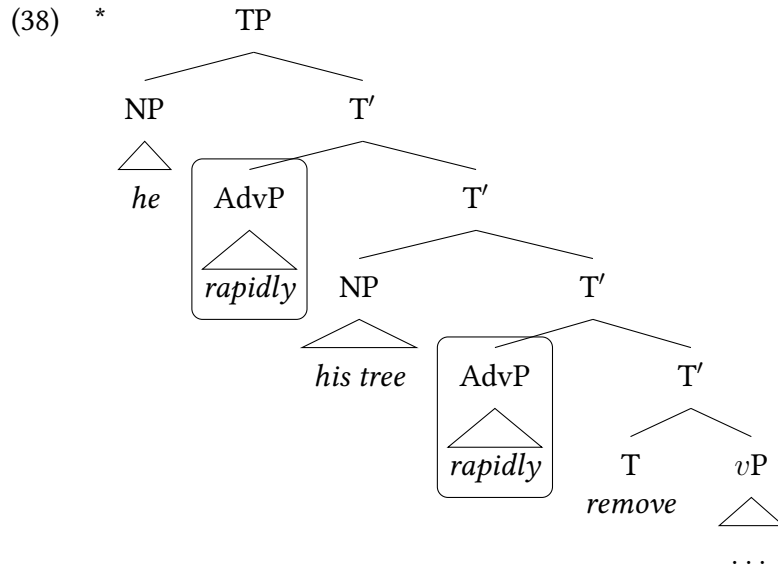
(Beier et al. 2011: 90, (55))

On our analysis, the irrealis position is an inner specifier of T. For this reason, the same ban on adjunction to T' in (36) also extends to the irrealis examples in (37), as shown in (38).

For cases such as (i), one could assume that the modal typically undergoes head movement from the head of ModP (to which the adverb is adjoined) to T, rather than being base-generated in T directly (a conclusion supported by scope interactions with adverbs and negation; see Ernst 2002; Iatridou & Zeijlstra 2013):



In the relatively marked word order in (i), we can simply assume that the head movement step in (i) is optional. This might be driven by the need for the modal to remain within the scope of the adverb. Our claim is that the ban on bar-level adjunction works as a diagnostic for Iquito since the verb is always realized in T. Consequently, no phrase may ever intervene between the subject and the main verb in Iquito, unlike in (ii).



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.

This is not the case on alternative approaches. For example, it has been proposed that the distinction between realis and irrealis word order is derived by head movement rather than phrasal movement (see Brown 2004*b*, Hansen 2006 and Berger 2017). On this view, the verb raises to T in realis clauses (39a), while this movement is absent in irrealis clauses (39b).

(39) *Alternative verb movement analysis of irrealis word order*

- a. $[_{TP} \text{Iima } [_{T'} [_T [_V \text{kapiki}]]] [_{VP} [_{NP} \text{asúraaja}] t_V]]]$ (*realis*)
 Ema cook manioc
 ‘Ema cooked manioc.’
- b. $[_{TP} \text{Iima } [_{T'} [_T \emptyset] [_{VP} [_{NP} \text{asúraaja}] [_V \text{kapiki}]]]]$ (*irrealis*)
 Ema manioc cook
 ‘Ema will cook manioc.’

Here, one could assume that $[-\text{realis}]$ T lacks the feature relevant for head movement of the verb to T (in contrast to having an [EPP] feature as in our analysis). This approach faces some problems though. First, in order to derive (39b), 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 (im)possibility of intervening constituents between the subject and the verb, including the phenomenon of ‘possessum pied-piping’. If the verb remains low in irrealis clauses (39b), then it is unclear why there should be a ban on adjunction to the verb phrase leading to the adjacency restrictions discussed above. Finally, split NPs in the irrealis clauses are entirely unexpected given the structure in (39b) where the verb does not move. On this analysis, the irrealis position is the base position, a fact that makes examples with a postverbal stranded NP difficult to analyze.

3.3 Split NPs in the irrealis position

With these assumptions about irrealis movement in place, let us now return to how we derive split NPs at the clause level. Recall that there are two patterns we find with irrealis clauses where the object is a possessive NP containing a determiner (see Brown 2004*a*; Hansen 2011 for further examples). In (40a), the determiner is associated with the possessum and appears alone in the irrealis position. In (40b), the determiner modifies the possessor and both the possessum and the determiner occupy the irrealis position, a case of what we have termed ‘possessum pied-piping’.

- (40) a. Aámiikáaka kí= iipi siwĩira-kwa-Ø [NP ____ mĩsaji mĩra]
 one.day.away 1SG= DET.PL.AN visit-ASP-NPST woman children
 ‘Tomorrow, I will go there to visit these children of the woman.’
 (Hansen 2011: 155, (3.89))

- b. Aámiikáaka kí= iipi sinaaki sikita-rii-Ø [NP ____ mĩra-jaarika]
 one.day.away 1SG= DET.PL.AN clothes wash-ASP-NPST children.-DIM
 ‘Tomorrow, I will wash the clothes of these children.’
 (Hansen 2011: 161, (3.102))

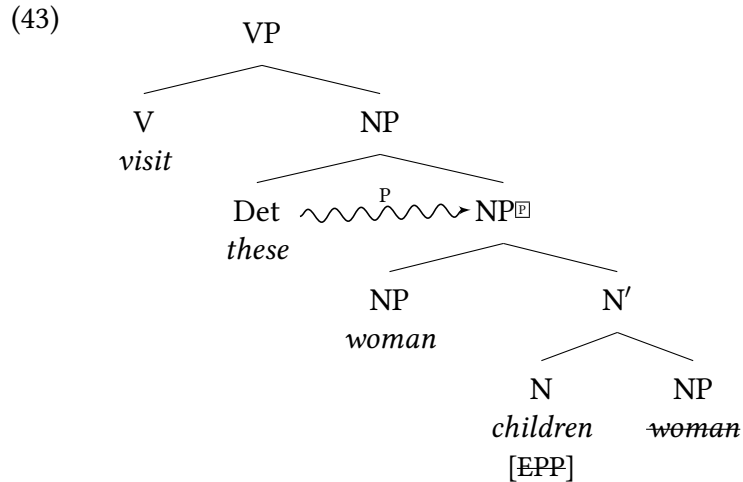
To capture this observation descriptively, recall the formulation of the PPG in (41).

- (41) *Possessum pied-piping generalization (PPG)*
 When a determiner is realized discontinuously from a possessive NP, the possessum appears together with the determiner in its moved position if the determiner modifies the possessor.

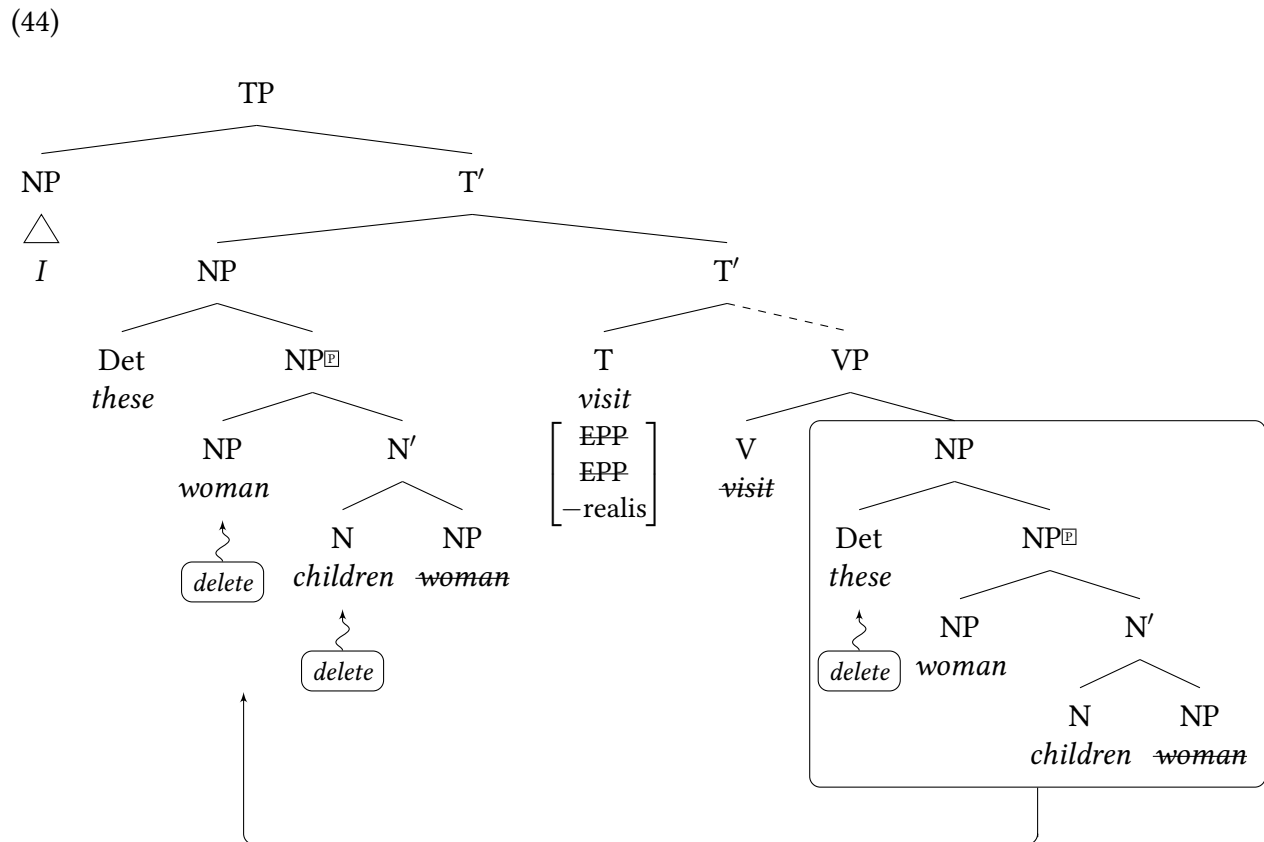
We are now in a position to see how our assumptions about the internal structure of the NP and the P-marking approach to NP splits can derive this generalization straightforwardly.

First, let us consider what happens when the determiner modifies the possessum. The pre-movement structure for (40a), repeated in (42), is given in (43). The entire NP is merged as the direct object of the verb. Within the NP, the bare possessor ‘woman’ has undergone movement to the edge of the noun phrase headed by the possessum ‘children’ with its lower copy being marked for deletion. The entire possessum NP is modified by the determiner ‘these’, which assigns a P-mark to its sister (the possessum NP).

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



Subsequently, this NP is moved to the irrealis position as an inner specifier of T to check its additional [EPP] feature (44).

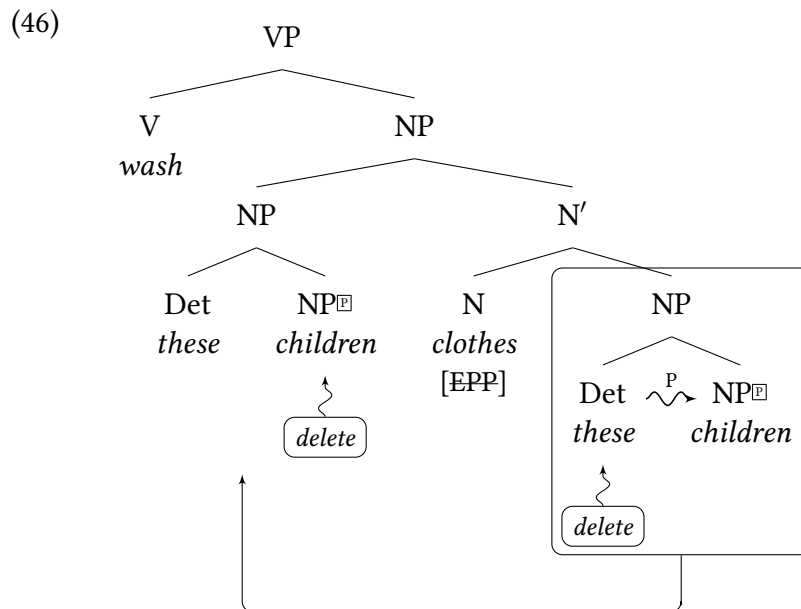


After this movement, the copy deletion algorithm applies again. Recall that the general idea is that all material that is not (reflexively-)dominated by a P-marked in the lower copy will be deleted. In (44), this is just 'these' in the lower copy. Conversely, only terminal nodes that are dominated by a P-marked node will be deleted. This leads to deletion of everything but the determiner 'these' in the higher copy. As such, the word order we derive in (44) just yields displacement of the determiner but no possessum pied-piping.

Now let us turn to why the situation is different if the determiner modifies the possessor. In an example such as (40b), repeated below as (45), the determiner is associated with the possessor ‘children’. Under movement to this irrealis position, the possessum is pied-piped along with the determiner.

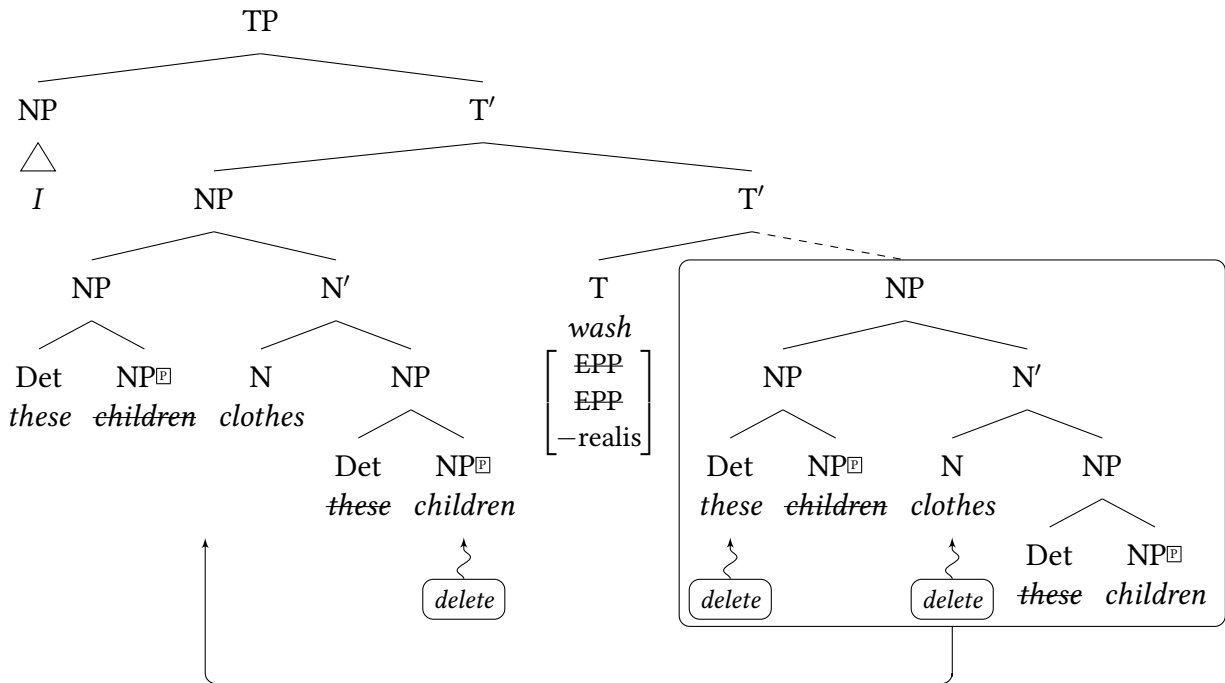
- (45) Aámiikáaka kí= iipi sinaaki sikita-r̥i-∅ [NP m̥ira-jaarika]
 one.day.away 1SG= DET.PL.AN clothes wash-ASP-NPST children.-DIM
 ‘Tomorrow, I will wash the clothes of these children.’

In the pre-movement structure of the NP in (45), the determiner is associated with the possessor ‘children’, assigning it a P-mark. When the possessor moves to the edge of the possessum NP, this triggers a split in the familiar fashion, with ‘children’ pronounced in the lower copy and deleted in the higher one (46).



Subsequently, this NP moves to the irrealis position, with any deletion marks from previous cycles inherited. Here, the copy deletion algorithm we proposed will delete any terminals in the lower copy that are not (reflexively-)dominated by a P-marked node. In this case, the lower instance ‘children’ is the only P-marked terminal and all other previously undeleted terminal nodes in the lower copy are marked for deletion. In the higher copy, we find the opposite scenario: only P-marked nodes are deleted. Since the lower instance of ‘children’ is the only undeleted P-marked node, it is marked for deletion while everything else in the higher copy is pronounced, including the possessum. This is what gives rise to the effect of possessum pied-piping.

(47)



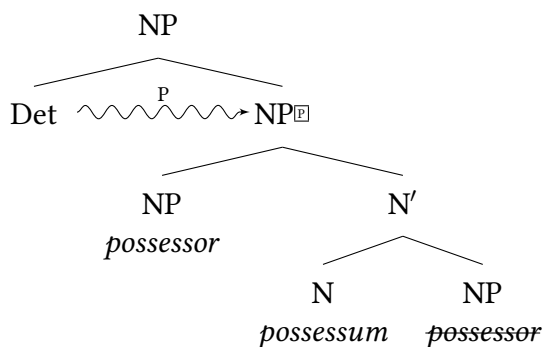
As we have seen, this analysis successfully derives the PPG as it is stated in (48).

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

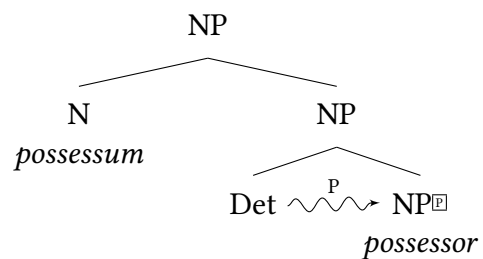
When a determiner is realized discontinuously from a possessive NP, the possessum appears together with the determiner in its moved position if the determiner modifies the possessor.

It is worth considering for a moment how the present analysis achieves this. Since the domain for deletion is determined by P-marking, which itself corresponds to the c-command domain of the determiner, 'possessum pied-piping' arises whenever the possessum is not contained in the c-command domain of the determiner. Assuming that the semantic association of the determiner directly correlates with its attachment position, then modification of the possessor implies a lower attachment site and therefore a smaller c-command domain that does not include the possessum. This can be seen in the two abstract structures below.

(49) Determiner associated w/ possessum:



Determiner associated w/ possessor:



A determiner modifying the possessum implies a relatively high attachment position from which the possessum is contained in its c-command domain. This will cause the possessum to be P-marked and, as a result, protected from deletion in the lower copy.

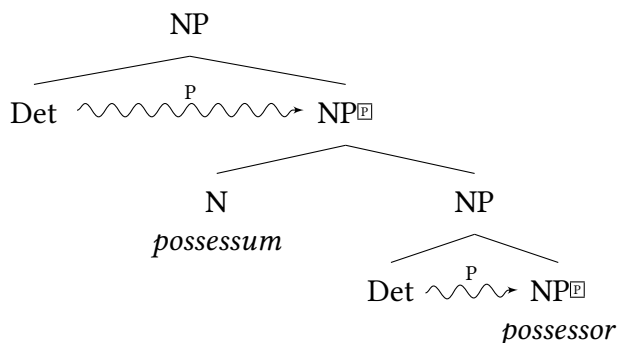
Furthermore, the representations in (49) also highlight an important point that was mentioned earlier, namely that Copy Deletion, or at least the determination of what elements undergo deletion, must apply cyclically, i.e. in the derivation. The reason for this can be seen in the structure for the determiner modifying the possessum. By virtue of being dominated by a P-marked node, the lower copy of the moved possessor should be immune to deletion, similar to the possessum. The difference here is, given the assumption of cyclic structure building, this movement took place before the determiner was incorporated into the structure. For this reason, the non-pronunciation of the lower copy of the possessor must precede P-marking on the NP node since this would preclude its deletion given the copy deletion algorithm in (19). If we waited until the entire structure is complete, then we would predict the possessor to be pronounced twice in such cases. Appealing to derivational timing, however, allows us to avoid this issue.

As we can see, this analysis successfully derives the phenomenon of ‘possessum pied-piping’. However, ‘pied-piping’ is somewhat of a misnomer from the point of view of this analysis, as what is really at stake is whether the possessum falls inside the domain of immunity from deletion in the lower copies that is defined by c-command domain of the determiner. Consequently, we could equally define the phenomenon of possessum pied-piping in terms of ‘protection from deletion in the lower copy’. This is the core insight of analysis, as we have presented it. If a given terminal node is not in the c-command domain of a determiner, then it will remain unprotected from deletion in the lower copy and, by virtue of the complementarity of distributed deletion, be pronounced in the higher copy.

3.4 Multiple determiners

This alternative conception of the PPG may actually prove to be more insightful in some cases. We have not yet discussed whether it is possible for the both the possessor and the possessum to be modified by a determiner. Given our assumptions so far, it is clear what the prediction would be. Even though we normally expect to find possessum pied-piping when just the possessor is modified by a determiner (due to the lack of P-marking of the possessum), if the possessum is also associated with a distinct determiner, the possibility of possessum pied-piping should disappear due to the fact the possessum will also be P-marked. This is shown abstractly in (50).

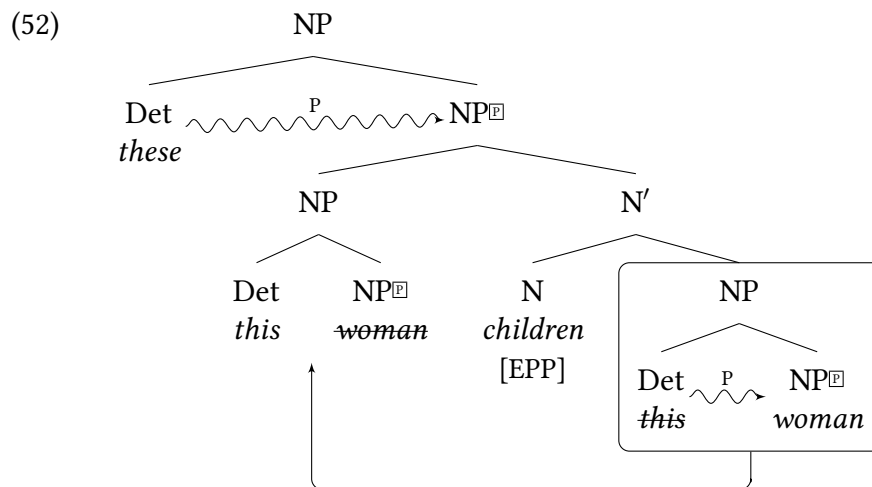
(50) Determiner associated w/ both possessor and possessum:



Such constructions are attested in Iquito. The examples in (51) are taken from Hansen (2011). In (51a), we cannot easily tell which noun the displaced determiner modifies due to the lack of agreement with either noun, though (51b) makes this clearer where the plural/animacy agreement clearly shows that it is associated with the possessum.⁹

- (51) a. Iina máaya_i, nu_i=iina irikatájuu-rii-Ø [NP ___ iina iimina ikwaáni]
 DET child 3SG= DET repair-PFV-NPST DET canoe man
 ‘This child, it will repair this canoe of this man.’
- b. Aámiikáaka kí=iipí kariinii-rii-Ø [NP ___ iina mira mĩsáji]
 one.day.away 1SG DET.PL.AN care.for-PFV-NPST DET children woman
 ‘Tomorrow, I will care for these children of this woman.’
 (Hansen 2011: 163, (3.104); 164, (3.109))

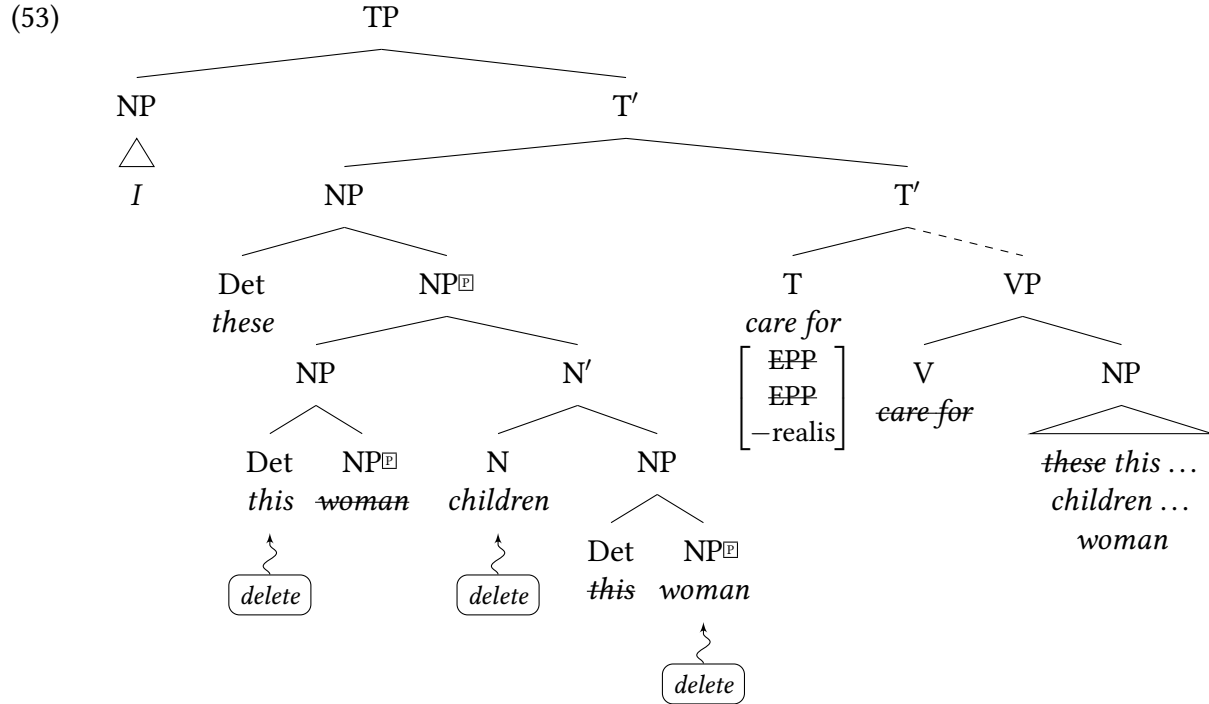
Below, we provide the analysis for (51b). First, we have to build the object NP ‘these children of this woman’. The determiner ‘these’ merges with the entire possessum NP constituent, assigning a P-mark to it. The possessor is assigned a P-mark by the determiner ‘this’ in addition to being dominated by the P-marked NP node. The possessor moves across the possessum, stranding the NP ‘woman’ in the familiar way. This accounts for the word order inside the stranded NP in (51b).



This NP is merged as the object of the verb *kariinii* (‘care for’) and subsequently moves to the irrealis position. Here, the copy deletion algorithm says to delete any P-marked elements in the

⁹Hansen (2011: 163) initially refers to constructions such as (51a) as ‘determiner doubling’, however the translation given for (51a) makes it clear that actually both the possessor and possessum are each associated with a separate determiner. Hansen (2011: 167) subsequently states that ‘when the determiner occurs in both the irrealis position and after the verb, then both the possessor and the possessum are interpreted as definite’, which we interpret to mean they are each syntactically modified by a determiner, as the distinct forms in (51b) make apparent. Furthermore, this putative ‘determiner doubling’ is claimed to be restricted to possessive noun phrases (Hansen 2011: 164), which makes sense if each determiner is actually modifying a separate noun in all of these cases.

highest copy, which corresponds to everything except the determiner ‘these’ which is associated with the possessum. Given the complementarity of deletion, this determiner, by virtue of being the only non-P-marked terminal that was not previously marked for deletion, is now deleted in the lower copy with all other P-marked terminals protected.



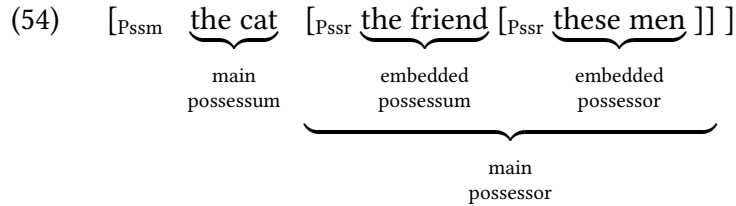
In a certain respect, the multiple determiner constructions are therefore the exception that prove the rule. The PPG implies that possessum pied-piping happens whenever the possessor is modified by a determiner. But as we have seen, this is a necessary but not a sufficient condition to possessum pied-piping. It must also be the case that the possessum is *not* modified by a determiner. This additional factor makes sense if it is the configurational properties of the noun phrase that regulate how much material is pronounced in the higher phrase – if a terminal is not c-commanded by a determiner, then it will be pronounced in the higher copy. Discontinuities in Iquito arise whenever part of an NP is c-commanded by a determiner and therefore dominated by a P-marked node.

As we have shown, this approach provides a straightforward account of NP splits under movement to the irrealis position. However, the effects of the PPG go much deeper in the syntax of Iquito. As we will show, this generalization is active in constraining word order in other domains such as NP- and PP-internal word order. Furthermore, given the assumption of generalized second-position movement within these domains, we will show that the analysis outlined above allows us to make sense of what otherwise seems like puzzling word order restrictions outside the clausal domain.

4 NP-internal word order

In this section, we turn to the word orders we find inside complex possession structure in Iquito and how these also fall under the PPG. Before presenting the data, let us first clarify some of

the terminology we will use to talk about these possessive structures. In (54), we show the basic semantic subordination relations that hold in recursive possession structures of the kind found in Iquito, e.g. ‘the cat of the friend of these men’. We call the constituent corresponding to ‘the 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 ‘the friend’, which we refer to as the *embedded possessum*.



With this terminology in mind, we now turn to the possible NP-internal word orders in Iquito.

4.1 Recursive possession in NPs

In cases with recursive possessors without any determiners such as (55), we find that the main possessor ‘the friend of the men’ precedes the main possessum *miisi* (‘cat’), marked in boldface. Within the main possessor, the embedded possessor ‘men’ also precedes its associated possessum ‘friend’.

- (55) $[_{NP} \text{ikwani-wiya kujimani } \mathbf{miisi}]$
 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 (55), the correct word order depends on which noun the determiner is associated with (Michael 2003: 9). In (56), 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’). Furthermore, the embedded possessor *misaji* (‘woman’) precedes the embedded possessum *mirajaarika* (‘children’).

- (56) $[_{NP} \text{iipi } \mathbf{miisi} \text{ misaji } \text{mira-jaarika}]$
 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 (57), both the determiner *iipi* from the embedded possessor and the embedded possessum *akuniita* (‘friend’) precede the main possessum *sapatu* (‘shoe’).

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

The possible NP-internal word orders we have seen above are summarized abstractly in (58) together with what we assume to be the underlying structures.

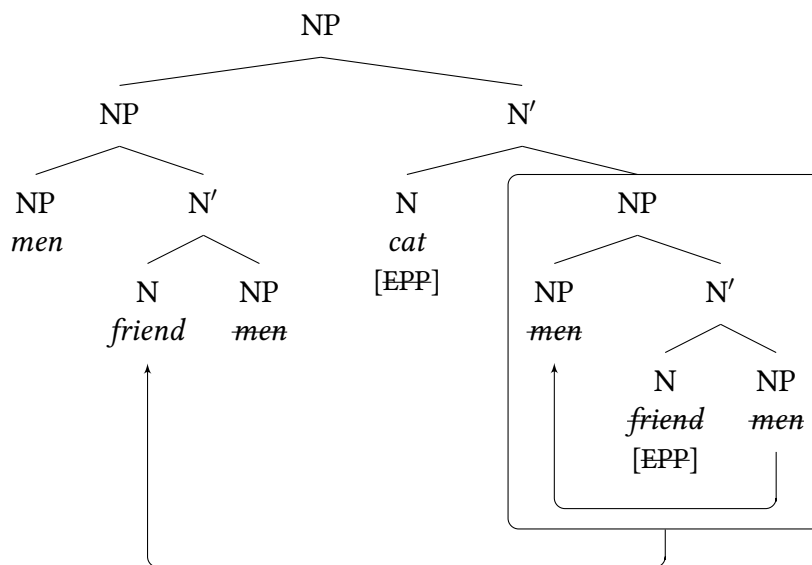
(58)	Underlying structure	Surface word order	
a.	[_{NP} animal [_{NP} woman]]	<i>woman animal</i>	(8a)
b.	[_{NP} animal [_{NP} this woman]]	<i>this animal woman</i>	(8b)
c.	[_{NP} cat [_{NP} friend [_{NP} men]]	<i>men friend cat</i>	(55)
d.	[_{NP} cat [_{NP} these children [_{NP} woman]]]]	<i>these cat woman children</i>	(56)
e.	[_{NP} shoe [_{NP} friend [_{NP} these men]]]]	<i>these friend shoe men</i>	(57)

Here, we clearly see another effect of the PPG by comparing (58d) and (58e). The embedded possessum precedes the main possessum only if the embedded possessor is modified by a determiner, as in (58e). This is a PPG effect with respect to the main possessum if we assume that there is movement of the possessor to the specifier of the highest noun (i.e. main possessum). Here, possessum pied-piping is entirely noun phrase internal, with the main possessum now taking the role of irrealis T in the analysis presented in the preceding section. In what follows, we will demonstrate how our analysis of the PPG naturally extends to the apparently idiosyncratic word orders with recursive possessors.

4.2 Deriving NP-internal splits

Now, let us now walk through the derivations of the recursive possession constructions discussed in the preceding section. We will first take the example without any determiners in (55), repeated as (59). First, the complex possessor phrase ‘friend of the men’ is created, 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 rolls up to prenominal position as shown in the tree below.

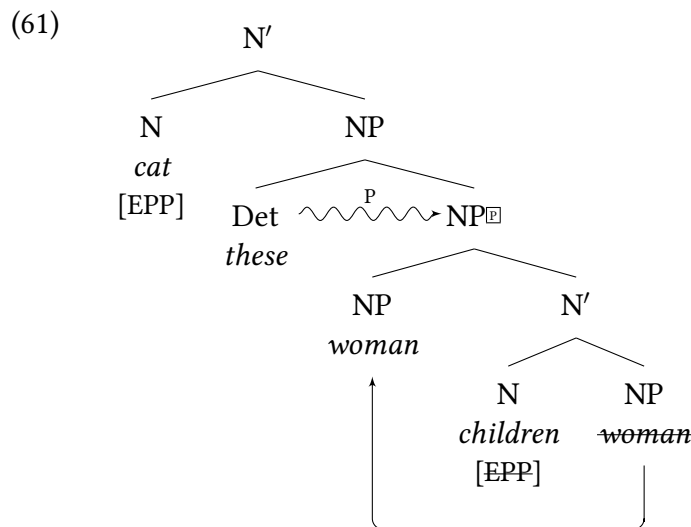
- (59) ikwani-wiya kujimani miisi
 man-PL friend cat
 ‘the cat of the friend of the men’ (the men’s friend’s cat) (Michael 2003: 9, (36))



Turning to the examples with determiners, let us first consider a case where the determiner modifies the embedded possessum, as in (60). As we would expect there is no pied-piping of the embedded possessum, only the determiner is realized in the derived position above the main possessum ‘cat’.

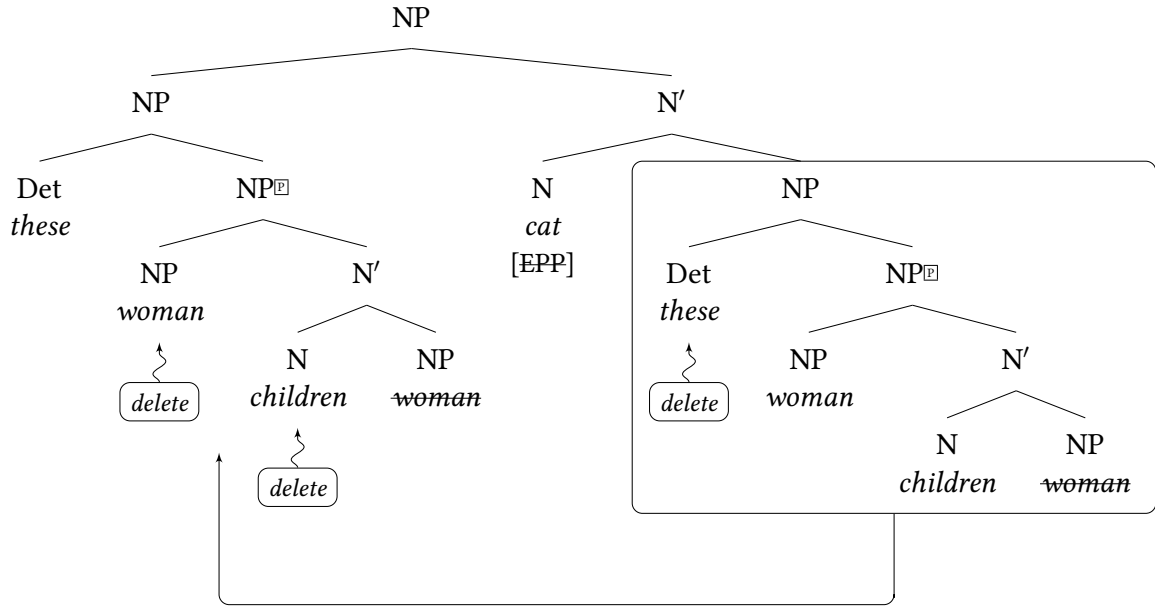
- (60) $[\text{NP } \underline{iipi} \quad \text{miisi miisaji } \underline{mira-jaarika}]$
 DET.PL.AN cat woman child-DIM
 ‘the cat of these children of the woman’ (Michael 2003: 9, (39))
 [cat [these children [woman]]] → *these cat woman children*

Going from the bottom up, we first create the main possessor ‘these children of the woman’. The embedded possessor is bare (‘woman’) and merged as the sister of the embedded possessum ‘children’. Given that every N bears an [EPP] feature, the possessor moves to the specifier of the possessum NP. Subsequently, the determiner is merged with this phrase, assigning a P-mark to its sister constituent. After the structure in has been built, this phrase is merged as the possessor of the main possessum ‘cat’. Again, the head of this newly created NP bears an [EPP]-feature, thereby requiring movement of its complement to its specifier.



When the phrase moves, as in (62), the Copy Deletion algorithm in (19) requires that all terminals not dominated by a P-marked node are deleted in the lower copy (terminals that were marked for deletion at a previous derivational step retain this status). This is just the determiner, since both the embedded possessum and possessor are dominated by the P-marked sister of ‘these’. In the higher copy, only those terminals dominated by a P-marked node are marked for deletion. These are ‘woman’ and ‘children’.

(62)



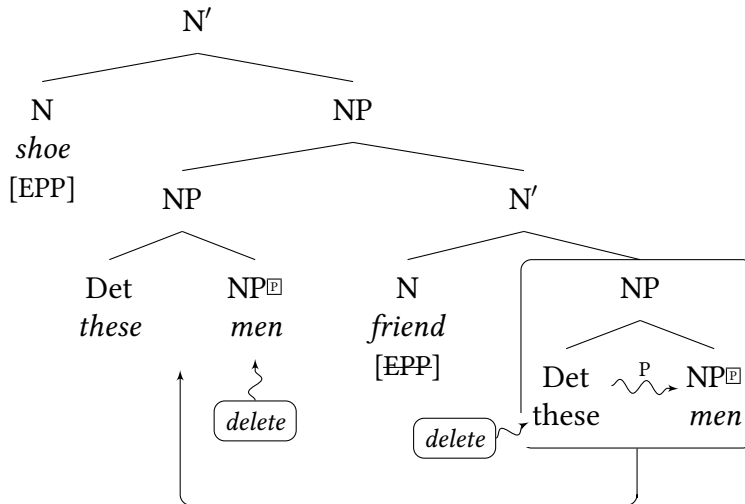
Consequently, we derive the order *these cat woman children*, which is the desired order. There is no ‘possessum pied-piping’ here because the embedded possessum ‘children’ is in the c-command domain of the determiner and therefore protected from deletion in the lower copy.

As we would expect, things are different when the determiner modifies the embedded possessor. In (63), the determiner is associated with the embedded possessor ‘men’ and, in the surface string, both the determiner and the embedded possessum ‘friend’ precede the main possessum ‘shoe’, an instance of possessum pied-piping.

- (63) [NP iipi akuniita sapatu ikwani-wuiya]
DET.PL.AN friend shoe man-PL
‘the shoe of the friend of these men’ (Michael 2003: 9, (39))
[shoe [friend [these men]]] → *these friend shoe men*

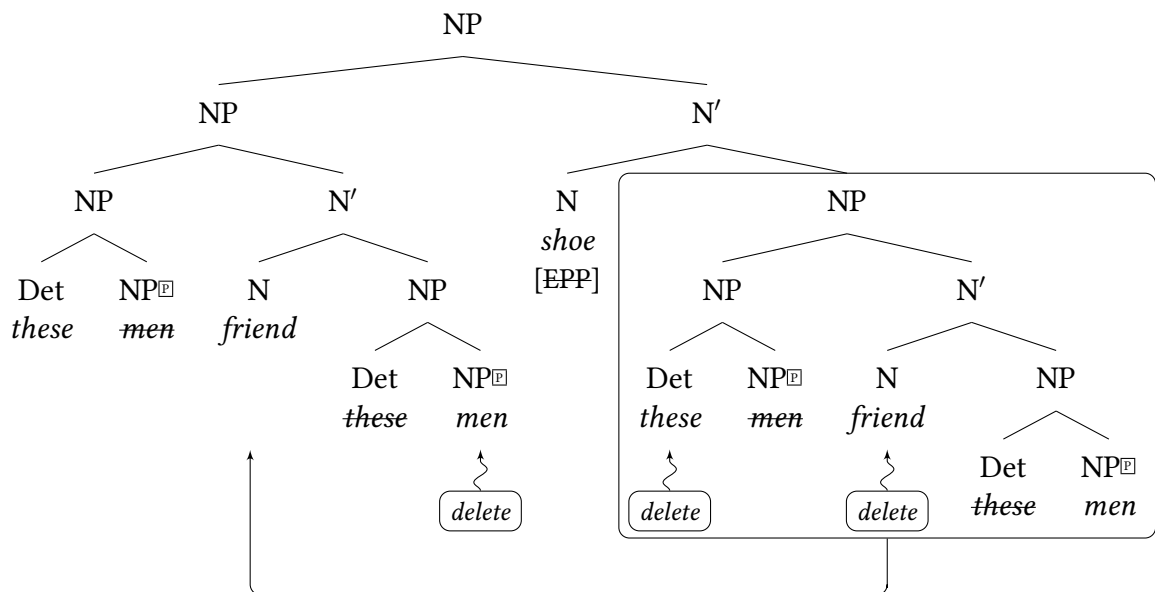
Let us first consider the structure of the embedded possessor. The determiner is merged with the possessor to form an NP. Det then assigns a P-mark to its complement. This NP is then merged as the complement to the embedded possessum ‘friend’. This NP is also a second-position domain, so the possessor moves to the specifier of the NP projected by the possessum. Given the Copy Deletion algorithm, a split configuration is derived. This NP is then embedded as the possessor of the main possessum ‘shoe’, with all P-marks and previously established deletion specifications inherited. Like all NPs in Iquito, the head of this phrase bears an [EPP]-feature requirement movement to its specifier.

(64)



When the complex possessor moves, we now see the effect of the PPG. The Copy Deletion algorithm tells us to delete all previously undeleted non-P-marked terminals in the lower copy. In this structural configuration, the determiner only c-commands its sister (the embedded possessor 'men') and therefore does not protect the possessum 'friend' from deletion in the lower copy. Relatedly, the absence of a P-marked node dominating the possessum in the higher copy means that deletion of the possessum 'friend' is not licensed. Instead, only the previously undeleted P-marked instance of the possessor 'men' is marked for non-pronunciation in the higher copy. This yields the surface string *these friend shoe men*, an instance of 'possessum pied-piping'.

(65)



It is therefore striking that the PPG is not only crucial in regulating word order at the clause-level but also within the noun phrase. If we assume, as we have proposed, that there is roll-up movement of possessors at each level of the NP, then what may appear to be idiosyncratic word orders within NP fall out exactly as predicted given the PPG and our approach to deriving it.

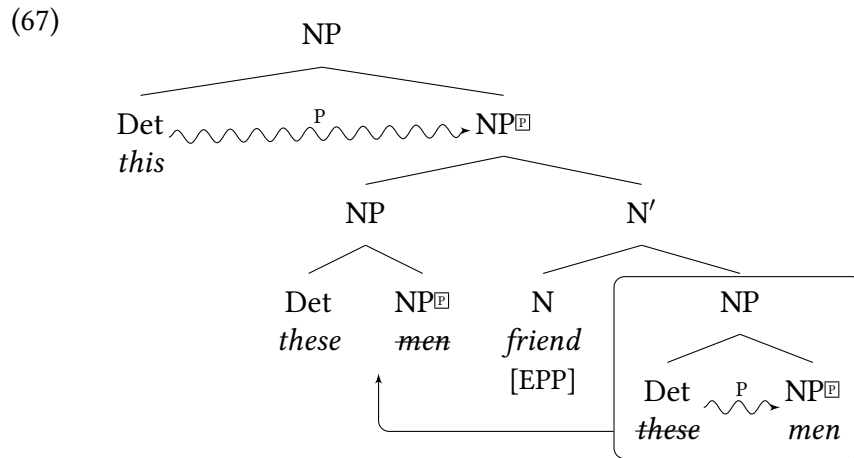
4.3 Multiple determiners within NP

At this point, one might wonder whether it is possible for both the embedded possessum and the embedded possessor of an NP to be simultaneously modified by determiners, as saw in section 3.4 for the clause-level. This is not straightforward to answer. While Michael (2003) does contains examples of this kind, such as (66), Lev Michael (p.c.) informs us that these examples were difficult to elicit and that the degree to which they are actually acceptable is unclear.

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

One possibility is that these structures are licensed by the grammar, but have a low level of acceptability for reasons for processing (though it is not conclusive whether this is the correct interpretation of the data). Given this, the validity of such examples such as (66) remains uncertain.

With this said, however, for the purposes of evaluating the predictions of the present proposal, it is clear that (66) is exactly what our analysis would predict if such constructions are indeed possible. To see this more clearly, let us walk through a sample derivation. In this first step (67), the embedded possessor is modified by the determiner ‘these’ and undergoes movement to the edge of the possessum NP, deriving a split. Subsequently, the determiner modifying the possessum ‘this’ merges with the possessum NP.



Importantly, ‘these’, ‘friend’ and ‘men’ are all (reflexively) dominated by P-marked nodes. The expectation is therefore that both will be preserved in the lower copy, as shown in (68).

more complicated. If the complement to the adposition is modified by a determiner, then the noun phrase is split across the adposition. The determiner precedes the adposition while the associated noun phrase follows it (70). This is comparable to examples of possessive noun phrases such as (8b), where the possessum intervenes just like the adposition does here.

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

As (71) shows, if the complement of the adposition is a possessive NP, then both the possessor and the possessum precede the adposition in that order, again this is parallel to NP-internal examples such as (55).

- (71) 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 (71), but with a determiner associated with the possessor *ikwani* (‘man’), we find that both the determiner and the possessum *amiiku* (‘friend’) precede the adposition (72). This is parallel to the example in (57) and again reminiscent of the PPG.

- (72) 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))

Unfortunately, we do not have an example parallel 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 (73), analogous where only the determiner is pronounced in the higher position.

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

Fortunately, however, we do have examples containing PPs with the hypothesized structure in (73) in which the entire PP constituent moves to a higher position in the clause. As we will discuss in section 5.3, the split configuration we observe there conforms to what we would expect if they had the structure in (73).

Although we do not have an example where the determiner modifies the main possessum of the complement of an adposition, we do have one in which the embedded possessum of an NP with recursive possessors is associated with a determiner. In (74), an NP whose embedded possessum (‘children’) is modified by a determiner is the complement to the adposition *jata* (‘with’). Both the determiner associated with the main possessor ‘children of the woman’ and the main possessum (in this case ‘shoes’) precede the adposition. As we will show, this particular pattern also falls under the PPG, as the determiner associated with the entire complex possessor pied-pipes the main possessum to a position preceding the adposition.

- (74) Ku-aamíyaaki-∅ [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 summarize the PP-internal word order possibilities in the table in (75).

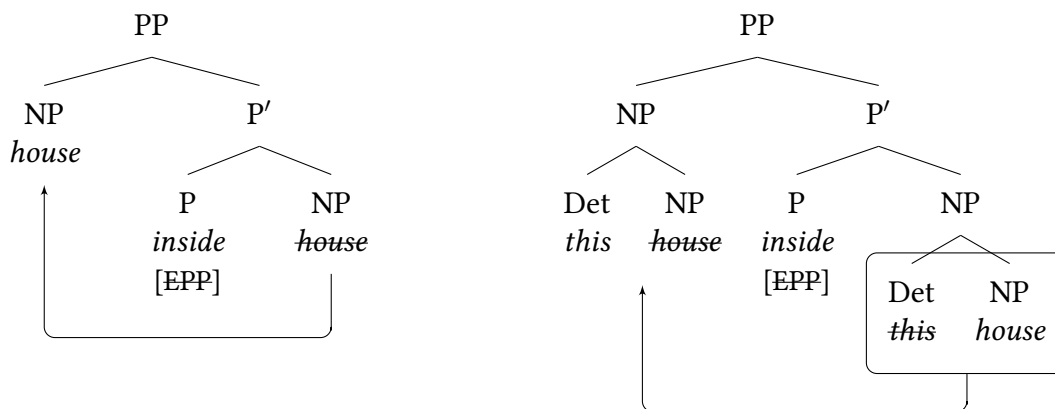
(75)	Underlying structure	Surface word order	
a.	[_{PP} inside [_{NP} house]]	<i>house inside</i>	(69a)
b.	[_{PP} inside [_{NP} this house]]	<i>this inside house</i>	(70)
c.	[_{PP} before [_{NP} friend [_{PSSR} man]]	<i>man friend before</i>	(71)
d.	[_{PP} before [_{NP} friend [_{PSSR} this man]]]	<i>this friend before man</i>	(72)
e.	[_{PP} with [_{NP} shoes [_{PSSR} these children [_{PSSR} woman]]]]	<i>these shoes with woman children</i>	(74)

In following section, we will show how these patterns also follow from our proposed analysis.

5.2 Deriving PP-internal word order

As we have seen, a bare NP complement always precedes the adposition selecting it, whereas an NP modified by a determiner always follows the adposition. This suggests a similar generalization to what we proposed for noun phrases, namely an ‘adposition second’ or ‘P2-requirement’. To capture this, 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, 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 (76a) and (76b).

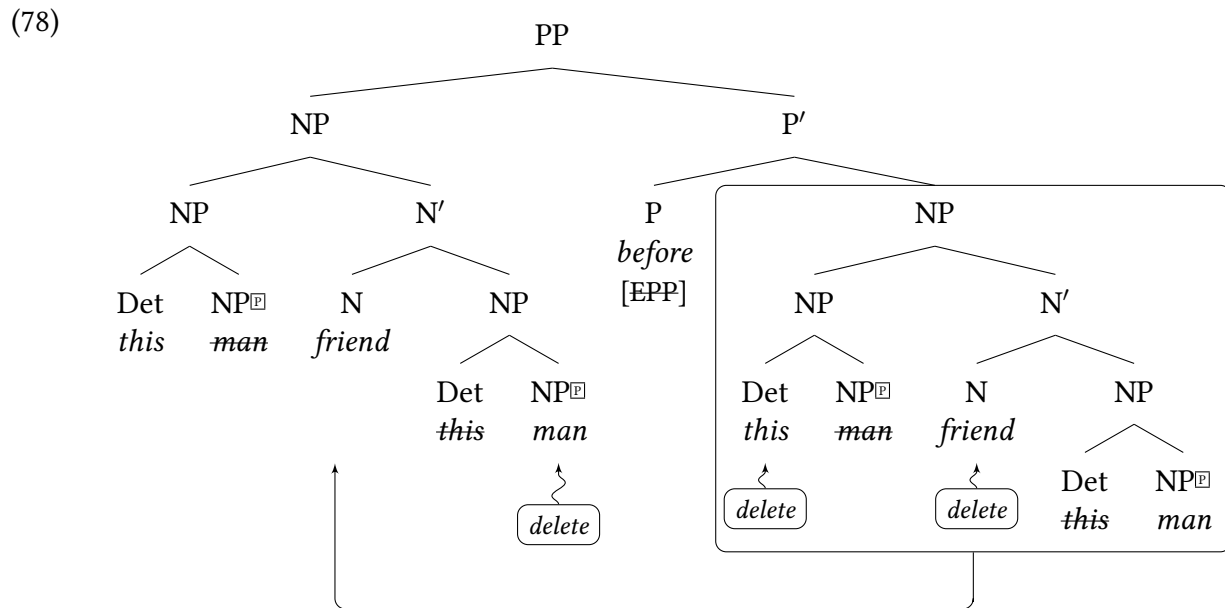
- (76) a. *iita jinakuma*
 house inside
 ‘inside the house’
- b. *iina jinakuma iita*
 DET inside house
 ‘inside this house’



Recall that the example in (77) instantiates the PPG as the determiner associated with the possessor appears to the left of the adposition together with the possessum.

- (77) Ku-asa-ki-∅ [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))

The analysis of this example is given in (78). First, the complement to the adposition is created, deriving the NP-internal word order *this friend man*. Here, the possessum ‘friend’ is not P-marked due to the association of the determiner with the possessor. The boxed NP merged as the complement to the adposition moves to the Spec-PP given the [EPP] on P and the Copy Deletion algorithm mandates deletion of all terminals in the higher copy dominated by a P-marked node. Due to the low position of the determiner, the possessum is not eligible for deletion in the higher copy, giving rise to the surface effect of possessum pied-piping.



Now, let us consider the complex example in (79) together with its underlying structure.

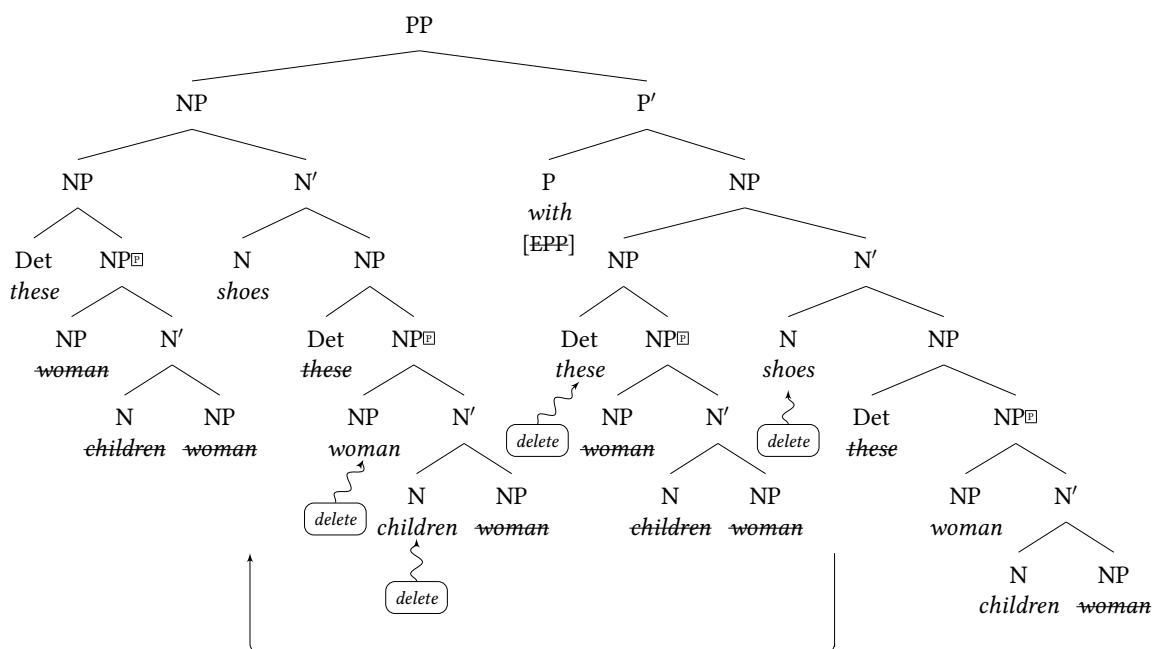
- (79) [PP iipi sapatu-ka **jata** miisaji mira]
 DET.PL.AN shoe-PL with woman child.PL
 ‘with the shoes of these children of the woman’ (Michael 2003: 15, (53))
 [with [shoes [these children [woman]]]] → *these shoes with woman children*

Here, a possessive noun phrase ‘the shoes of these children of the woman’ is merged as the complement of the adposition ‘with’. This example is noteworthy because it involves possessum pied-piping of a possessive NP embedded inside two second-position domains: the NP headed by ‘shoes’ and the PP headed by ‘with’. As we have seen, within the NP itself, we would not expect to find pied-piping of the embedded possessum ‘children’ to a position preceding the main possessum ‘shoes’ since the determiner modifies the possessum rather than the possessor, as in the similar example in (56). However given the fact that the adposition also triggers movement of its NP, the fact the main possessor ‘these children of the woman’ is modified by a determiner means that we expect pied-piping of the main possessum ‘shoes’, given the PPG. As we see in (79),

this is precisely what we find.

To see how the present analysis derives this, we will consider the derivation in detail. First, we build the NP complement of the adposition in (80). The derivation here is parallel to (62). As mentioned above, we do not have possessum pied-piping within the NP. This NP is then merged as the complement of the preposition ‘with’, with all previous P-marks and deletion specifications retained. Given the [EPP]-feature on P, the NP moves to specifier of P. Now, the Copy Deletion algorithm applies again. It marks for deletion all terminals in the lower copy not dominated by a P-marked node. This includes the determiner at the edge of NP and the main possessum ‘shoes’. Given the complementarity of deletion in Copy Deletion, any previously undeleted terminals not dominated by a P-marked node will remain pronounced in the higher copy, i.e. the determiner and the possessum. This correctly derives the emergence of possessum pied-piping, as the moving phrase now constitutes a larger possessive NP whose possessum is not dominated by a P-marked node.

(80)



In general, our analysis of the PPG predicts precisely the pattern we find in (80). Any material not contained in the c-command of a determiner will be ‘pied-piped’ under displacement, meaning that even when there is no possessum pied-piping within the NP, this can emerge when the entire NP is moved to some higher position (e.g. Spec-PP).

This account makes another interesting prediction. For example, if the entire PP in (80) were to undergo movement to some higher position, our Copy Deletion algorithm would predict that the higher copy of the PP would contain not only the determiner ‘these’ and the possessum ‘shoes’, but also the adposition ‘with’, as none of these elements are dominated by a P-marked node in the structure. In the following section, we will show that this prediction is indeed borne out.

5.3 Split PPs in the irrealis position

As shown in section 3.1, it is also possible for PPs to move to the irrealis position. Since a determiner contained inside the complement of an adposition will not c-command the adposition, we predict that this adposition should never be P-marked and is therefore immune from deletion in the lower copy. This means that, in addition to the usual pied-piping of a possessum, we would also expect to find the adposition in the irrealis position with the determiner.

The following data confirm this prediction. When a PP whose complement is a possessive NP moves to the irrealis position, if the possessum is modified by a determiner, then both the determiner and the adposition are pronounced in the higher copy (81a). If the determiner modifies the possessor, however, then we find three elements in the irrealis position: the determiner, the possessum and the adposition (81b).

- (81) a. Aámiikáaka kí= iina =jina samaraata-rîi-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))

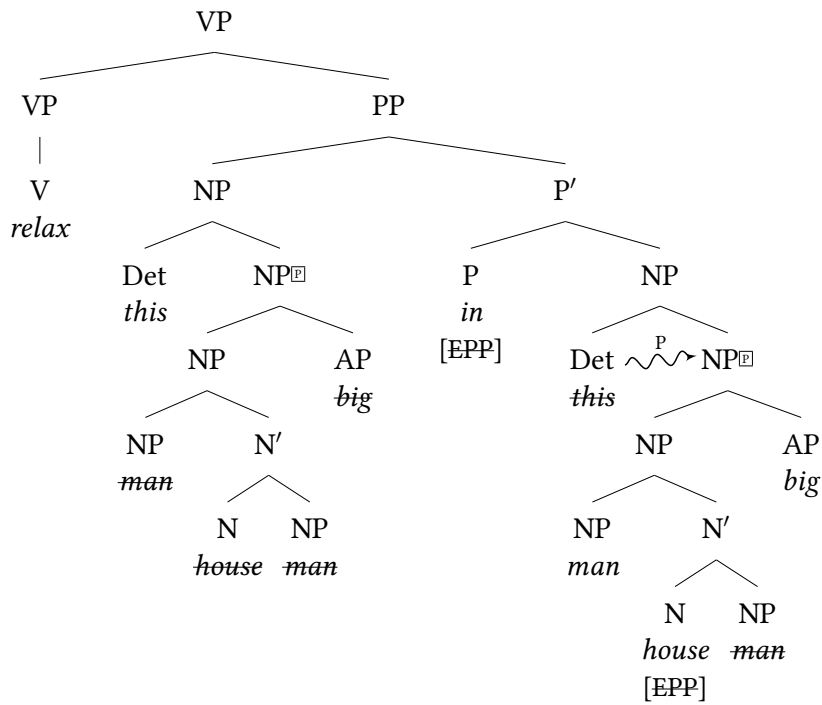
- b. Aámiikáaka kana iina nasi =jina nata-rîi-Ø [PP ____ mîsaji]
 one.day.away 1PL.EXCL DET field =LOC plant-ASP-NPST woman
 ‘Tomorrow, we will plant in the field of this woman.’
 (Hansen 2011: 171, (3.118))

It can be shown that this pattern of discontinuity is predicted by our analysis of the PPG, since all material that is not in the c-command domain of a determiner will be pied-piped under movement.

In example (81a), the relevant pre-movement structure for the PP adjunct is given in (82). The determiner c-commands the possessum NP headed by ‘house’ including the adjective ‘big’.¹⁰ Recall that this is a configuration that constituted a gap in the table in (75). 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 (82) in its base-position, where only the determiner is pronounced before the adposition.

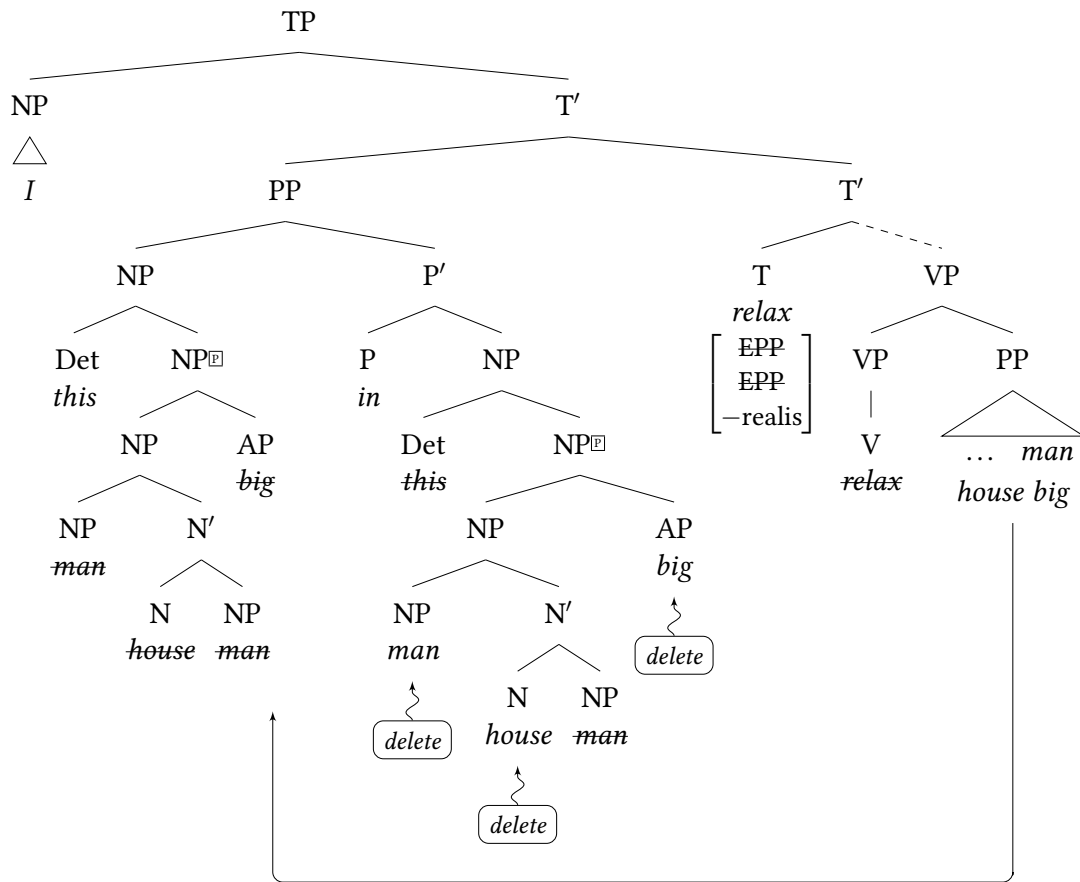
¹⁰As a reviewer mentions, our analysis correctly predicts that any adjectives in the c-command domain of the determiner are protected from deletion in the lower copy and therefore not pied-piped. If this is not the case, then the adjectival modifier surfaces in the moved position, as we saw in examples such as (26) and (69b). Our analysis predicts that other modifiers such as relative clauses will also be pied-piped or stranded depending on whether they are c-commanded by a determiner or not. At present, we do not have the relevant data to verify this prediction.

(82)



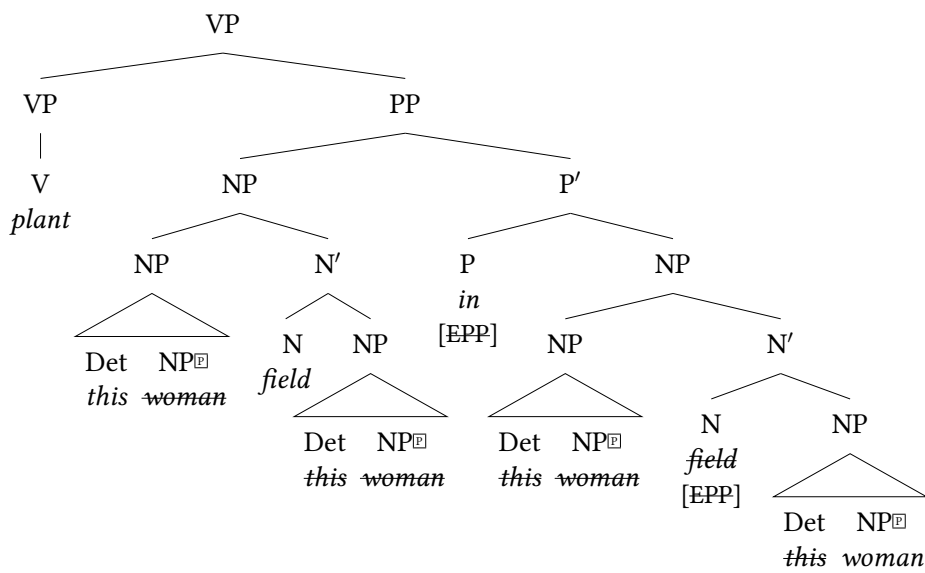
This makes the correct prediction for the surface order we find when the PP undergoes movement to the irrealis position (83). When the Copy Deletion algorithm applies, both the determiner and the adposition are realized in the higher copy and all other PP-internal material is realized in the lower copy.

(83)



Considering the pre-movement structure for the PP in (81b) where the determiner is associated with the possessor, the only element that is c-commanded by a determiner is the possessor (84). Only the lowest occurrence of the P-marked possessor is not deleted at this stage.

(84)



Our analysis makes a clear prediction about what happens when the PP undergoes movement.

6 Split NPs in subject position

We have already discussed movement to the irrealis position in some detail, but are there other kinds of clause-level movements that could trigger discontinuities? In this section, we discuss split NP constructions involving movement to subject position and the consequences they have for our approach.

First, let us consider clauses with intransitive verbs such as *makii* ‘sleep’ in (86). When the subject is a bare noun, it precedes the verb in what we assume to be the subject position in Spec-TP (86b). If the determiner is modified by a determiner, however, then only the determiner precedes the verb in subject position (86c).

- (86) a. Ikwani makii- \emptyset
 man sleep.IPFV-NPST
 ‘The man is sleeping.’
- b. Iina makii- \emptyset [NP ___ ikwani]
 DET sleep.IPFV-NPST man
 ‘This man is sleeping.’
- c. * [NP Iina ikwani] makii- \emptyset ___
 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 (87) shows.

- (87) *Iina irikatájuu-yaa- \emptyset 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 (88).¹¹ This constitutes the only construction we are aware of in which a moved NP containing a determiner does not surface as a split-NP.

- (88) a. ?Iina ikwani irikatájuu-yaa- \emptyset iina iimina.
 DET man repair-IPFV-NPST DET canoe
 This man repairs this canoe. (Michael 2004b: 4, (9b))

¹¹Example (88a) 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- \emptyset iina iimina
 DET man 3SG=repair-IPFV-NPST DET canoe
 This man, he repairs this canoe. (Michael 2004b: 4, (9c))

The marginality of (88a) 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.

- b. Iina miyaara siinaki-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 (89a) and focus fronting (89b).¹²

- (89) a. Saakaá₁ iina irikatájuu-yaa-Ø ikwani —₁ ?
 what DET repair-IPFV-NPST man
 ‘What is this man going to repair?’ (Michael 2004b: 4, (8b))
- b. [_{NP} Masiáana nasi]₁ iina mii-yaa-Ø miisaji —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 (90).

- (90) *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 (91a), this is not problematic in light of the SSG. Crucially, though, the SSG

¹²It is important to mention that when a phrase containing a determiner undergoes focus fronting, it does not lead to a split construction. This can be seen in the example in (i) where the focal object ‘this fish’ has been fronted, but does not lead to a split (the locative PP ‘inside the canoe’ occupies the irrealis position in this example).

- (i) [_{NP} Iina paápaaja] kí iimina=jinakuma asa-rii-Ø —_{NP}
 DET fish 1SG canoe=inside eat-MMPFV-NPST
 ‘This fish, I will eat inside the canoe.’ (Hansen 2011: 184, (4.14))

This is perhaps surprising if focus fronting involves movement, as our Copy Deletion algorithm would predict that we find a split here. Generally, it seems that we only find discontinuous NPs with [EPP]-driven movement at the clause-level or NP/PP-internally. If this is the case, then this factor must be incorporated into the analysis somehow. With that said, it is not clear whether focus fronting constructions such as (i) actually involve movement. The important diagnostic tests such as those for island effects have, to the best of our knowledge, not been run. Further research on this topic is necessary before any firm conclusions can be drawn from such examples.

accounts for the emergence of a transitivity restriction with locative inversion due to the fact that subject stays low in (91b).

- (91) 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 (92a). However, this is generally not possible with transitive verbs (92b).

- (92) 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))

- 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: 195–194, (7))

On Alexiadou & Anagnostopoulou’s (2001) analysis, the subject stays low in French stylistic inversion (also see Valois & Dupuis 1992). For this reason, (92b) also falls under the SSG.

Importantly, the SSG predicts that movement of the direct object out of *vP* should void this effect. As (93) shows, this is indeed borne out, parallel to what we saw with Iquito splits in (89).

- (93) 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 (86b), as only a single NP is pronounced inside the *vP* (94a). With a transitive verb, as we saw in (87), both the head nouns associated with the subject and the object are pronounced within *vP* (94b), 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 (94c), as shown by (89).

- (94) 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]]]]]]

It therefore seems that the *Subject In-Situ Generalization* has the potential to explain why the subject of a transitive verb may not be split in constructions like (87), even though that is what our Copy-Deletion algorithm predicts. That is, since the determiner assigns a P-mark to its sister ‘man’, we would expect ‘man’ to be protected from deletion in the lower copy. However, this structure would violate the SSG. Thus, this observation also shows that satisfying the SSG takes

precedence over the need to respect P-marking when the two are in conflict with each other. We leave the question of the resolution of this conflict, as well as the exact theoretical implementation of the SSG, to future work.

7 Further issues

7.1 Against alternative approaches

In this section, we will discuss two alternative approaches to deriving split constructions, namely the traditional Left-Branch Extraction analysis and a remnant movement analysis. We will argue that both fail to derive the PPG in a satisfactory way, compared to the distributed deletion account developed above. For this purpose, we will just focus on the basic PPG paradigm as exemplified by the recursive possession structures presented in section 4.1.

7.1.1 Left-Branch Extraction

First, let us consider an alternative approach to split constructions which involves direct extraction of the displaced element(s), i.e. traditional Left-Branch Extraction (Ross 1967), and how this line of analysis could be applied to split NP constructions in Iquito. To see this, recall the basic mappings from underlying structure to surface order in (95) inside possessive NPs that instantiate the PPG. Only when the determiner modifies the possessor do we find possessum pied-piping (95b).

- (95) a. [cat [these children [woman]]] → *these cat woman children*
 ‘the cat of these children of the woman’
 b. [shoe [friend [these men]]] → *these friend shoe men*
 ‘the shoe of the friend of these men’

In a direct extraction approach, we would generally assume that split NP constructions arise from movement of the determiner to Spec-NP. As (96) shows, (95a) is relatively straightforward to derive with direct extraction if the determiner simply moves to the specifier of the possessum (movement of possessor is not shown).

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

The apparent non-constituent movement in (95b) would require some additional assumption, for example multiple order-preserving steps of movement to Spec-NP (97) (see Bošković 2016: 21 for a similar approach to apparent multiple LBE; though cf. Bošković 2015).

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

Alternatively, we could adopt an analysis similar to what has been said for cases of so-called ‘extraordinary LBE’ where an adposition is extracted in addition to a left-branch constituent (see section 7.2). The general idea here is that the two displaced elements fuse to form some kind of unit that can then move as a single constituent. There have been various technical implementations of

this idea in the literature (Borsley & Jaworska 1988; Corver 1990; Radkevich 2010; Martinović 2019; Talić 2019). On this approach, we could say that *these* and *friend* undergo fusion or ‘cliticization’ in (97) and move as a single constituent. The condition for pied-piping would then actually reduce to the trigger for this fusion operation being present or not.

The main problem with both of these analyses is that they offer no real explanation for why the special case (multiple specifiers or fusion) is tied to a particular structural configuration, i.e. why it is only available when the determiner originates with the possessor. Such an account appears to struggle to provide a rationale for this, beyond pure stipulation. The problem of restricting this approach becomes more acute when we consider that even more material can be ‘pied-piped’ when a PP moves to the irrealis position (as in section 5.3).

7.1.2 Remnant movement

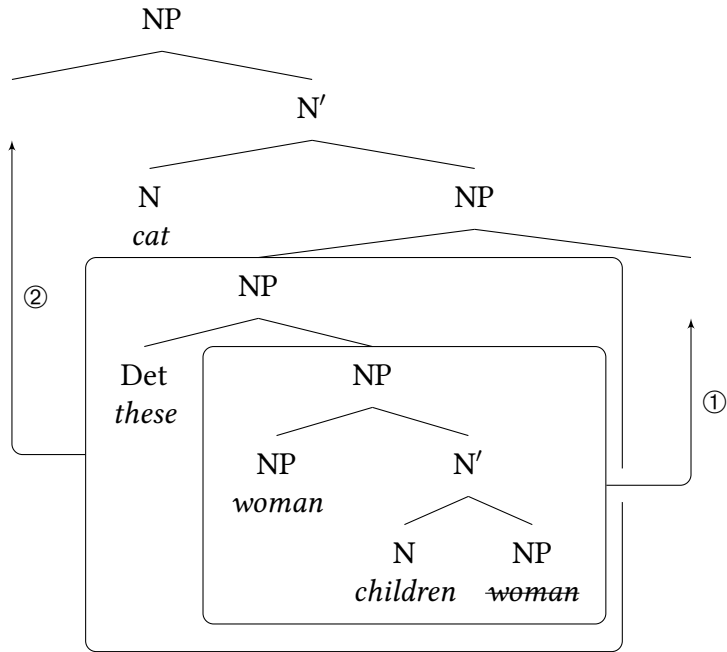
Remnant movement has a potential advantage over a direct extraction approach in that it is better equipped to handle non-constituent displacement. For this reason, it could also fare better in capturing the possessum pied-piping in Iquito. That said, the well-known problem of remnant movement analyses is the lack of independent evidence for the various ‘evacuating’ movement steps required to create the remnant in the first place. This problem also carries over to any potential analysis of the PPG in Iquito.

It is possible the trigger for evacuation movement could be a similar structural configuration to what we have assumed for P-mark assignment, namely sisterhood with a determiner. A proponent of remnant movement could therefore suggest the following trigger for creating remnants:

- (98) The NP complement of a determiner must move out of the minimal NP containing the determiner and its complement.

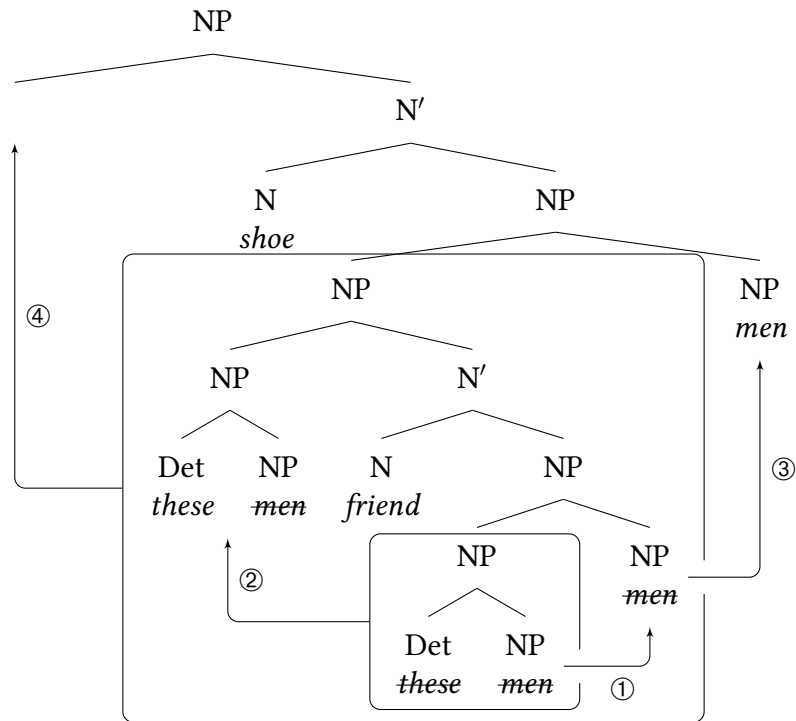
For the case in which the determiner modifies the possessum, this would derive the correct result, as shown in (99). The entire complement of the determiner will move out, with the remnant NP containing only the determiner movement to the specifier of the higher noun, as we assumed in our analysis.

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



The challenge here comes in maintaining this approach in light of possessum pied-piping. When the determiner modifies the possessor, it appears that we require an additional evacuation step of 'men' out of the larger NP constituent containing the determiner before it moves, i.e. step ③ in (100).

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



It is difficult to see what the independent motivation for this step could be, beyond stating that what moves must be a remnant NP. This is clearly not a general requirement when the NP does not contain a determiner, for example. All else being equal, we might expect to find the word order **these friend men shoe*, which is what we would have without the additional step in ③. While it is always possible to stipulate additional evacuation steps in a remnant movement analysis, they do not seem to correlate with any obvious independent property of the structure, e.g. the base-position of the determiner, and are therefore unable to provide any insight into why the PPG exists unlike the distributed deletion analysis we have proposed.

7.2 Cross-linguistic perspective

In our analysis of split NP constructions in Iquito, we have proposed that distributed deletion is constrained by the distribution of a diacritic assigned to the sister of a determiner that we called a ‘P-mark’. In this section, we will briefly discuss the implications this analysis could have for other split constructions. In general, the question of cross-linguistic variation would ultimately reduce to the lexical items that are endowed with the P-mark assigning property and the particular syntactic constructions available in a given language.

For example, a much-discussed example of split NP constructions is Left-Branch Extraction in Slavic. While determiners can trigger splits, so can other left-branch elements such as adjectives and quantifiers (see e.g. Bošković 2005). This would imply that the inventory of P-mark assigning categories in those Slavic languages with LBE would be larger than Iquito if one were to adopt our distributed deletion analysis for these languages. As it stands, however, it remains controversial what the correct analysis of Slavic LBE is. Indeed, Iquito is somewhat unusual from a cross-linguistic perspective in only having splits with determiners and also requiring them in almost all cases in which an NP containing a determiner is displaced. This is suggestive of parameterization not just in the locus of P-marking, but also in whether this property is optional for a given category.

Recall that, as soon as part of a moved phrase head is outside the domain of P-marking, discontinuities are expected to arise. Similar to the PP movement cases discussed in section 5.3, LBE-languages such as Polish have a construction known as ‘extraordinary LBE’ in which an adposition is extracted in addition to the determiner.

- (101) a. Jan rozmawiał [_{PP} z tym studentem]
 Jan talked with this.INST student
- b. Z tym Jan rozmawiał [_{PP} ___ studentem]
 with this.INST Jan talked student
 ‘Jan talked with this student.’ (Borsley & Jaworska 1988: 688)

Assuming that there is no c-commanding head to assign a P-mark to the preposition, it will not be protected from deletion in the lower copy and therefore pronounced high.

This of course raises the question of how to constrain the theory of P-marking cross-linguistically. There are several possibilities here. For example, it might be that certain kinds of lexical items, e.g. those from the closed class, are incompatible with P-marking. This would also exclude complementizers, for example, and potential also D heads (recall Bošković’s generalization that LBE is only possible in languages without DP). As pointed out by a reviewer, if a complementizer

material c-commanded by a determiner is protected from the usual rule of deletion in the lower copy of a movement chain. We implemented this in terms of distributed deletion, guided by the assignment of P-mark diacritics. This allows us to tie the determination of what is pronounced to the structural relations inside the noun phrase. Since a determiner modifying a possessor does not c-command the possessum, it cannot be protected from deletion in the lower copy and is therefore pied-piped.

As well as deriving the basic PPG effect that we find under clause-internal movement to the irrealis position, we have demonstrated that the effects of the PPG run much deeper in the entire grammar of Iquito, also determining word order inside NPs and PPs. The apparently idiosyncratic word orders we find in recursive possession structures make perfect sense in light of the PPG and the assumption that there is cyclic roll-up movement at each phrase within the NP. The same could also be shown for the internal structure of adpositional phrases, who also exhibit a PPG effect when their NP complement contains a possessor modified by a determiner. Furthermore, our account of the PPG predicts that material other than the possessum can be pied-piped as long as it is outside the domain of P-marking delineated by a determiner. As we have shown, when a PP moves to the irrealis position, the adposition is always pied-piped due to its high structural position within the phrase. It could therefore be shown that the PPG is fundamental to understanding word order in Iquito.

The proposal in this paper has a number of broader consequences for our understanding of grammar. 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. Furthermore, we propose a novel way of restricting distributed deletion. Unlike previous accounts, our the application of deletion is determined solely by the configurational properties of the noun phrase, in particular the base-position of the determiner, rather than appealing to the distribution of features driving the movement. Finally, our analysis requires that the determination of which copies are to be deleted must be determined cyclically during the derivation, i.e. after each movement step. While there are various ways of understanding this, it could be taken to support the growing view that there is a greater degree of interleaving of PF operations in the syntax than previously assumed (Fox & Pesetsky 2005; Calabrese & Pescarini 2014; Martinović 2019).

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.
- Alexiadou, Artemis, Liliane Haegeman & Melita Stavrou (eds) (2007). *The Noun Phrase in the Generative Perspective*. de Gruyter: Berlin.
- 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.
- 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.
- Beier, Christine & Lev Michael (2022). Reality status in Iquito: an expanded description. Talk at the *Fourth Symposium on Amazonian Languages (SAL4)*. April 2nd 2022.
- 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.
- Bernstein, Judy B. (2001). The DP Hypothesis: Identifying Clausal Properties in the Nominal Domain. In M. Baltin & C. Collins (eds). *The Handbook of Contemporary Syntactic Theory*. Blackwell: Malden, MA. 536–561.
- Bobaljik, Jonathan D. (2002). A-Chains at the PF-interface: Copies and “Covert” Movement. *Natural Language and Linguistic Theory* 20(2). 197–267.
- Bondarenko, Tatiana & Colin Davis (2023). Concealed Pied-Piping in Russian: On Left Branch Extraction, Parasitic Gaps, and the Nature of Discontinuous Nominal Phrases. *Syntax* 26(1). 1–40.
- Borsley, Robert D. & Ewa Jaworska (1988). A Note on Prepositions and Case Marking in Polish. *Linguistic Inquiry* 19(4). 685–691.
- Bošković, Željko (2002). On Multiple Wh-Fronting. *Linguistic Inquiry* 33(3). 351–384.
- 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 (2015). On Multiple Left-Branch Dislocation: Multiple Extraction and/or Scattered Deletion?. In M. Szajbel-Keck, R. Burns & D. Kavitskaya (eds). *Formal Approaches to Slavic Linguistics 23: The First Berkeley Meeting 2014*. Michigan Slavic Publications: Ann Arbor, MI. 20–35.
- Bošković, Željko (2016). Getting Really Edgy: On the Edge of the Edge. *Linguistic Inquiry* 47(1). 1–33.
- Bošković, Željko & Jairo Nunes (2007). The Copy Theory of Movement: A View From PF. In N. Corver & J. Nunes (eds). *The Copy Theory of Movement*. John Benjamins: Amsterdam. 13–74.
- 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.
- 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 (2004b). *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.
- Cable, Seth (2010). *The Grammar of Q: Q-Particles, Wh-Movement and Pied-Piping*. Oxford University Press: Oxford.
- 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.
- Cinque, Guglielmo (2005). Deriving Greenberg’s Universal 20 and its Exceptions. *Linguistic Inquiry* 36(3). 315–332.
- Collins, Chris (1997). *Local Economy*. MIT Press: Cambridge, MA.
- Collins, Chris & Phil Branigan (1997). Quotative Inversion. *Natural Language and Linguistic Theory* 15(1). 1–41.
- Corver, Norbert (1990). *The Syntax of Left-Branch Extractions*. PhD thesis, Tilburg University.
- 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.
- Danon, Gabi (2011). Agreement and DP-Internal Feature Distribution. *Syntax* 14(4). 297–317.
- Davis, Colin (2020a). Crossing and Stranding at Edges: On Intermediate Stranding and Phase Theory. *Glossa* 5(1). 17. 1–32.
- Davis, Colin (2020b). *The Linear Limitations of Syntactic Derivations*. PhD thesis, MIT.
- Davis, Colin (2021). Possessor Extraction in Colloquial English: Evidence for Successive-Cyclicity and Cyclic Linearization. *Linguistic Inquiry* 52(2). 291–332.
- 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.
- Doggett, Teal Bissell (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.
- Elliott, Jennifer R (2000). Realis and irrealis: Forms and concepts of the grammaticalisation of reality. *Linguistic Typology* 4(1). 55–90.
- Ernst, Thomas (2002). *The Syntax of Adjuncts*. Cambridge University Press: Cambridge.

- 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 Progredi Est Regredi. Festschrift für Alla Paslawska*. Pais: Lviv. 266–295.
- 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.
- Franks, Steven & Željko Bošković (2001). An Argument for Multiple Spell-Out. *Linguistic Inquiry* 32(1). 174–183.
- Giusti, Giuliana (2006). Parallels in Clausal and Nominal Periphery. In M. Frascarelli (ed.). *Phases of Interpretation*. de Gruyter: Berlin. 163–184.
- 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.
- Hein, Johannes (2018). *Verbal Fronting: Typology and Theory*. PhD thesis, Universität Leipzig.
- Hinterhölzl, Roland (2000). Licensing Movement and Stranding in West Germanic OV Languages. In P. Svenonius (ed.). *The Derivation of OV and VO*. John Benjamins: Amsterdam. 293–326.
- Hinterhölzl, Roland (2002). Remnant Movement and Partial Deletion. In A. Alexiadou, E. Anagnostopoulou, S. Barbiers & H.-M. Gärtner (eds). *Dimensions of Movement: From Features to Remnants*. John Benjamins: Amsterdam. 127–149.
- Holmberg, Anders (2000). Scandinavian Stylistic Fronting: How Any Category Can Become An Expletive. *Linguistic Inquiry* 31(3). 445–483.
- Holmberg, Anders (2005). Is There Little Pro? Evidence from Finnish. *Linguistic Inquiry* 36(4). 533–564.
- Holmberg, Anders (2006). Stylistic Fronting. In M. Everaert & H. van Riemsdijk (eds). *The Blackwell Companion to Syntax*. Vol. 4. Blackwell: Oxford. 532–65.
- Iatridou, Sabine & Hedde Zeijlstra (2013). Negation, Polarity and Deontic Modals. *Linguistic Inquiry* 44(4). 529–568.
- 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.
- Kotek, Hadas (2014). *Composing Questions*. PhD thesis, MIT.
- Kučerova, Ivona (2012). The T-Extension Condition. *Canadian Journal of Linguistics* 57(3). 387–426.
- Lai, I-Wen (2009). *Time in the Iquito Language*. PhD thesis, The University of Texas at Austin.
- Landau, Idan (2006). Chain Resolution in Hebrew V(P)-fronting. *Syntax* 9(1). 32–66.
- Landau, Idan (2007). EPP Extensions. *Linguistic Inquiry* 38(3). 485–523.
- 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: .
- Mithun, Marianne (1995). On the relativity of irreality. In J. Bybee & S. Fleischman (eds). *Modality in Grammar and Discourse*. Typological Studies in Language 32 John Benjamins: Amsterdam. 367–388.
- 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 (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.
- Ott, Dennis (2018). Stylistic Fronting as Remnant Movement. *Studia Linguistica* 72(1). 1–38.
- Pereltsvaig, Asya (2008). Split Phrases in Colloquial Russian. *Studia Linguistica* 62(1). 5–38.
- Pollock, Jean-Yves (1989). Verb Movement, Universal Grammar and the Structure of IP. *Linguistic Inquiry* 20(3). 365–424.
- Postal, Paul M. (2004). *Skeptical Linguistic Essays*. Oxford University Press: Oxford.
- Radkevich, Nina V. (2010). *On Location: The Structure of Case and Adpositions*. PhD thesis, University of Connecticut.
- Richards, Norvin (2001). *Movement in Language: Interactions and Architectures*. Oxford University Press: Oxford.

- Ross, John R. (1967). *Constraints on Variables in Syntax*. PhD thesis, MIT.
- 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.
- Siewierska, Anna (1984). Phrasal Discontinuity in Polish. *Australian Journal of Linguistics* 4(1). 57–71.
- Skopeteas, Stavros, Elisabeth Verhoeven & Gisbert Fanselow (2022). Discontinuous Noun Phrases in Yucatec Maya. *Journal of Linguistics* 58(3). 609–648.
- 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.
- Talić, Aida (2019). Upward P-Cliticization, Accent Shift and Extraction out of PP. *Natural Language and Linguistic Theory* 37(3). 1003–1143.
- Trommer, Jochen (to appear). The Concatenative Structure of Tonal Overwriting. *Linguistic Inquiry*
- 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 Urk, Coppe (to appear). Constraining Predicate Fronting. *Linguistic Inquiry*
- Wilder, Chris (1995). Rightward Movement as Leftward Deletion. In U. Lutz & J. Pafel (eds). *On Extraction and Extraposition in German*. John Benjamins: Amsterdam. 273–309.
- Zeijlstra, Hedde (2004). *Sentential Negation and Negative Concord*. PhD thesis, University of Amsterdam.