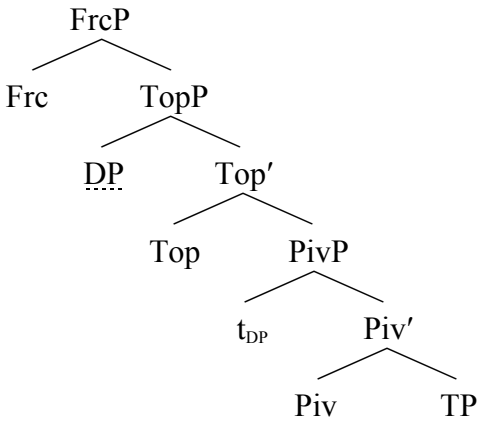
Chapter 4

Word Order and Clause Structure

4.0. Introduction

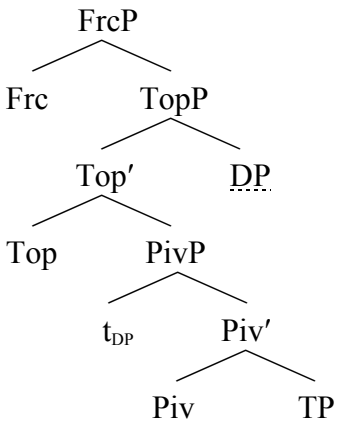
In chapter 3, I argued that the external argument (EA) occupies an A′-position in the C-domain of the clause, the specifier of a projection which I dubbed TopP. This projection is located below the projection which hosts complementizers in embedded clauses (FrcP), and above the projection to which the pivot of the verb raises (PivP):

(1)



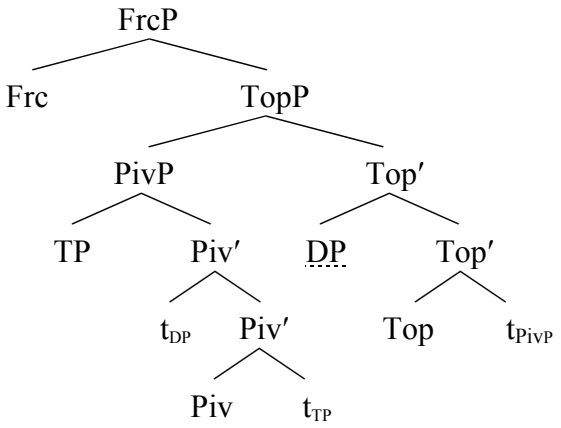
In this chapter, I focus on the right-peripheral position of the external argument. A priori, there are two possible approaches to deriving EA-final order, one of which appeals to directionality of concatenation and the other of which appeals to movement. Under the first approach, we might assume that Top^0 projects its specifier on the right, as in (2). (2) amounts to a slightly updated version of the phrase structure trees proposed by Guilfoyle, Hung, & Travis (1992) (GHT) and MacLaughlin (1995), who assume that the EA occupies a right-specifier position from which it c-commands the predicate phrase at spell-out.

(2)



The second approach adopts the assumption that EA-final order is derived from underlying EA-initial order through leftward movement of the predicate phrase to a position above the EA. It is this approach which I will argue for here. In particular, I will argue for a two-step derivation, whereby TP raises to become an outer specifier of PivP, after which PivP raises over the EA to become an outer specifier of TopP, yielding the surface structure in (3):

(3)



The derivation in (3) involves additional movements which need to be motivated, but in other respects it is arguably simpler than the analysis in (2). For a start, (2) requires us to posit a language internal asymmetry, whereby TopP takes its specifier to the right of the head while other projections take their specifiers to the left of the head. On the other hand, adopting the analysis in (3) allows us to assume that every head in Malagasy concatenates with its specifier in the same direction. Moreover, the cross-linguistic evidence for head–specifier order, particularly in the C-domain, is rather sparse. (Kayne 1994, for example, notes the apparent absence of languages with wh-movement to the right-periphery). Finally, it is unclear how (2) could be adapted to the Minimalist framework of Chomsky (1995), in which left-to-right order is treated strictly as a PF phenomenon. (Chomsky adopts a version Kayne's (1994) LCA, according to which the left-to-right order of constituents at PF is read off of asymmetric c-command relations at spell-out.) The derivation in (3), by contrast, avoids the need to posit directionality parameters on projection/merger, and is thus consistent with Minimalist assumptions.

In addition to being conceptually simpler, the structure in (3) has certain empirical advantages over the one in (2), as I will show in the final section of this chapter. There I discuss two pieces of evidence for (3). The first piece of evidence involves the placement of speech-act particles such as the yes/no question marker *ve*, which (following Paul 1999) I treat as a phrasal enclitic: By assuming the structure in (3), it is possible to formulate a simple rule to describe the positioning of this element—viz., *ve*-placement targets the right edge of the highest specifier in the clause. On the other hand, if we adopt the structure in (2), formulating a succinct *ve*-placement rule becomes more difficult, as we would need to stipulate either that *ve* targets hierarchically distinct constituents in different cases, or that the directionality of *ve*-cliticization can vary from construction to construction.

The second piece of evidence for the analysis in (3) involves word order in embedded clauses: If we assume that the predicate raises over the EA to derive surface word order, as in (3), we allow for the possibility that under certain circumstances, PivP-movement might fail to be triggered, in which case the clause will be spelled out with the EA preceding the predicate

rather than following it. I show that EA-initial order is in fact attested in certain kinds of embedded clauses (viz., clausal complements of perception verbs like *hita* "see", and adverbial clauses headed by certain subordinators, such as *satria* "because"). Given that in many languages with overt verb-raising, the verb surfaces in a lower position in (certain types of) embedded clauses than it does in main clauses, this is just where we might expect to find EA-initial order in Malagasy under the analysis in (3). By contrast, the analysis in (2) fails to predict the existence of EA-initial order, since the surface position of the EA is above and to the right of the predicate phrase at all stages of the derivation. To derive EA-initial order in embedded clauses under the analysis in (2), we would need to assume that in these constructions the EA raises from SpecTopP to a higher left-specifier (SpecFrcP?), a movement for which there is little independent motivation.

Why should Malagasy exhibit successive XP-movement to SpecPivP and SpecTopP? In addressing this question, I begin by reviewing evidence to show that the position of the external argument in Malagasy is the same as the position of preverbal topics in verb-second (V2) languages such as German, Dutch, and Icelandic—and that in general the architecture of the C-domain is essentially the same in verb-second languages as in Malagasy. Building on this analogy, I suggest that predicate-fronting in Malagasy is motivated by the same lexical requirements that trigger successive verb movement (T-to-C raising) in V2 clauses. In short, Malagasy turns out to be the XP-movement analogue of a V2 language.

To account for movement into the C-domain, I propose the following analysis: In order to be interpretable, a projection which is non-L-related (in the sense of Chomsky & Lasnik 1995) needs to be lexically identified, either by having an overtly realized head, or by attracting the categorial feature of an L-related projection into its checking domain (I refer to this as the *L-support requirement*). PivP and TopP are both non-L-related and, in the languages under consideration, both have phonetically null heads. Thus, in order for these projections to satisfy the L-support requirement, they must attract the categorial feature of the closest L-related projection, namely TP.

Malagasy resembles the verb-second languages in that [T] feature attraction by PivP and TopP happens in the overt syntax. However, in the case of V2 languages, attraction takes the form of successive X^0-adjunction (T^0 adjoins to Piv^0, which adjoins to Top^0), whereas in Malagasy it takes the form of successive XP-movement (TP raises to become the outer specifier of PivP, after which PivP raises to become the outer specifier of TopP). This difference in how attraction is spelled out is explained in terms of an independent morphological difference between the two language types: I suggest that when a bundle of features α is attracted overtly into the checking domain of a feature, α will carry along the minimum amount of phonological material necessary to prevent the derivation from crashing, either at LF or at PF (Chomsky's 'generalized pied-piping' approach to overt movement). I formalize this as a pair of constraints, *Economy of Displacement* and *Morpho-Syntactic Integrity*:

(4) *Economy of Displacement*

When a feature F attracts a compatible feature F′ into its checking domain, copy the smallest feature bundle containing F′ allowed by Morpho-Syntactic Integrity.

(5) *Morpho-Syntactic Integrity*

When a feature bundle *fb* is copied, the following conditions must hold:

i. *fb* is a visible syntactic constituent (X^{0max} or XP).
ii. All of the phonological features associated with a given morphological word must be spelled out in the same copy of *fb*.

In V2 languages, the complex head T^{0max} (containing the verb) forms a discrete morphological unit, and may thus raise into the C-domain by itself without violating PF constraints. In Malagasy, by contrast, the tense morpheme in T is a proclitic, which attaches to the verb stem to its immediate right in the morphological component. The smallest syntactic constituent which also forms a discrete morphological unit is thus TP. Hence, in order to ensure convergence at both PF and LF, the categorial feature [T] must pied-pipe TP when it raises into the C-domain.

This chapter is organized as follows: In 4.1 I review some previous proposals concerning Malagasy clause structure, ranging from the right-specifier structure of Guilfoyle, Hung, and Travis (1992) to the 'cascade' structure proposed by Pensalfini (1995), and discuss some of the empirical problems with these analyses. Then in 4.2 I present the alternative analysis in (3) above, and illustrate it with several sample derivations. In section 4.3, I discuss the structural parallels between predicate-initial Malagasy clauses and verb-second clauses, and lay out the analysis of L-support and generalized pied-piping outlined above. Finally in 4.4, I discuss the empirical evidence for the predicate-raising story, pertaining to the placement of speech-act particles and the presence of EA-initial order in certain kinds of embedded clauses.

4.1. Previous accounts of Malagasy clause structure

Malagasy is traditionally characterized as a VOS language on the basis of sentences such as (6):

(6) Mamono akoho amin'ny antsy ny mpamboly
NomP.kill chicken with-Det knife Det farmer
"The farmer kills chickens with the knife"

Concerning the underlined constituent in (6), whether one regards this element as a *subject* or a *topic* (see 3.1.1), the fact that it occurs at the right edge of the clause is typologically unusual. Languages with subject-final basic word order (VOS, OVS) are statistically rare (Greenberg 1966, et al.), while languages in which the topic is consistently clause-final are, to the best of my knowledge, unattested (syntactic topic positions being generally confined to the left periphery of the clause).[1] The question of how Malagasy word order is derived is thus of general theoretical

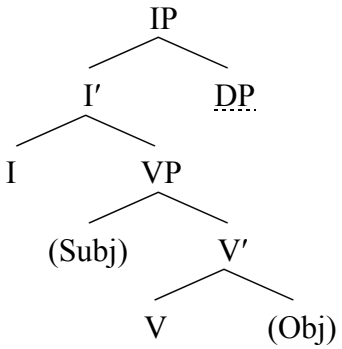
[1] I am being carefully to specify *consistently* clause-final here: Many languages allow right-dislocation, but I know of no language in which right-dislocation is the primary topicalization strategy, and certainly no language in which right-dislocation is obligatory in all clauses.

Concerning the claim that languages generally lack a right-peripheral syntactic topic position, a potential counter-example that I am aware of is Turkish, in which constituents that carry an existential presupposition frequently occur clause-finally, following the verb, as discussed by Kural (1997). However, the postverbal position in Turkish differs from the EA position in Malagasy in that it need not be filled in every clause. Furthermore, as Kural is quick to point

interest, especially in light of Kayne's (1994) Antisymmetry Theory, and other theories which seek to explain cross-linguistic word order variation in derivational terms rather than in terms of directionality parameters on phrase structure (Moro 1997, Fukui & Takano 1998, Haider 1994, 2000, Brody 1997, 2000, Frank & Kuminiak 2000, et al.).

Within the Principles and Parameters literature, the earliest explicit proposals concerning the phrase structure of Malagasy are found in Guilfoyle, Hung, & Travis (1992) (GHT). Adopting the VP-internal subject hypothesis, GHT argue for the structure in (7). Here, the predicate phrase constituent corresponds to I′, while the EA is licensed in the specifier of IP. Notice that IP projects its specifier to the right. By assuming specifier-final order in IP, GHT simultaneously explain why the verb (which raises to I^0) is clause-initial, immediately preceding the predicate-internal agent phrase (in SpecVP), and why the EA is clause-final.[2]

(7)



Subsequent researchers have expanded the structure in (7) to account for phenomena which GHT do not discuss. For example, MacLaughlin (1995) posits the structure in (8) below. As in GHT, the EA is licensed in the specifier of IP. Unlike GHT, however, MacLaughlin assumes that the EA subsequently raises to the specifier of an A′-projection, TopP, located between CP and IP. (It is TopP rather than IP which has its specifier on the right.) Positing additional structure above IP gives MacLaughlin extra head positions to host the yes/no question particle *ve* (in Top^0) as well as the focus particle *no* (in C^0).[3]

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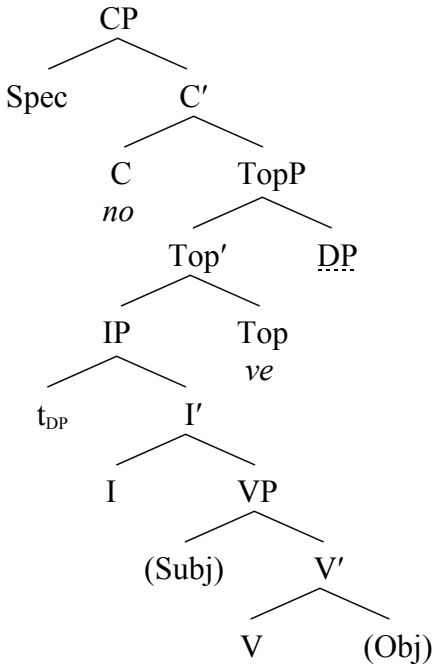
out, postverbal constituents in Turkish do not function as topics per se. That is, they do not identify the participant of whom the sentence is predicated, as EAs in Malagasy do; instead, they merely provide background information. As in other languages, topics in Turkish occur at the left edge of the clause.

[2] In a footnote, GHT suggest that the difference in constituent order between VP and IP may be due to a directionality parameter setting for Malagasy, according to which *lexical* projections take their specifiers on the left while *functional* projections take their specifiers on the right. However, they acknowledge that the language-internal evidence for such a parameter setting is limited.

[3] Assuming that TopP has *complement-head-specifier* order turns out to be crucial for MacLaughlin (1995), who accounts for the blocking effect discussed in 3.4 by analyzing the external argument position as an escape hatch for movement of wh-phrases into SpecCP: In order to prevent an object wh-phrase from raising into SpecCP without first being promoted to the EA position, MacLaughlin proposes that IP is an inherent barrier for antecedent-binding, due to the fact that it is selected by the next higher head (Top^0) in the 'non-canonical' direction for the language (cf. Cinque 1990). In this way, MacLaughlin indirectly links the wh-extraction restrictions in Malagasy to the right-peripheral position of the EA in SpecTopP.

(8)



Notice that MacLaughlin's structure, and the GHT tree upon which it is based, are both incompatible with Kayne's (1994) Linear Correspondence Axiom (LCA), according to which phrase markers in all languages conform to the order *specifier-head-complement*, and rightward movement and right-adjunction are disallowed. It is worth considering whether the position of the external argument can be accounted for in some way other than by assuming that it raises into a right-specifier.

In a footnote, MacLaughlin speculates that the order in (6) could be derived through a two-step process whereby the EA extracts from the predicate phrase and raises into a left-specifier, after which the predicate phrase raises over the EA to a higher left-specifier. This is shown schematically in (9): Here the subject raises out of PredP, which then fronts, yielding surface VOS order (cf. Kayne 1994, p. 36 for a similar proposal):

(9) a. $[_{ZP}\ [_{YP}\ [_{PredP}\ \mathbf{S\ V\ O}\ ]\ ]\ ]$

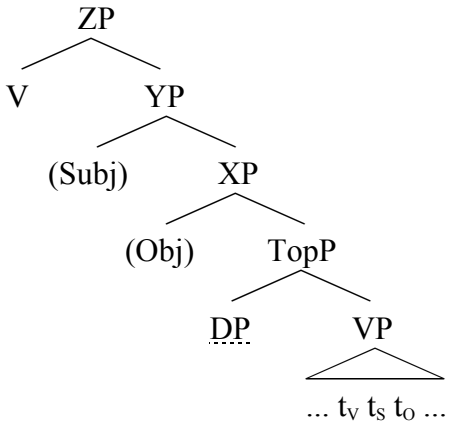
b. $[_{ZP}\ [_{YP}\ \mathbf{S}\ [_{PredP}\ t_S\ \mathbf{V\ O}\ ]\ ]\ ]$

c. $[_{ZP}\ [_{PredP}\ t_S\ \mathbf{V\ O}\ ]\ [_{YP}\ \mathbf{S}\ t_{PredP}\ ]\ ]$

The question of how to reconcile Malagasy word order with the constraints imposed by the LCA has been pursued independently in work by Robert Pensalfini and myself (Pensalfini 1995; Pearson 1995, 1996b, 1997, 1998a; cf. also Rackowski & Travis 2000). Here I briefly discuss Pensalfini's proposals, which contrast with my own in several key respects.

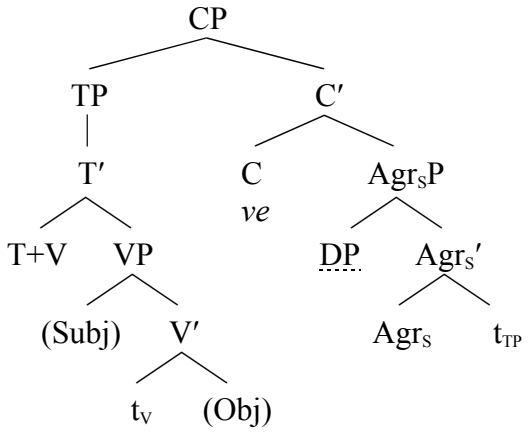
Pensalfini actually considers two alternative LCA-compatible analyses, one of which involves phrasal movement of the predicate over the external argument, as in (9), and the other of which involves a 'cascade' structure (cf. Pesetsky 1995), where the external argument is asymmetrically c-commanded at spell-out by the verb and its dependents, as in (10):

(10)



Pensalfini's first proposal is illustrated by the tree in (11): He assumes a projectional hierarchy along the lines of Chomsky (1995, chapter 3) and Bobaljik & Jonas (1996), where the tense features and case/agreement features of finite INFL are manifested on separate heads, T and Agr_S. The EA raises to the specifier of Agr_SP to check case, after which TP (= PredP) raises to the specifier of CP, deriving the correct surface order. Under this analysis, particles such as *ve* are located in the head of CP, rather than the head of TopP, as in MacLaughlin's structure (Pensalfini does not discuss where the focus marker *no* would appear in (11)).

(11)



Pensalfini ultimately rejects this analysis because of the conceptual problems which it raises. For example, he objects to the structure in (11) on the grounds that there is no obvious reason why the TP remnant should need to move to SpecCP. Moreover, raising the TP over Agr_SP creates a surface configuration in which the EA does not c-command its trace (in violation of the Proper Binding Condition). Thus, he claims, it is necessary to assume that the TP reconstructs into its base position at LF, making the problem of motivating TP-raising all the more difficult.

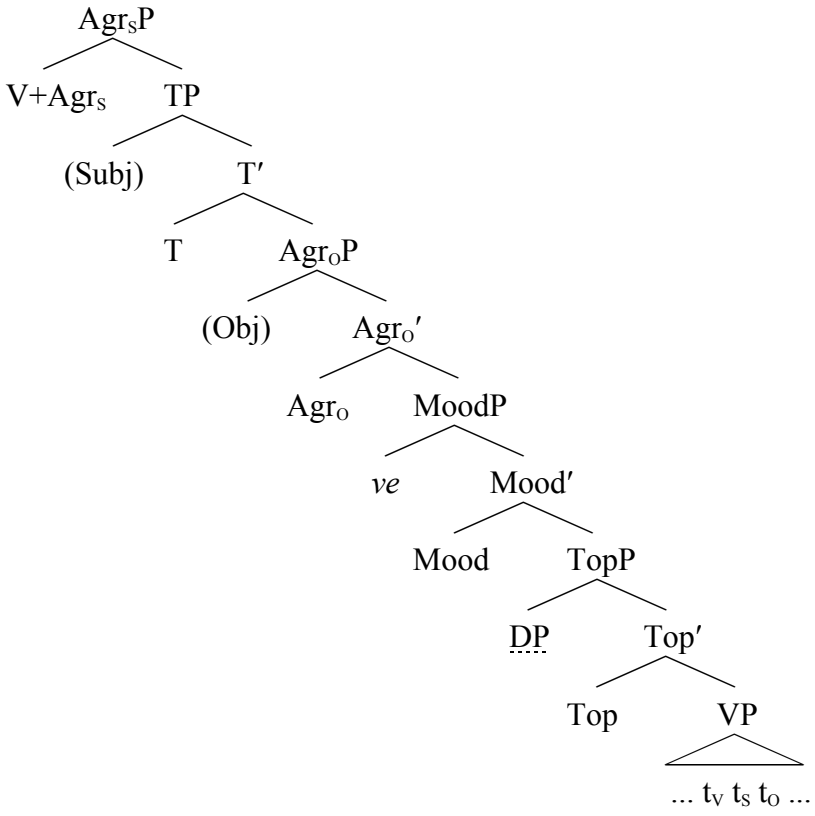
However, these objections do not seem especially compelling. For a start, it is not at all clear that the Proper Binding Condition (a constraint on representations) has any place within a purely derivational framework, such as the Minimalist framework assumed here. More to the point, the empirical evidence for at least some cases of remnant movement—and of the reconstruction of moved remnants—appears to be quite strong (cf. Webelhuth & den Besten 1989, den Besten & Webelhuth 1990, and Müller 1998 on remnant VP topicalization in German, for exam-

ple). Thus, whatever explanation we choose to offer for remnant movement, it is clear that our theory must accommodate this phenomenon somehow.

As a further objection to (11), Pensalfini argues that, proper binding aside, TP would need to reconstruct in order to allow the T+V complex to raise out and adjoin to Agr_S^0 at LF, in violation of a constraint proposed by Collins (1993), prohibiting derivations in which an XP reconstructs in order to permit a head to raise out of it to check a feature. However, this objection stems from secondary assumptions about the structure in (11) for which no independent motivation is given. Pensalfini offers no evidence that the external argument occupies the specifier of an Agr head, nor does he explain why the T+V complex must adjoin to this head at LF. On the contrary, as I showed in chapter 3, there is considerable evidence that the EA is sitting in an A′-position rather than a case/agreement position.

As an alternative to the TP-raising analysis, Pensalfini proposes a 'cascade' structure for Malagasy of the sort shown in (12), in which the surface word order is derived through standard head-adjunction and specifier-to-specifier movement rather than the pied-piping of large XPs:

(12)



Here, as in (11), the subject and object are generated within VP. Whichever dependent of the verb is selected as the EA raises into the specifier of TopP, located immediately above VP, while the other arguments and adjuncts raise higher up into case-checking positions (SpecAgr_OP for non-externalized objects, SpecTP for non-externalized subjects). Finally, the verb undergoes head-to-head movement, ending up in Agr_S^0 by spell-out. Speech-act particles like *ve* are located in the specifier of a projection dubbed MoodP, which dominates TopP. The primary empirical motivation for this structure appears to be the fact, noted in 2.1, that certain kinds of adverbials and embedded clauses may follow the EA. Lacking features to check, these elements would re-

main inside VP, and consequently they would be spelled out to the right of the constituent in SpecTopP. (I turn to the issue of post-EA constituents in 4.2.2–4.2.3.)

While a cascade-style analysis accounts for the basic word order facts in a straightforward way, the structure in (12) is problematic on a number of fronts. For a start, (12) makes incorrect predictions about constituency. As I showed in 2.1, the predicate phrase, consisting of the verb and its non-externalized dependents, is treated as a constituent for purposes of coordination (the relevant examples are repeated in (13) below). In (12), however, the verb does not form a constituent with its non-externalized dependents to the exclusion of the EA in SpecTopP.

(13) a. Misotro toaka sy mihinam-bary Rakoto
NomP.drink rum and NomP.eat-rice Rakoto
"Rakoto is drinking rum and eating rice"

b. Henon-dRabe sy nojeren-dRajaona ny mpihira gasy
heard-Rabe and Pst-AccP.watch-Rajaona Det folksinger
"The folksinger, Rabe heard (him) and Rajaona watched (him)"

(12) is also suspicious on typological grounds. There is a general concensus in the literature that topics and force-related features/morphemes are situated in high functional projections within the C-domain of the clause (Chomsky 1977, 1981, 1995; Rizzi 1997; and countless others). Thus the idea that topics and question particles in Malagasy would occupy low positions within the I-domain (below tense- and case/agreement-related projections) seems improbable. Pensalfini justifies his low placement of TopP by drawing a parallel with the F(ocus)P projection of Hungarian, which various authors have argued to be situated immediately above VP (e.g., Horvath 1986, Kiss 1994). However, even if the Hungarian analysis is correct (Koopman & Szabolcsi 2000 and Szalai 1999 argue that FP is actually above TP), FP is quite different from TopP in Malagasy, both syntactically and semantically. The constituent occupying the EA position in Malagasy represents old information (the *topic*, or *theme*, of the clause), while the Hungarian focus position is associated with new information (the *comment*, or *rheme*). SpecFP in Hungarian is the locus of focused constituents and wh-phrases, which are prohibited from occurring in the EA position in Malagasy.

A further problem with the cascade structure in (12) is that it would require us to make unorthodox stipulations about binding and reconstruction in Malagasy, not unlike the stipulations required by GHT's split-subject analysis (section 3.2.2). Consider a simple reflexive sentence like (14), where the EA binds an anaphor inside the predicate:

(14) Manaja ny tenany i Tenda
NomP.respect Det self-3 Det Tenda
"Tenda respects himself"

According to the cascade analysis in (12), the external argument *i Tenda* raises from the specifier of VP to the specifier of TopP to check a topic feature, while the anaphor *ny tenany* raises from the complement of V^0 to the specifier of Agr_OP to check an agreement feature. This means that the anaphor locally c-commands—and consequently A-binds—its antecedent at spell-out. In order to avoid violations of Binding Conditions B and C, the anaphor would have to reconstruct into its base position below the antecedent at LF. However, SpecAgr_OP is an A-position, from

which reconstruction of an anaphor is generally assumed to be impossible (see 3.2). We would thus need to stipulate that reconstruction from an A-position is possible in Malagasy but not in other languages.

Moreover, notice that if we switch the positions of the anaphor and antecedent, the sentence becomes ungrammatical:

(15) * Manaja i Tenda ny tenany
NomP.respect Det Tenda Det self-3
"Himself respects Tenda"

If *i Tenda* in (15) is sitting in an A-position from which it asymmetrically c-commands the EA *ny tenany* (and if the anaphor is within the binding domain of its antecedent, as seems reasonable to assume), it is unclear why this sentence should be ungrammatical. To explain the unacceptability of (15) within the cascade theory, we would need to stipulate not only that reconstruction from a case position is *possible* in Malagasy, but that it is *obligatory* (while being impossible, or at best optional, in other languages). As I remarked in 3.2.2, stipulations of this sort run counter to the spirit of the Minimalist program, which seeks to eliminate the need for language-specific binding principles (cf. Chomsky 1995, chapter 3).

Alternative analyses of the facts in (14)–(15) seem equally unappealing: To avoid having to impose language-specific parameters on binding or reconstruction, we might argue that the EA raises covertly from its surface position to the appropriate agreement position. However, while this operation would create the correct hierarchical configurations at LF, it would necessitate movement from an A′-position (SpecTopP) to an A-position (SpecAgr_OP, SpecTP), a type of operation that is generally ruled out.

In addition to these problems, the cascade analysis is incapable of dealing with the facts presented in 4.4 below, pertaining to the position of the external argument in embedded clauses and the placement of the yes/no question particle *ve*. I therefore conclude that Pensalfini's cascade analysis—or indeed any account of EA-final order in which the external argument is c-commanded by non-externalized arguments, as in (10)—cannot be made to work. Instead, I will argue for a pied-piping analysis more in the spirit of the TP-raising structure in (11). I turn to the details of this analysis in the next section.

4.2. An XP-movement analysis of Malagasy word order

Here I argue for a derivational account of Malagasy word order which, like Pensalfini (1995), is compatible with Kayne's LCA, but which avoids the empirical problems of Pensalfini's analysis. Under my account, the right-peripheral position of the EA is derived through movement of the predicate phrase to a position above the EA. In particular, I will argue that PivP, containing the verb complex and its dependents, undergoes leftward movement to become the outer specifier of TopP, thereby ending up to the left of the EA (licensed in the inner specifier of TopP) prior to spell-out. In 4.2.1 I lay out the details of this analysis and illustrate it with some sample derivations. Then in 4.2.2–4.2.3 I consider the position of other right-peripheral elements, including sentential adverbs and extraposed complement clauses, before moving on to the issue of empirical and conceptual motivation in 4.3 and 4.4

4.2.1. Deriving EA-final order through phrasal movement

Before proceeding to the analysis, let me first review some assumptions about Malagasy phrase structure, as established in chapters 2 and 3 (see especially sections 2.3.3 and 3.1.3). For simple transitive clauses, I adopt the projection hierarchy shown in (16), with the surface positions of the EA, verb, and PredP-internal subjects and objects indicated:

(16) $[_{FrcP}\ [_{TopP}\ \underline{EA}\ [_{PivP}\ [_{TP}\ [_{EP}\ V\ [_{Asp\textit{e}P}\ (Subj)\ [_{\textit{v}P}\ [_{Asp\textit{r}P}\ (Obj)\ [_{VP}\ ]\ ]\ ]\ ]\ ]\ ]\ ]\ ]\ ]$

Starting at the top of the structure in (16) and working down: As discussed in 3.1.3, I assume that the C-domain of the clause is comprised of (at least) three separate projections, FrcP, TopP/WhP, and PivP. The head of FrcP is the locus of complementizers such as *fa* "that" and *raha* "whether, if/when", which always occur leftmost in embedded clauses:

(17) a. Fantatro [*fa* namaky ny boky ny mpianatra]
known-Lnk-1s that Pst-NomP.read Det book Det student
"I know that the student read the book"

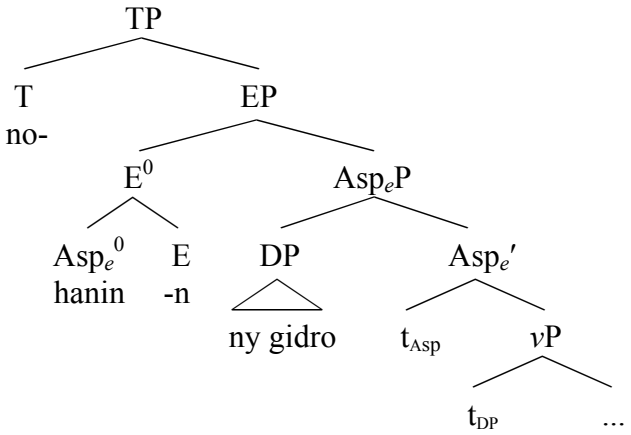
b. [*Raha* vonoinareo aho], dia inona no soa ho azonareo?
if AccP.kill-2p 1s Top what Foc good Irr got-Lnk-2p
"If you kill me, what good will you get (from it)?"

The specifier of TopP provides the landing site for the EA, while the specifier of PivP is the locus for abstract case 'agreement'—i.e., the voice morphology on the verb is determined by the abstract case of the constituent which raises to/through the specifier of this projection. TopP alternates with WhP, which hosts wh-operators in relative clauses, clefts, and *dia*-topic constructions (sections 3.4.1–3.4.3). The element in the specifier of TopP/WhP must form a chain with an element in the specifier of PivP.

TP marks the upper boundary of the verbal domain of the clause (the *predicate phrase*). Within TP, subjects and objects are generated in VP-shells, and raise to licensing positions in the specifiers of aspect-related heads. As discussed in 2.3.3, I assume that the verb stem raises as far as the EP projection, immediately below the tense morpheme in T^0, which attaches to the verb as a proclitic at PF. In non-NomP clauses, the verb stem adjoins to the linking morpheme *-n*, generated in E^0. Immediately right-adjacent to E^0 is the specifier of $Asp_{\textit{e}}P$, in which postverbal subjects are licensed. Consider the tree in (18b), which illustrates the structure for the verb complex *nohanin'ny gidro* in (18a). This verb complex is comprised of the past tense marker *no-*, the AccP verb stem *hanin* (< *han* "eat" + *-in*), the linking morpheme *-n*, and the subject *ny gidro* "the lemur":

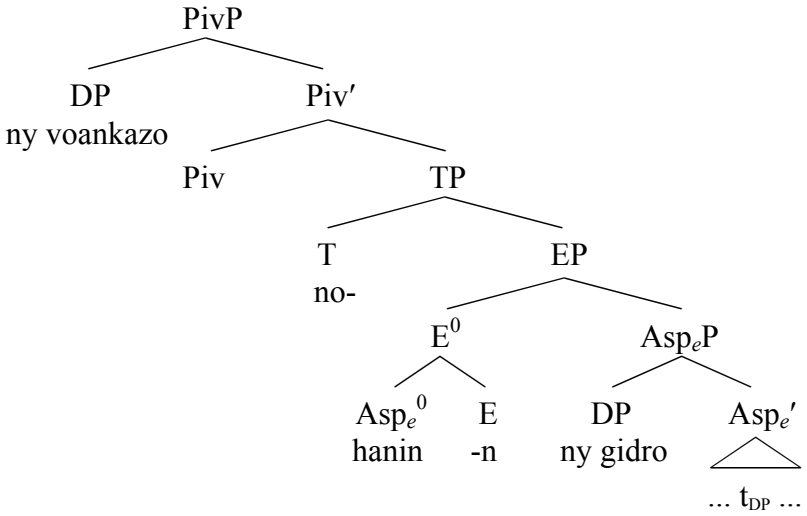
(18) a. Nohanin'ny gidro ny voankazo
Pst-AccP.eat-Det lemur Det fruit
"The lemur ate the fruit"

b.



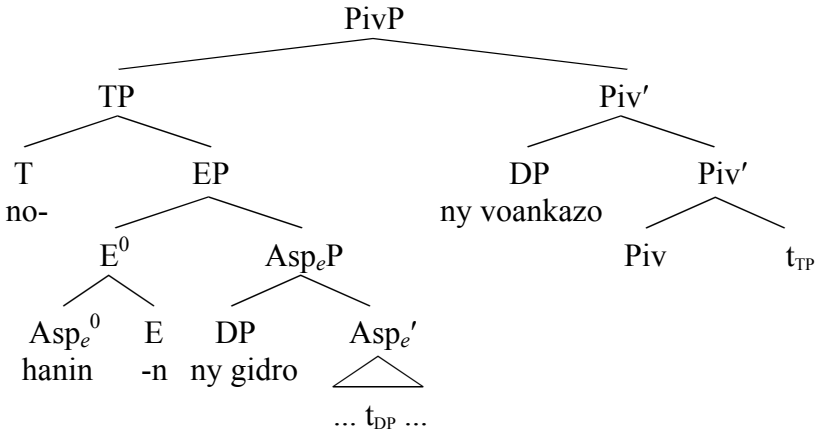
Based on the structure in (16), the surface order of the clause, where the external argument in SpecTopP occupies a right-peripheral position, may be derived straightforwardly by means of successive XP-movement, as follows: Take the sentence in (18a) as an example. We begin at the point in the derivation where T has merged with Asp$_e$P to form TP, as in (18b). The Piv head then merges with TP to form PivP, after which Piv attracts the object *ny voankazo* "the fruit" into its specifier to check its [op] feature, producing the structure in (19):

(19)



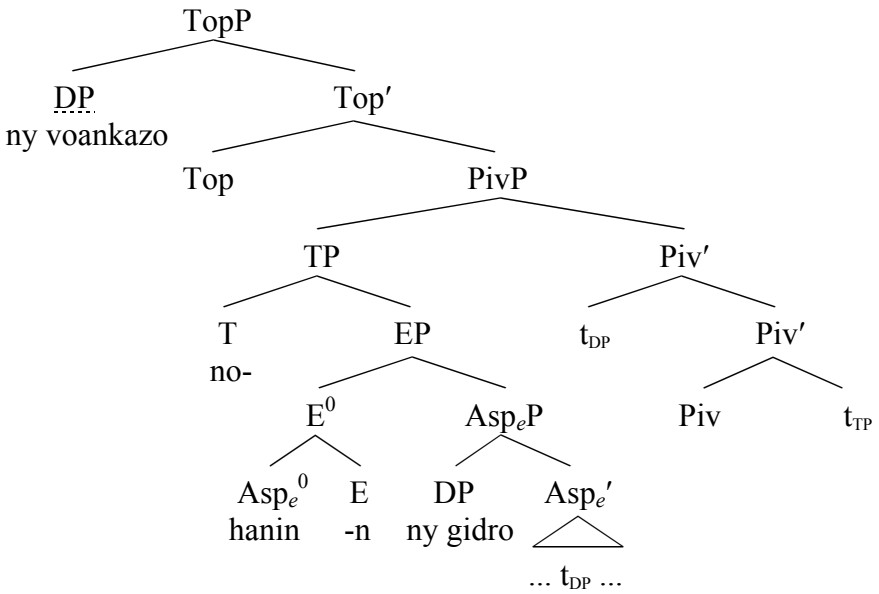
Next, the TP *nohanin'ny gidro* "eaten by the lemur" (containing the trace of the extracted object) raises to become a second, outer specifier to the PivP projection, as in (20). This causes the predicate to invert with object (I discuss the reasons for this movement in 4.3):

(20)



The structure in (20) then merges with Top to form TopP, and the object is attracted again (this time by the [D] and [op] features of Top^0), causing it to raise into the checking domain of TopP. The result is the structure in (21), in which the object is sitting in the EA position of the clause:

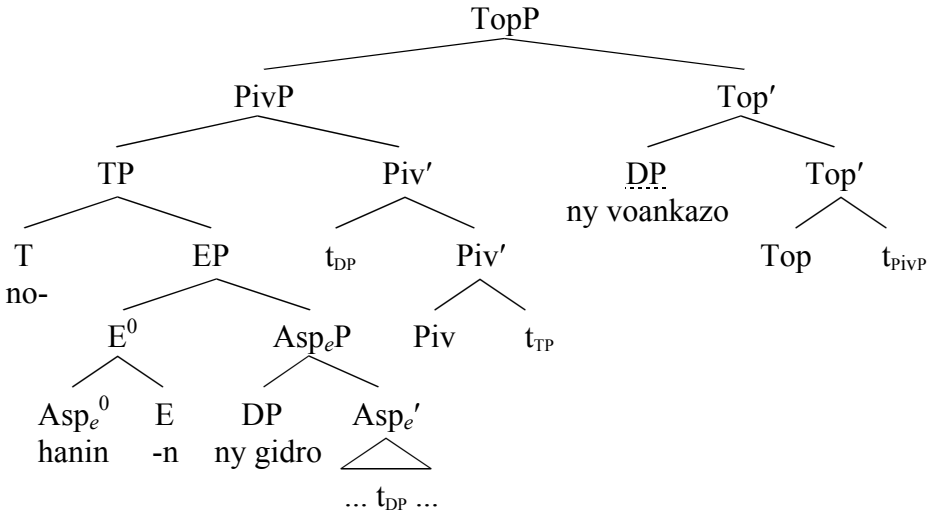
(21)



Finally, PivP raises over the EA and merges to become a second, outer specifier of TopP, creating the surface configuration in (22) (again, I discuss the motivation for this movement in 4.3). Because PivP has undergone movement to a position in which it asymmetrically c-commands the EA, the predicate phrase will be spelled out to the left of the EA when the structure is sent to PF.[4]

[4] Notice that in this two-stage derivation, where TP raises to PivP and PivP raises to TopP, the EA and predicate phrase undergo inversion twice. This double adjunction is necessary in order to derive the correct surface order in cases of long-distance externalization, as discussed below.

(22)



This process of successive XP-movement also derives the correct order in wh-questions and sentences involving constituent focus. As discussed in 3.4.2, such sentences take the form of clefts, in which the focused constituent or wh-phrase is contained within the matrix PredP, while the EA position is occupied by a constituent containing a null operator, which is interpreted as a headless relative (or free relative). The sentences in (23a-b), for example, have the structure in (23c) (the meaning is literally something like "That which you were reading in the garden [was] {the book / what}?"):

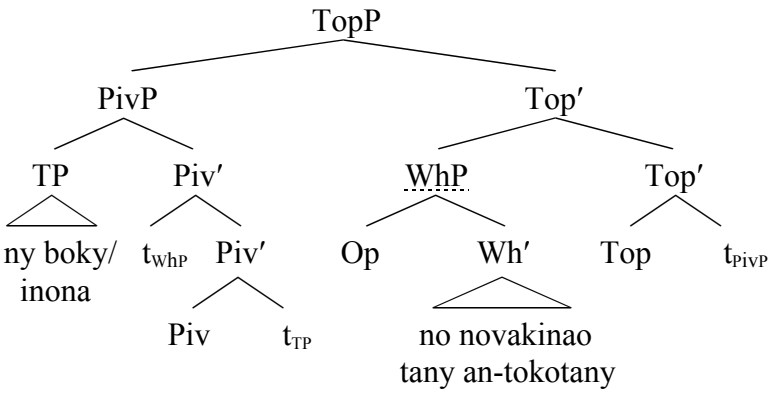
(23) a. Ny boky no novakinao tany an-tokotany?
Det book Foc Pst-AccP.read-2s Pst-there Obl-garden
"It's *the book* that you were reading in the garden"

b. Inona no novakinao tany an-tokotany?
what Foc Pst-AccP.read-2s Pst-there Obl-garden
"What were you reading in the garden?"

c. $[_{PredP}$ {ny boky / inona}$_i$ $]$ $[_{WhP}$ Op_i no novakinao t_i tany an-tokotany $]_i$

The left-peripheral position of the wh/focus constituent is explained straightforwardly by the fact that it is contained within the predicate phrase, which raises leftward over the position in which the external argument is licensed (PivP becomes the outer specifier of TopP). The tree structure for (23a-b) is thus essentially the same as in (22): The only important differences are that the TP constituent contains the clefted element (*ny boky* "the book" or *inona* "what"), while the inner specifier of TopP is occupied by a free relative constituent of category WhP, *no novakinao tany an-tokotany* "(that which) you read in the garden", with a null operator in its specifier:

(24)



Having illustrated the basic predicate-fronting analysis, let me turn to a more complicated example, one involving long-distance externalization, as in (25):

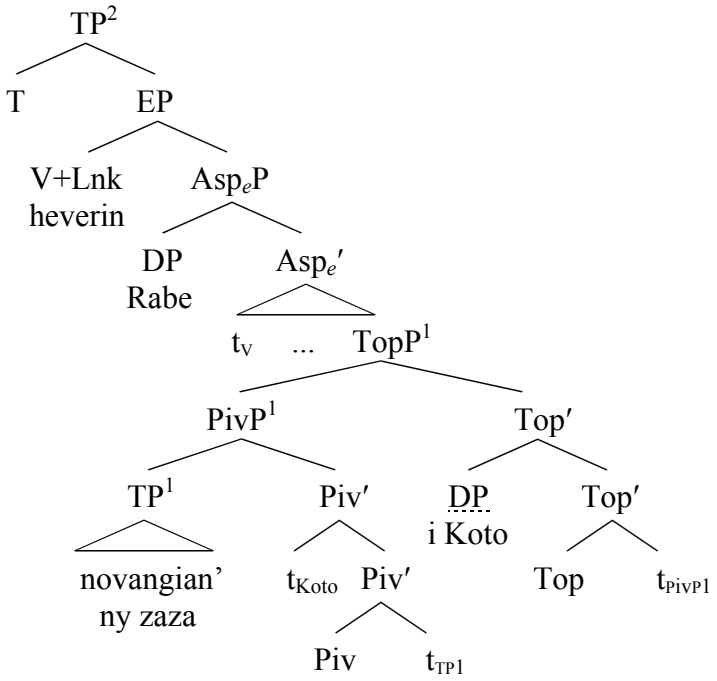
(25) Heverin-dRabe novangian'ny zaza i Koto
AccP.think-Rabe Pst-DatP.visit-Det child Det Koto
"Koto, Rabe thinks the child visited (him)"

The principal complication here involves the fact that the EA, *i Koto*, pied-pipes the embedded clause into the matrix SpecPivP position, and then extracts from the clause and raises on to the specifier of the matrix TopP, as discussed in 3.3.2.[5] Meanwhile, the matrix predicate (*heverin-dRabe*) raises to become the outer specifier of PivP, after which PivP (*heverin-dRabe* plus the embedded clause remnant in the inner SpecPivP, *novangian'ny zaza*) raises to become the outer specifier of TopP, deriving the correct surface order. I go through the derivation step by step immediately below:

We begin at the point in the derivation prior to the attraction of the embedded TopP to the matrix SpecPivP: The embedded clause is constructed according to the steps in (18)–(22) above, and the resulting structure is selected by the matrix verb *hever* "think". After the merger of the matrix verb with its subject, and the addition of the Asp_eP, EP, and TP layers, the result is the structure in (26):

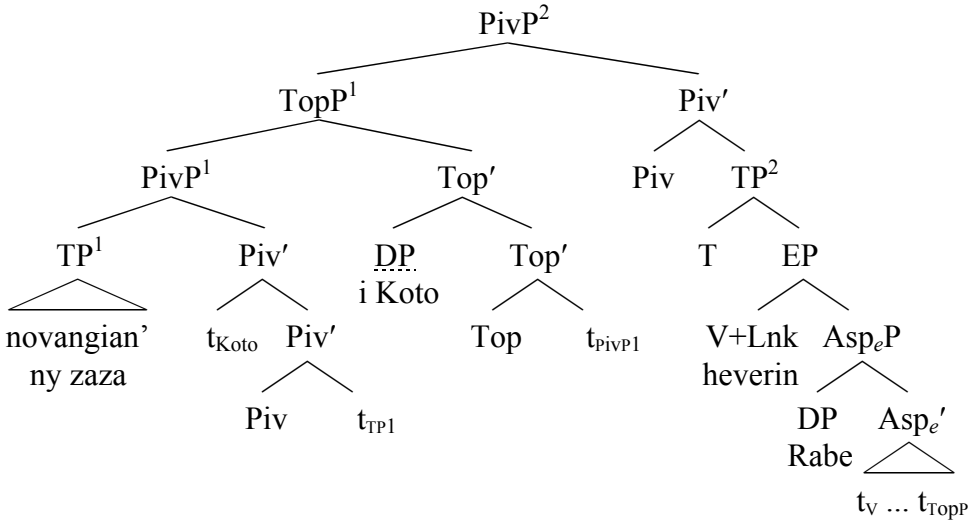
[5] Recall that the reason why *i Koto* extracts from the embedded clause, instead of pied-piping the clause to SpecTopP, is that Top^0 has a [D] feature to check. Thus, while the specifier of PivP can host any element with an [op] feature, the specifier of TopP is restricted to constituents of category DP.

(26)



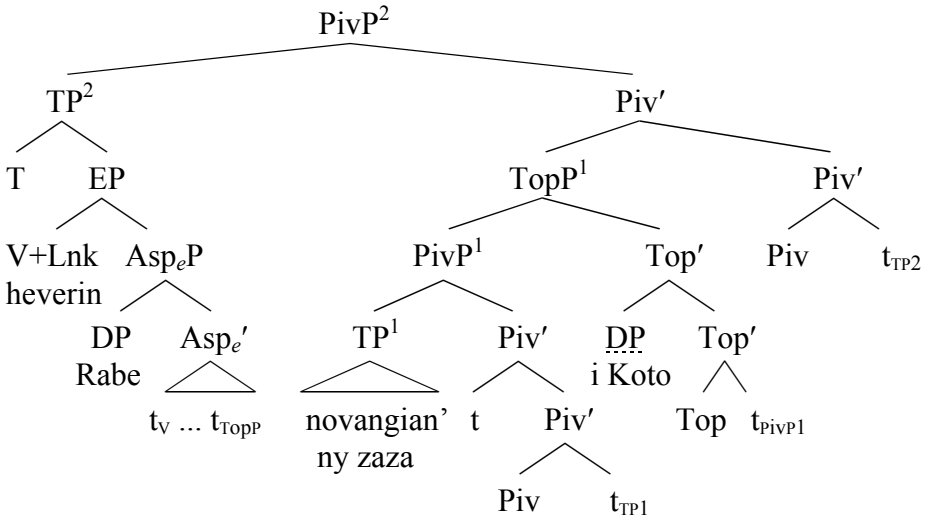
Next, the structure in (26) combines with Piv to form the matrix pivot phrase (identified below as PivP^2, to distinguish it from the embedded pivot phrase, PivP^1). The matrix Piv then attracts the embedded clause (TopP^1), which raises to become the specifier of PivP^2, as in (27). Since TopP^1 is the complement of the matrix verb, licensed in the specifier of Asp$_r$P, this move triggers accusative-pivot voice marking on the matrix verb, as discussed in 3.3.

(27)



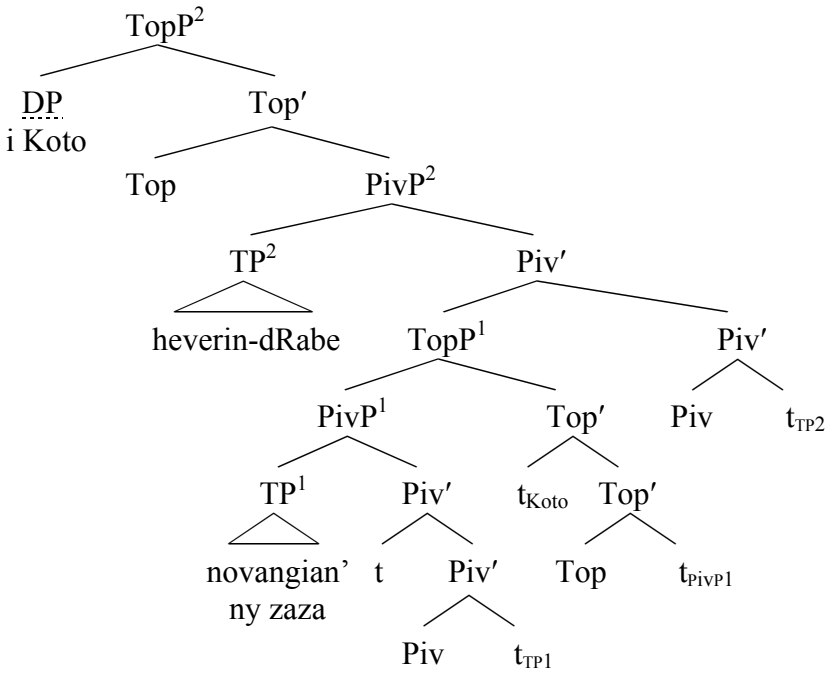
The matrix TP (TP^2) then raises to become the outer specifier of PivP^2, just as in simple clauses (cf. (20)), resulting in the structure in (28):

(28)



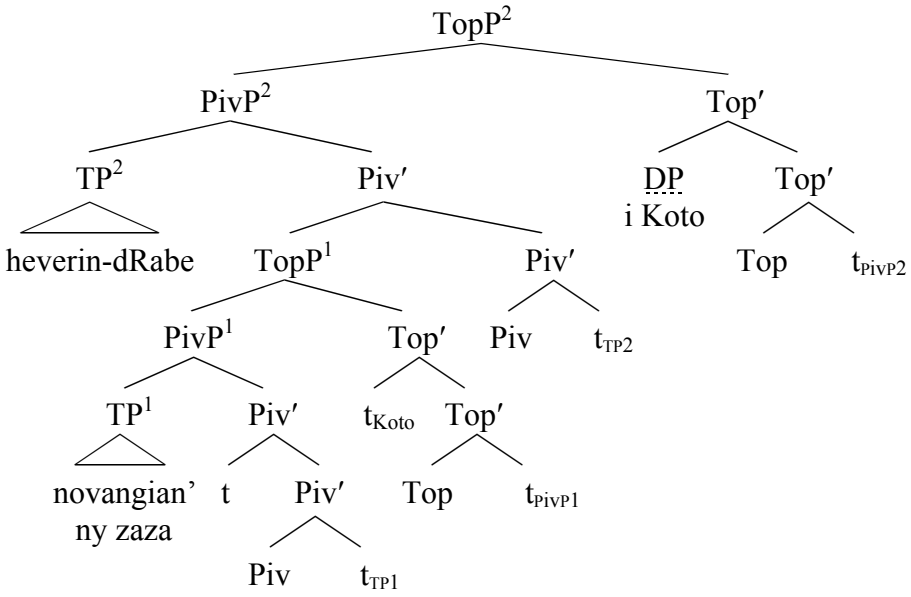
PivP^2 in (28) then merges with the matrix Top head to form TopP^2. Top^0 then attracts the closest constituent containing both an [op] and a [D] feature, namely *i Koto*, which raises to become the specifier of TopP^2 (29):

(29)



Finally, PivP^2 raises and merges as the outer specifier of TopP^2, producing the correct surface order, in which the predicate phrase *heverin-dRabe novangian'ny zaza* ***t*** "Rabe thinks that the child visited **t**" precedes the external argument *i Koto*:

(30)



Before discussing the further details of this analysis, I offer some speculations on the position of other right-peripheral elements in the clause. In 4.2.2, I consider the position of sentential adverbs and clause-final PPs. Then in 4.2.3 I discuss extraposed clauses.

4.2.2. The position of clause-final adverbials

Recall from 2.1 that certain sentence-level adverbs such as *omaly* "yesterday" generally occur outside the predicate phrase, following the EA, as illustrated in (31) (where *ve* marks the right edge of the predicate phrase):

(31) Namaky ny boky ve ny mpianatra *omaly*?
Pst-NomP.read Det book Qu Det student yesterday
"Was the student reading the book yesterday?"

Locative expressions such as *tany am-pianarana* "in school" may also occur in this position, as shown in (32a) (example adapted from Rajemisa-Raolison 1971). However, while sentential adverbs like "yesterday" almost always occur in this position, locatives also frequently occur inside the predicate phrase, as in (32b):

(32) a. Nanoratra taratasy ny zazavavy tany am-pianarana
Pst-NomP.write letter Det girl Pst-there Obl-school
"The girl wrote a letter in school"

b. Nanoratra taratasy tany am-pianarana ny zazavavy
Pst-NomP.write letter Pst-there Obl-school Det girl
"The girl wrote a letter in school"

The placement of the locative appears to depend on whether or not it is interpreted presuppositionally: If it forms part of the background information of the clause, which helps 'set the stage'

by providing a spatial or temporal context for the event denoted by the predicate, then it typically appears after the EA. However, if the locative expresses new information, and thus contributes to the assertion part of the utterance, it must appear inside the predicate phrase. Consider the examples in (33a-b), which illustrate the scopal interaction between the locative *tany an-tokotany* "in the garden" and the yes/no question particle *ve*. In (33a), where *tany an-tokotany* is inside the predicate phrase, it is included within the scope of the question operator (the speaker presupposes "Tenda did *x*", and asks if *x* = "read a book in the garden"). In (33b), *tany an-tokotany* occurs after the EA, and is thus outside the scope of the question operator (the speaker presupposes "Tenda did *x* in the garden", and asks if *x* = "read a book").

(33) a. Namaky boky tany an-tokotany ve i Tenda?
Pst-NomP.read book Pst-there Obl-garden Qu Det Tenda
"Was Tenda reading a book in the garden?"
i.e. "Was reading a book in the garden what Tenda was doing?"

b. Namaky boky ve i Tenda tany an-tokotany?
Pst-NomP.read book Qu Det Tenda Pst-there Obl-garden
"Was Tenda reading a book in the garden?"
i.e. "Was reading a book what Tenda was doing in the garden?"

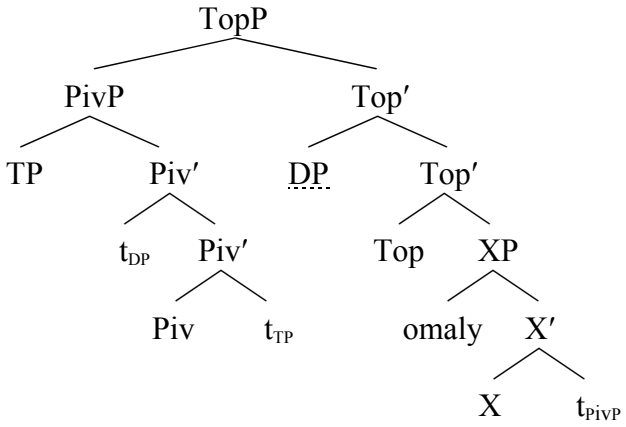
Malagasy is not the only language in which spatio-temporal locatives and sentential adverbs occur in the immediate neighborhood of topicalized DPs. In Hungarian, for example, such elements generally occur in a preverbal position, right-adjacent to the position to which topics raise (Kiss 1994, Szabolcsi 1997). In (34), for example, the temporal adverb *tegnap* "yesterday" and the stage-setting PP *az órán* "in class" immediately follow the topic *a tanár* "the teacher" and precede the other constituents in the clause:

(34) A tanár *tegnap* *az órán* minden kérdést megválaszolt
Det teacher yesterday Det class-on every question-Acc answered
"Yesterday in class the teacher answered every question"

Within the context of the phrasal-movement analysis presented in the previous section, various approaches to right-peripheral adverbials are possible. One option is to locate these elements in the specifier of a projection XP, which optionally merges below TopP and above PivP, as in (35).[6] To derive the correct surface order, we would need to assume either that PivP raises from the complement of X^0 to the specifier of TopP in a single step, as I have indicated in the tree, or that PivP first merges as a specifier of XP, and then extracts from that SpecXP position and raises on to SpecTopP, stranding the adverb.

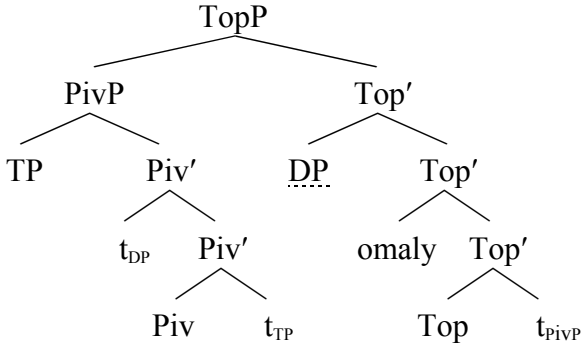
[6] Since it licenses sentential adverbs like "yesterday", XP is perhaps equatable with one of the high projections in Cinque's (1999) hierarchy of functional categories, which he posits to explain ordering restrictions among adverbs of different classes.

(35)



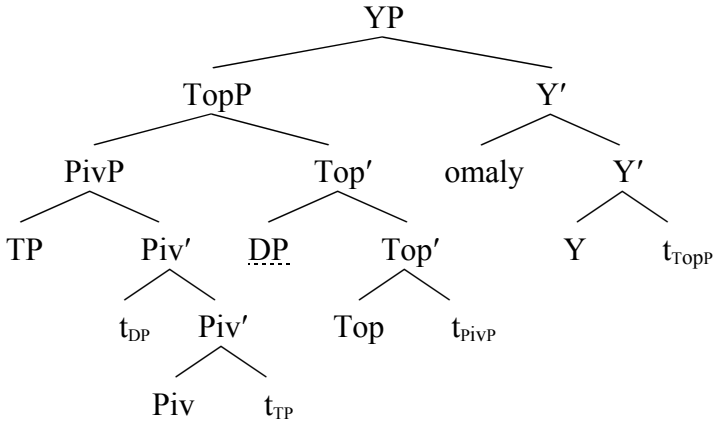
Given my assumption that a projection may include multiple specifiers, a second option would be to assume that stage-setting adverbs are generated in the innermost specifier of TopP, and that the EA and the PivP constituent both raise to become outer specifiers, producing the structure in (36):

(36)



A final option is that stage-setting adverbials occupy a higher projection YP. TopP raises over the adverb to become the outer specifier of this projection, as in (37), yielding the correct surface order:

(37)



This third option makes the wrong prediction with regard to the placement of the yes/no question particle *ve*, given other assumptions. In 4.4.1 I argue, following Paul (1999), that *ve*-placement targets the right edge of the highest specifier in the clause. In (37), the highest specifier is TopP. We thus predict that in a question containing both an EA and a following adverbial, *ve* will occur between the EA and the adverbial. However, this prediction is not borne out; instead, *ve* precedes the EA, as shown in (38):

(38) a. * Namaky ny boky ny mpianatra *ve* omaly?
Pst-NomP.read Det book Det student Qu yesterday
"Was the student reading the book yesterday?"

b. Namaky ny boky *ve* ny mpianatra omaly?
Pst-NomP.read Det book Qu Det student yesterday
"Was the student reading the book yesterday?"

The analysis in (37) is therefore ruled out. Of the two remaining analyses, (36) is more parsimonious than (35) from the perspective of movement, insofar as it allows us to derive the correct surface word order by means of a simple 'roll-up' structure, where each maximal projection raises into the specifier of the next higher one. For this reason, and for additional reasons to be discussed in 4.3.1, I will opt for the analysis in (36), according to which sentential adverbs occupy the innermost specifier of TopP.

4.2.3. The position of extraposed clauses

In addition to sentential adverbials, complement and adverbial clauses routinely occur at the right edge of the clause, following the external argument, as illustrated in (39):

(39) a. Manantena i Tenda [fa hamono ny akoho Ranaivo]
NomP.hope Det Tenda that Irr-NomP.kill Det chicken Ranaivo
"Tenda hopes that Ranaivo will kill the chicken"

b. Tsy maintsy nandalo amin'ny lavabato izy [vao tonga tany]
necessary Pst-NomP.pass in-Det cave 3 before arrive Pst-there
"They had to pass through a cave to get there [lit. before arriving there]"

c. Taitra izy roalahy [nahare izany vaovao izany]
surprised 3 two-male Pst-NomP.hear that news that
"The two men were surprised to hear the news"

This is highly suggestive of CP extraposition in English and other languages, which is traditionally analyzed in terms of right adjunction. Under Kayne's (1994) Antisymmetry theory, right adjunction is ruled out in principle; however, its effects may be obtained through a succession of leftward movements: For example, the word order in (39) can be derived by first extracting the CP from the predicate and raising it to some left-peripheral position, above PivP but below TopP (40a), then raising the EA over the CP into SpecTopP (40b), and finally raising PivP (containing the matrix verb and the traces of the CP and the EA) to become the outer specifier of TopP (40c).

The result is a structure not unlike (35), where the CP complement occupies a position analogous to that of sentential adverbs like *omaly*.

(40) a. $[_{XP}\ \mathbf{CP}_i\ [_{PivP}\ \mathbf{EA}\ \mathbf{V}\ t_i\ ]\ ]$

b. $[_{TopP}\ \mathbf{EA}_j\ [_{XP}\ \mathbf{CP}_i\ [_{PivP}\ t_j\ \mathbf{V}\ t_i\ ]\ ]\ ]$

c. $[_{TopP}\ [_{PivP}\ t_i\ \mathbf{V}\ t_j\ ]_k\ [_{Top'}\ \mathbf{EA}_j\ [_{XP}\ \mathbf{CP}_i\ t_k\ ]\ ]$

However, whereas sentential adverbs are either generated in a high scopal position, or plausibly move to such a position on account of their association with the presuppositional content of the clause, it is not obvious what would motivate CPs to raise out of the predicate phrase, other than the need to obtain the correct surface word order.

An alternative treatment of CP extraposition is suggested by the copy theory of movement (cf. Chomsky 1995, chapter 3). According to this theory, the attraction of a constituent X into a checking domain Y involves not the displacement of X into Y, leaving a phonetically null trace, but the creation of a copy of X which merges in Y. A movement chain is thus comprised of a pair of identical feature bundles, one in the base position and the other in the checking position. In order to prevent multiple copies from being spelled out, a deletion rule applies at PF to erase redundant phonological features from multi-member chains.

The properties of this deletion rule are poorly understood. In paradigmatic cases, it is the features of the *head* of the chain—viz., the member of the chain that asymmetrically c-commands the other members—which are retained at PF, while the features of the tail are deleted, as in (41). This operation is known as *forward deletion*. However, it is also in principle possible to delete the features of the head and retain the features of the tail, resulting in *backward deletion*. Although the existence of backward deletion is controversial, a number of authors (e.g., Pesetsky 1998) have suggested that covert movement involves just such a mechanism. For example, (42a) might have the structure in (42b), where the tail of the quantifier-raising chain is pronounced, while the head of the chain is deleted. According to this approach, the difference between overt and covert movement is not a matter of timing (before spell-out versus after spell-out) but of the way in which chains are processed/interpreted at PF (pronunciation of the head versus pronunciation of the tail).[7]

(41) a. Which movie does Andrea most want to see?

b. [which movie]$_i$ does Andrea most want to see [~~which movie~~]$_i$?

(42) a. The professor talked to each student about the reading

b. [~~each student~~]$_i$ the professor talked to [each student]$_i$ about the reading

Wilder (1995) takes this approach one step further, arguing that in certain cases it is possible to perform forward deletion on part of a higher copy and backward deletion on the complementary part of a lower copy, yielding a derivation in which different portions of a constituent are pro-

[7] Chomsky himself appears to advocate this approach to the overt/covert movement distinction in his 1998 manuscript, which extends and develops the minimalist proposals of Chomsky (1995).

nounced in different links of the chain. We may refer to this operation as *discontinuous deletion*. Wilder argues that a number of phenomena may be explained in terms of discontinuous deletion, including CP and PP extraposition in English and German.

Consider the examples in (43) below, taken from Hinterhölzl (1998), who adopts and develops Wilder's analysis: In keeping with the requirements of Kayne's LCA, Hinterhölzl argues that German is head-initial, and that OV order in embedded clauses is derived through leftward movement of the object to a position above the highest surface position of the verb (cf. Zwart 1993 on Dutch). Thus the direct object DP *ein Buch über Chomsky* "a book about Chomsky" starts out to the right of the verb and raises leftward, perhaps to check its case feature. In (43a), where the DP appears to the left of the verb, object raising followed by forward deletion derives the surface order straightforwardly. In (43b), however, where the PP modifier is stranded to the right of the verb, the surface order is obtained by applying forward deletion to *ein Buch* and backward deletion to *über Chomsky*, as in (43c), causing the PP to be pronounced in the tail position of the movement chain.

(43) a. Hans hat *ein Buch über Chomsky* gekauft
Hans has a book about Chomsky bought
"Hans bought a book about Chomsky"

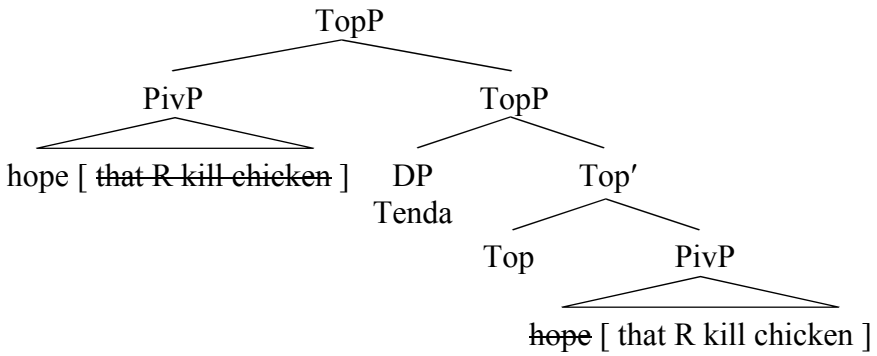
b. Hans hat *ein Buch* gekauft *über Chomsky*
Hans has a book bought about Chomsky
"Hans bought a book about Chomsky"

c. Hans hat [ein Buch ~~über Chomsky~~]$_i$ gekauft [~~ein Buch~~ über Chomsky]$_i$

If we adopt this discontinuous deletion strategy, then the right-peripheral position of CPs in Malagasy can be taken to follow straightforwardly from the fact that the predicate phrase raises leftward over the position of the EA. Consider the example in (39a), repeated below as (44a): The PivP constituent, containing the matrix verb and its CP complement, raises to become the outer specifier of TopP. At spell-out the verb is pronounced in the moved position of PivP, to the left of the EA *i Tenda*, while the CP is pronounced in the base position of PivP, to the right of the EA (44b):

(44) a. Manantena i Tenda [fa hamono ny akoho Ranaivo]
NomP.hope Det Tenda that Irr-NomP.kill Det chicken Ranaivo
"Tenda hopes that Ranaivo will kill the chicken"

b.



Of course, introducing a mechanism which selectively deletes subparts of copies at PF renders the phonological component much more powerful than is generally assumed. In order to avoid massive overgeneration, we would need to establish principled constraints limiting the application of discontinuous deletion. For example, we would need some way to rule out derivations in which the DP complement of a NomP verb is spelled out in the base position of PivP, yielding the ill-formed VSO order in (45) as a PF-variant of (46):

(45) a. * Namono Rasoa ny akoho
Pst-NomP.kill Rasoa Det chicken
"Rasoa killed the chicken"

b. [$_{TopP}$ [$_{PivP}$ namono ~~ny akoho~~] [$_{Top'}$ Rasoa [$_{PivP}$ ~~namono~~ ny akoho]]]

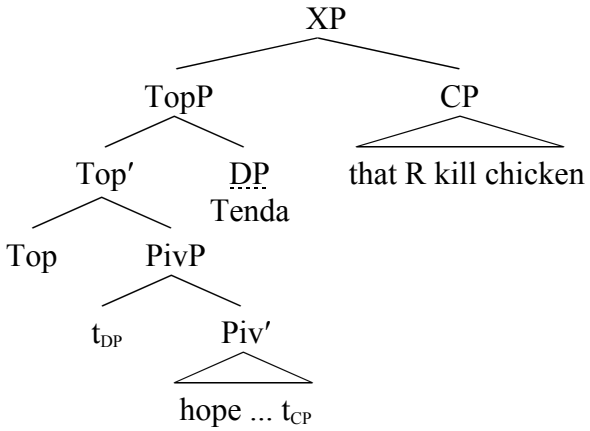
(46) a. Namono ny akoho Rasoa
Pst-NomP.kill Det chicken Rasoa
"Rasoa killed the chicken"

b. [$_{TopP}$ [$_{PivP}$ namono ny akoho] [$_{Top'}$ Rasoa [$_{PivP}$ ~~namono ny akoho~~]]]

How can we constrain discontinuous deletion to rule out (45) while allowing (44)? Wilder suggests that the answer may lie in the mapping between syntactic structure and prosodic structure. Specifically, he proposes that backward deletion may only apply to strings which form prosodic constituents of a particular type. More generally, PF deletion of redundant phonological features must create strings which can be properly parsed by the prosody. Applying this idea to Malagasy, we might speculate that CP complements form prosodic domains of the appropriate kind to the exclusion of the verbs that select them, whereas DP complements do not.

I will leave a full consideration of CP extraposition for future research. What is important here is that, with regard to the general issue of selecting between the predicate-raising analysis of Malagasy word order argued for here, and the alternative analysis in which the EA occupies a right-specifier (cf. the tree in (2)), the extraposition facts are either neutral on the question, or weigh in favor of the predicate-raising analysis. If the discontinuous deletion approach to extraposition can be made to work, then the placement of the CP to the right of the EA merely reflects the base position of the fronted predicate phrase. On the other hand, if we adopt the right-specifier account, we have no option but to assume that the CP extracts from PivP and raises rightward to a high position in the clause, above TopP, as in (47). We are then left with the problem of explaining this movement, which seems to have no motivation other than to derive the correct surface word order.

(47)



Summarizing section 4.1, I showed that the right-peripheral position of the external argument can be successfully obtained via movement. Specifically, I posited a two-step derivation, where the constituent containing the verb complex and its dependents (TP) raises to the outer specifier of PivP, after which PivP raises to the outer specifier of TopP. This second movement results in the leftward displacement of the predicate phrase over the EA, which is licensed in the inner specifier of TopP. I also suggested how the positions of other right-peripheral elements, such as sentential adverbs and CPs, could be accommodated within such an analysis, either by positing additional movements, or by appealing to Wilder's (1995) discontinuous deletion approach to extraposition, or both.

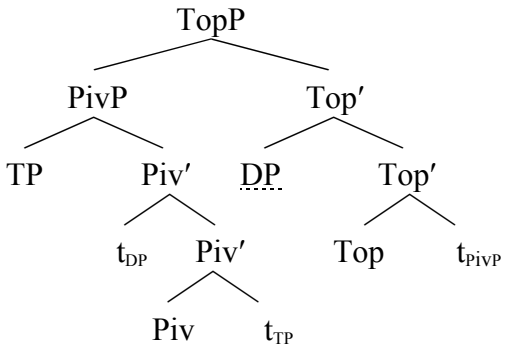
Having laid out the basics of the predicate-raising analysis, I now turn to the issue of conceptual and empirical motivation. In 4.3, I consider the question: Why does the predicate raise over the EA? My answer to this question involves a theory of movement and feature checking which equates predicate-raising with T-to-C movement in verb-second languages. Then in 4.4 I discuss empirical support for the predicate-raising analysis over the right-specifier analysis: I show that the predicate-raising analysis allows for a simpler statement of the rule governing the placement of the yes/no question particle *ve*, and also correctly predicts the existence of EA-initial order in embedded clauses.

4.3. Predicate-initial order and verb-second order

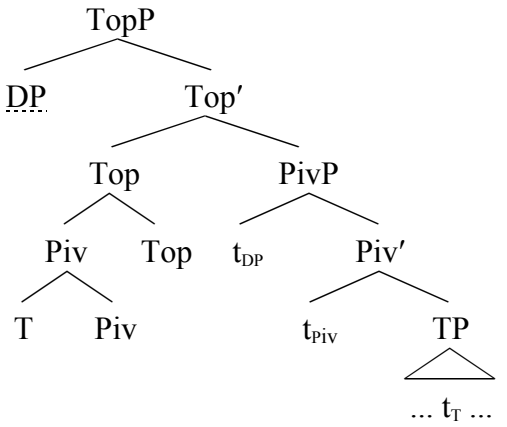
In this section I argue that the structure of the left-periphery of the clause in Malagasy is essentially identical to that of the Germanic verb-second languages (specifically, those of the Yiddish/ Icelandic subtype, which exhibit V2 order in both matrix and embedded contexts). In both Malagasy and V2 languages, I suggest, the attraction of a categorial feature of the TP projection into the C-domain of the clause triggers overt movement. However, Malagasy differs from the V2 languages with regard to the amount of phonological material which the [T] feature carries with it when it raises: In V2 languages, [T] raises as part of the complex head containing the finite verb, T^{0max}. T^{0max} undergoes head-adjunction to Piv^0, which then adjoins to Top^0. The finite verb, contained within T^{0max}, is thus spelled out to the right of the fronted constituent in Spec-TopP. In Malagasy, by contrast, head movement is unavailable for independent morphological reasons (as discussed in 4.3.4), and so the maximal projection TP raises to the outer specifier of PivP, after which PivP raises to the outer specifier of TopP, causing the predicate phrase to be

spelled out to the left of the constituent in the inner SpecTopP. The structures which I will be arguing for are illustrated in (48a-b):

(48) a. *Malagasy*



b. *Germanic (verb-second)*



Thus, I conclude, predicate-initial order and verb-second order are arrived at in essentially the same way—modulo the choice between XP-movement and X^0-movement, which is significant only at PF.

I begin in 4.3.1 by reviewing the evidence for equating the EA position in Malagasy with the position occupied by preverbal topics in V2 clauses (i.e., fronted XPs lacking focus or wh-features). Then in 4.3.2 I lay out the details of the my analysis for unifying Malagasy predicate-fronting with verb-second. In 4.3.3 I suggest that T(P)-raising is motivated by the need for PivP and TopP to inherit a lexical feature from TP, so as to become part of the extended projection of the verb. Finally in 4.3.4 I address the question of why attraction of the [T] feature requires XP-movement in Malagasy, while V2 languages make use of X^0-movement. I speculate that this might have to do with independent morphological differences between the two language types: In V2 languages, the phonological features of T^{0max} constitute a discrete morphological unit, and may thus extract from TP (or, more accurately, be copied into a higher position) without violating PF constraints barring the movement of sub-word constituents. In Malagasy, by contrast, T^{0max} does not form a morphological unit, and so it must pied-pipe the entire TP in order to prevent the derivation from crashing at PF.

4.3.1. The structure of verb-second clauses

In 3.1.2, and elsewhere in chapter 3, I discussed a variety of distributional parallels between the external argument position in Malagasy and the preverbal topic position in Germanic V2 languages. For instance, in both language types the position in question is subject to a general EPP-like requirement (with specific exceptions). Recall also that EAs, like Germanic topics, obey a definiteness restriction—or, more exactly, a specificity restriction. Compare the Malagasy examples in (49) with their Icelandic counterparts in (50):

(49) a. Novidin-dRajaona ny boky
Pst-AccP.buy-Rajaona Det book
"Rajaona bought the book"

b. * Novidin-dRajaona boky
Pst-AccP.buy-Rajaona book
"Rajaona bought a book"

(50) a. Bókina keypti Jón
book-the bought John(Nom)
"John bought the book"

b. ?? Bók keypti Jón
book bought John(Nom)
"John bought a book"

Malagasy EAs and Germanic topics also behave similarly with regard to how they interact with binding, as discussed in 3.2.3. For example, both exhibit reconstruction effects: A pronoun contained within a fronted/externalized object may be bound by a distributive QP subject, as shown in (51a) for Malagasy and (51b) for German:

(51) a. Novangian'ny mpianatra tsirairay$_i$ ny rainy$_i$ omaly
Pst-DatP.visit-Det student each Det father-3 yesterday
"His$_i$ father, each student$_i$ visited yesterday"

b. Seinen$_i$ Vater hat jeder Student$_i$ gestern besucht
his.Acc father has every.Nom student yesterday visited
"His$_i$ father, every student$_i$ visited yesterday"

Despite showing general reconstruction effects, both externalization in Malagasy and topic-fronting in German exhibit an 'anti-weak crossover' effect, whereby externalization of a QP over a c-commanding constituent containing a pronoun facilitates a bound interpretation of that pronoun:

(52) a. * Namangy ny mpianatra tsirairay$_i$ ny rainy$_i$ omaly
Pst-NomP.visit Det student each Det father-3 yesterday
"His$_i$ father visited each student$_i$ yesterday"

b. * Sein$_i$ Vater hat gestern jeden Studenten$_i$ besucht
his.Nom father has yesterday every.Acc student.Acc visited
"His$_i$ father visited every student$_i$ yesterday"

(53) a. (?) Novangian'ny rainy$_i$ ny mpianatra tsirairay$_i$ omaly
Pst-DatP.visit-Det father-3 Det student each yesterday
"Each student$_i$, his$_i$ father visited yesterday"

b. Jeden Studenten$_i$ hat gestern sein$_i$ Vater besucht
every.Acc student.Acc has yesterday his.Nom father visited
"Every student$_i$, his$_i$ father visited yesterday"

Finally, as is well known, topic-fronting in verb-second languages is mutually exclusive with wh-fronting. This is illustrated in (54) for Icelandic:

(54) a. Bókina hefur Steingrímur gefið Maríu
book-the.Acc has Steingrimur.Nom given Maria.Dat
"The book, Steingrimur has given to Maria"

b. *Hverjum* hefur Steingrímur gefið bókina?
who.Dat has Steingrimur.Nom given book-the.Acc
"To whom has Steingrimur given the book?"

c. * *Hverjum* bókina hefur Steingrímur gefið?
who.Dat book-the.Acc has Steingrimur.Nom given
"To whom, the book, has Steingrimur given?"

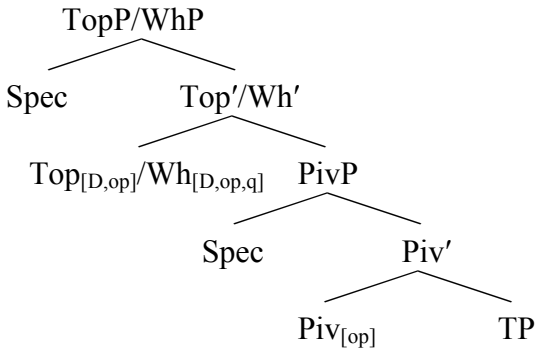
As I discussed in section 3.4, a similar constraint holds in Malagasy (although in the latter case externalization is blocked by a null operator rather than an overt wh-phrase). I argued that this blocking effect is responsible for the voicing restrictions found in relative clauses, clefts, and *dia*-topic constructions.

On the basis of these parallels, I assume that Malagasy EAs and clause-initial topics in Germanic are licensed in the same position. Starting from this assumption, I will argue in this section that the structure of the C-domain in Germanic V2 languages is fundamentally the same as the structure of the C-domain in Malagasy (cf. the tree in (1)). Once this has been established, I go on to argue in 4.3.2–4.3.3 that the word order differences between Malagasy and the verb-second languages follow from a simple difference in how the lexical requirements of heads in the C-domain are satisfied: In the case of verb-second languages, this is accomplished by means of successive head movement. In the case of Malagasy it is accomplished by means of successive XP-movement—specifically, movement of each XP in the C-domain into the specifier of the next higher XP, resulting in a 'roll-up' structure.

According to the standard account of verb-second order, going back to den Besten (1977), the verb raises to C^0, while the clause-initial topic or wh-phrase raises to the specifier of CP. The restriction of the SpecCP slot to one constituent is what derives the second-position status of the verb (but see Travis 1991b for a different view). However, if we assume that the C-domain is actually comprised of a series of functional projections (Rizzi 1997, et al.), then the tradi-

tional account must be modified. Müller & Sternefeld (1993), Zwart (1993), Koopman (1996), Branigan (1998), and others, have argued for various theories involving a multi-layered C-structure for verb-second languages. Here I propose the structure in (55) below, which borrows elements from Müller & Sternefeld, Zwart, and Koopman, and which (not coincidentally) is identical to the C-structure posited in chapter 3 for Malagasy.

(55)



The C-domain consists of at least two layers, a TopP/WhP layer and a PivP layer. Topics are licensed in the specifier of TopP, while wh-phrases are licensed in the specifier of WhP. As in Malagasy, I assume that topics are attracted by the uninterpretable scopal feature [op] of the Top head, which also includes an uninterpretable [D] feature (but see below). The Wh head also possesses uninterpretable [D] and [op] features, but in addition it includes an uninterpretable interrogative feature [q]. It is the combination of [op] and [q] which causes the Wh head to attract a wh-phrase into its specifier. Top and Wh may be thought of either as different instantiations of a single functional category, or as distinct categories which happen to be mutually exclusive in the same clause.[8]

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[8] Zwart (1993) argues that WhP and TopP are both projected in the clause (with Wh selecting TopP), and that the mutual exclusivity of wh-phrases and topics in verb-second languages is due to independent constraints. As evidence that wh-movement and topicalization target distinct specifier positions, he notes that while wh-movement out of a wh-island is strictly ungrammatical in languages like German (i), topicalization out of a wh-island is generally acceptable, producing at worst a mild subjecency violation (ii) (this observation is originally due to Fanselow 1991; cf. also Müller & Sternefeld 1993):

(i) * Was_i kannst du dich nicht erinnern [*wer* t_i repariert hat] ?
what can you yourself not recall who repaired has
"What don't you recall who repaired (them)?"

(ii) ? $Radios_i$ kann ich mich nicht erinnern [*wer* t_i repariert hat]
radios can I myself not recall who repaired has
"Radios, I don't recall who repaired (them)"

The failure of the wh-phrase to block extraction of the topic in (ii) can be explained, Zwart argues, if we assume that long-distance wh-movement and long-distance topicalization make use of different intermediate landing sites for successive-cyclic movement: SpecWhP and SpecTopP, respectively.

To explain why wh-phrases and topics cannot co-occur in the same clause, Zwart makes the following assumptions: First, the specifier of TopP is occupied not by the topic itself, but by a null operator linked to the topic, which is adjoined to TopP, as in (iii-a). Second, adjunction to TopP is impossible if WhP contains a filled specifier, as in (iii-b). (Since WhP contains a filled specifier if and only if it has a [wh] feature to check, this may involve a con-

The complement of WhP/TopP is a lower C-projection containing an uninterpretable [op] feature, which attracts either a topic or a wh-phrase into its specifier. For the sake of consistency, I will call this projection PivP, even though the term *pivot* has no significance in the description of Germanic languages (other labels for this projection, such as Rizzi's (1997) FinP, or *finiteness phrase*, would be equally appropriate). SpecPivP is the position to which *d*-operators raise in Dutch topicalization constructions, as suggested in 3.1.3 (examples from Zwart 1993):

(56) a. Jan, die mag ik niet
Jan that like I not
"Jan, I don't like (him)"

b. $[_{TopP}$ Jan$_i$ $[_{PivP}$ *die*$_i$ $[_{Piv'}$ mag ik t$_i$ niet]]]

c. Jan, die z'n ouders ken ik niet
Jan that his parents know I not
"Jan, I don't know his parents"

d. $[_{TopP}$ Jan$_i$ $[_{PivP}$ *die z'n ouders*$_i$ $[_{Piv'}$ ken ik t$_i$ niet]]]

According to (55), the C-domain contains (at least) two head positions, Top^0 and Piv^0. As evidence for multiple C-heads in Germanic, Zwart and others note that many Germanic languages have complex complementizers. For example, in colloquial Dutch, the interrogative complementizer *of* "if, whether" in embedded questions may be optionally followed by the regular complementizer *dat*, as in (57a). Hoekstra (1992) argues that *of* and *dat* head separate projections. As evidence, he cites sentences such as (57b), in which *dat* is repeated independently of *of* under coordination.[9] Here we may assume that *of* is generated in the head of WhP (with the wh-phrase in its specifier), while *dat* is generated in the head of PivP, as in (57c):[10]

(57) a. Ik vraag wat of dat Jan gedaan heeft
I ask what if that Jan done has
"I'm asking what Jan did"

---

straint against [wh] heads selecting a complement to which a topic has been adjoined.) Sentences such as (ii) are allowed under this theory, since nothing is adjoined to the embedded TopP projection (the specifier of the embedded TopP contains a trace of the operator in the specifier of the matrix TopP, to which the topic *Radios* is adjoined).

(iii) a. $[_{TopP}$ DP$_i$ $[_{TopP}$ Op$_i$ Top^0 $[_{AgrP}$ ... t$_i$ ...]]]

b. * $[_{WhP}$ XP Wh^0 $[_{TopP}$ DP$_i$ $[_{TopP}$ Op$_i$ Top^0 $[_{AgrP}$ ... t$_i$ ...]]]]

It seems to me that Zwart's analysis (or some variant thereof) is not incompatible with the theory developed here. However, for the sake of simplicity I will adopt the more straightforward assumption that WhP and TopP are mutually exclusive in the same clause.

[9] Tim Stowell (p.c.) informs me that some Dutch speakers judge (57b) to be quite marginal, preferring to either repeat both *of* and *dat* in the second conjunct, or to omit both of them.

[10] Hoekstra (1992) and Zwart (1993) locate *dat* in the head of TopP rather than PivP (see footnote 8).

b. Ik vraag of *dat* Hardy dik is en *dat* Laurel dun is
I ask if that Hardy fat is and that Laurel skinny is
"I'm asking if Hardy is fat and Laurel is skinny"

c. [$_{WhP}$ wat *of* [$_{PivP}$ *dat* [$_{TP}$ Jan gedaan heeft]]]

We thus have evidence for projections corresponding to TopP/WhP and PivP in Malagasy. Recall from 3.1.3 that I also posited a third projection above TopP/WhP, namely FrcP, in which complementizers such as *fa* "that" are generated. Is there evidence for a FrcP layer in the Germanic C-domain as well?

In (57c) above I locate the Dutch complementizer *dat* in PivP. By locating *dat* in a low C-projection, immediately above TP, we can explain why overt complementizers in Dutch are in complementary distribution with verb-second order in embedded clauses, as illustrated in (58) (see Zwart 1993, Haider, Olsen, & Vikner 1995, Hallman 1997a for discussion and references):

(58) a. Jan kuste Marie
Jan kissed Marie
"Jan kissed Marie"

b. Piet zei [dat Jan Marie kuste]
Piet said that Jan Marie kissed
"Piet said that Jan kissed Marie"

c. * Piet zei [dat Jan kuste Marie]
Piet said that Jan kissed Marie
"Piet said that Jan kissed Marie"

Verb-second order is derived by adjoining T^0 to Piv^0, and Piv^0 to Top/Wh^0, as I will argue below However, if there is a complementizer in Piv^0, then T^0-to-Piv^0 adjunction is blocked. This analysis can be extended to other Germanic languages which exhibit the same mutual exclusivity between overt complementizers and V2 order, such as German and the mainland Scandinavian languages. If complementizers are invariably generated in Piv^0 in these languages, then we have little evidence for a projection above TopP/WhP comparable to FrcP in Malagasy.

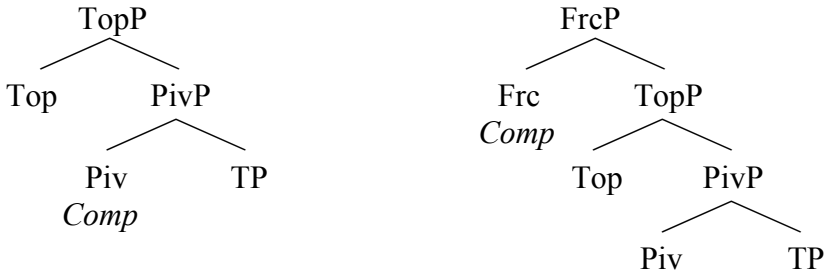
Of course, there are some Germanic languages in which verb-second order and topic-fronting co-occur with overt complementizers in embedded clauses, as shown in (59) for Icelandic (Rögnvaldsson & Thráinsson 1990). (The same pattern is found in Yiddish.)

(59) Jón harmar [að þessa bók skuli ég hafa lesið]
Jon regrets that this book should I have read
"Jon regrets that I have read this book"

If the complementizer fails to block T^0-to-Piv^0-to-Top^0 adjunction in these languages, and surfaces to the left of embedded topics, then it must be generated in some projection above TopP. The obvious candidate is FrcP. Thus, within the context of my analysis of the C-domain, we can attribute the distributional difference between Dutch/German/Scandinavian verb-second and Icelandic/Yiddish verb-second to the lexical category of the complementizers in these languages. In

Dutch, German, and mainland Scandinavian, the complementizer is of category Piv, while in Icelandic and Yiddish (as in Malagasy) it is of category Frc:

(60) *Dutch/German/MS* *Icelandic/Yiddish/Malagasy*



Although I assume that the topic position in Germanic verb-second languages is the same as the EA position in Malagasy, there are some crucial differences between Malagasy externalization and Germanic topic-fronting which need to be addressed. I will consider three such differences here, and tentatively suggest how they might be accounted for in a unified manner.

The first difference between externalization and topic-fronting involves the range of categories which may be targeted by these operations. In Malagasy, the EA position must be filled by an element of category DP, as shown in (61). In the Germanic verb-second languages, however, the categorial restrictions on the clause-initial topic position are much weaker: As the German examples in (62) demonstrate, not only DPs, but also PPs and adverbials can occur in this position (examples taken from Hallman 1997a).

(61) a. Nandidiana ny mofo itỳ antsy itỳ
Pst-CrcP.cut Det bread this knife this
"The bread was cut with this knife"

b. * { Nandidiana / Nandidy } ny mofo amin'itỳ antsy itỳ
Pst-CrcP.cut Pst-NomP.cut Det bread with-this knife this
"The bread was cut with this knife"

(62) a. Hans veröffentlichte heuer in Deutschland ein Buch
Hans published this.year in Germany a book
"Hans published a book this year in Germany"

b. Heuer veröffentlichte Hans in Deutschland ein Buch
this.year published Hans in Germany a book
"This year Hans published a book in Germany"

c. In Deutschland veröffentlichte Hans heuer ein Buch
in Germany published Hans this.year a book
"In Germany Hans published a book this year"

A second difference involves the number of elements which may appear outside the predicate phrase. In Malagasy, as we saw in 2.1 and again in 4.2.2, the EA may sometimes be followed by

additional constituents, including sentential adverbs and locative expressions (63). In verb-second languages, by contrast, at most one constituent can appear outside the predicate phrase at a given time (where the tensed verb is understood to mark the left edge of the predicate phrase). This is shown in (64) for German:

(63) [Namaky ny boky] ny mpianatra *omaly*
Pst-NomP.read Det book Det student yesterday
"The student read the book yesterday"

(64) a. * Der Student *gestern* [hat das Buch gelesen]
the student yesterday has the book read
"The student read the book yesterday"

b. Der Student [hat *gestern* das Buch gelesen]
the student has yesterday the book read
"The student read the book yesterday"

A third difference, no doubt related to this second difference, involves the strictness with which the blocking effect on A′-extraction is observed. As I noted above, wh-operators and EAs are generally mutually exclusive in the same clause in Malagasy. However, recall from 3.4.4 that when the wh-operator belongs to a lexical category other than DP, this mutual exclusivity is relaxed. Thus, for example, it is possible for a PP-operator to co-occur with an external argument inside the free relative constituent of a cleft, as in (65). Here the clefted phrase *tamin'inona* "with what", which questions the instrument with which the event of killing is carried out, is linked to a PP-operator, while the nominative-pivot morphology on the verb is triggered by the agent *ny mpamboly* "the farmer".

(65) Tamin'inona$_i$ [PP-Op$_i$ no *namaky* akoho ny mpamboly] ?
Pst-with-what Foc Pst-NomP.kill chickens Det farmer
"With what did the farmer kill chickens?"

In verb-second languages, by contrast, topicalization and wh-fronting are mutually exclusive even when the wh-phrase is a non-DP, as illustrated in (66) for German:

(66) a. * *Mit welchem Messer* der Landwirt hat die Hühnchen getötet?
with which knife the farmer has the chickens killed
"With which knife did the farmer kill the chickens?"

b. *Mit welchem Messer* hat der Landwirt die Hühnchen getötet?
with which knife has the farmer the chickens killed
"With which knife did the farmer kill the chickens?"

Summarizing these differences, the contrast between Malagasy and the verb-second languages amounts to the following:

(67) a. In the verb-second languages, TopP/WhP contains one and only one constituent, which can be of any category—typically a DP, PP, or adverbial.

b. In Malagasy, TopP/WhP contains one and only one DP, and may optionally contain an additional constituent of another category, typically a PP or adverbial.

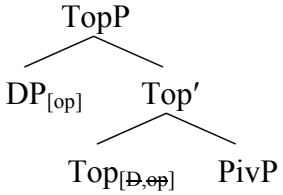
Here I will suggest a tentative analysis of this difference which appeals to the concept of feature strength. Suppose that the scope feature [op] may be assigned to any semantically appropriate constituent, regardless of its lexical category (DP, PP, etc.). We could then capture the difference between Malagasy and Germanic in the following way:

(68) a. In Malagasy, the [D] feature of TopP/WhP is *strong*.
b. In the Germanic V2 languages, the [D] feature of TopP/WhP is *weak*.
c. In both language types, the [op] feature of TopP/WhP is *strong*.

Thus, in Malagasy, overt movement to the predicate-external position will be forced in order to check both the [op] and [D] features of Top/Wh, while in the Germanic languages, overt movement is forced only to check the [op] feature of Top/Wh; the [D] feature may in principle be checked by means of a separate covert movement.

To see how this analysis derives the generalization in (67), consider first a scenario under which [op] is assigned to a DP: In Malagasy, the DP will be attracted into the specifier of TopP by the strong [D] and [op] features of Top, which are then checked and eliminated, yielding the structure in (69):

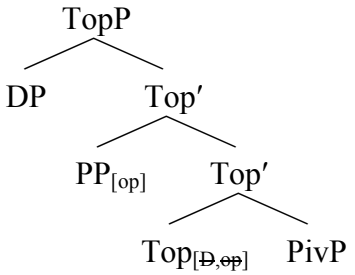
(69)



In the verb-second languages, DP-raising is triggered by the strong [op] feature of Top only; the [D] feature of Top is weak, and cannot trigger overt movement. However, once the DP is attracted into the checking domain of Top to eliminate [op], it is able to eliminate [D] as well. The result is thus the same as in Malagasy, namely the structure in (69). In both cases, all of the uninterpretable features of Top are removed, rendering TopP unavailable as a landing site for further movements. This derives the generalization (true for both Malagasy and Germanic) that the TopP projection can host no more than one DP in its specifier(s).

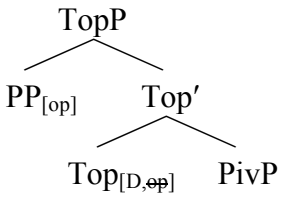
Although the outcome is the same in both Malagasy and Germanic when the [op] feature is assigned to a DP, when it is assigned to a non-DP, such as a PP, the result is different. In Malagasy, the PP is first attracted to the specifier of TopP by the strong [op] feature in Top. However, because the PP does not possess a [D] feature, this first operation only succeeds in eliminating the [op] feature itself, leaving the strong [D] feature of Top unchecked. To make sure this feature is eliminated, then, Top attracts a DP, which raises to become the outer specifier of TopP. This second operation produces the structure in (70), containing two topics, a DP and a PP (cf. the discussion in 3.4.4, 4.2.2):

(70)



In the verb-second languages, the PP is attracted to the specifier of TopP to check the strong [op] feature of Top, leaving the [D] feature unchecked, as in Malagasy. However, in this case the [D] feature of Top is weak, and cannot trigger overt movement. Thus, the derivation is able to converge without Top attracting a DP to form a second specifier (instead, the [D] feature of Top is presumably checked via covert feature movement). We are thus left with the structure in (71), in which TopP includes a single specifier containing a topicalized PP.

(71)



Aside from this difference in the strength of the [D] feature of Top, there is a fundamental similarity between Malagasy and the Germanic verb-second languages with regard to the structure of the C-domain, and the distributional properties of topics/EAs. Having established this similarity, we can return to the question raised at the end of section 4.2, namely: What triggers predicate-fronting in Malagasy?

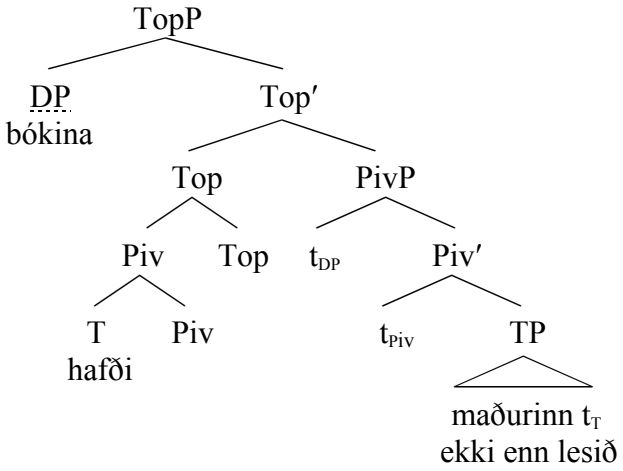
4.3.2. Malagasy order as the XP-movement analogue of V2

How does the derivation of predicate-initial order in Malagasy compare with the derivation of V2 order in Germanic? Here I will present an outline of the analysis I will argue for, to be refined in subsequent sections.

I will tentatively assume that in languages such as Icelandic, Dutch, and German, Piv has a strong feature which must be checked against T, while Top has a strong feature which must be checked against Piv (but see 4.3.3 for a different view). This feature checking is carried out by means of successive head movement: T^0 (to which the finite verb or auxiliary has adjoined) raises to adjoin to Piv^0, which then raises to adjoin to Top^0, producing the structure in (72b), in which the verb/auxiliary immediately follows the fronted constituent in SpecTopP, as in the Icelandic example in (72a):

(72) a. Bókina hafði maðurinn ekki enn lesið
book-the had man-the.Nom not yet read
"The book, the man had still not read (it)"

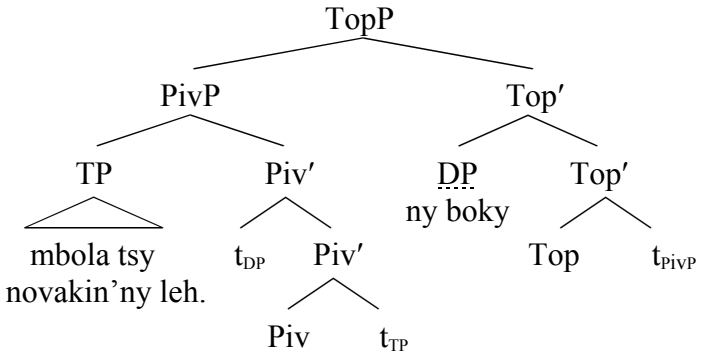
b.



In Malagasy, a similar situation obtains: Piv has a strong feature which need to be checked against T, while Top has a strong feature which needs to be checked against Piv. However, in this case, feature checking is carried out by means of phrasal movement rather than head movement. TP raises and merges as the outer specifier of PivP, after which PivP raises and merges as the outer specifier of TopP, producing a 'roll-up' structure of the type proposed by Barbiers (1995), Cinque (1996), and others. The raising of PivP (containing TP) over the EA, which occupies the inner specifier of TopP, ensures that the predicate phrase will precede the EA at PF:

(73) a. Mbola tsy novakin'ny lehilahy ny boky
still not Pst-AccP.read-Det man Det book
"The book, the man has still not read (it)"

b.



Thus, I claim, the same sequence of feature-checking operations which results in verb-second order in Germanic also derives PredP-initial order in Malagasy. The only significant difference between the two language types is in the kind of movement involved—successive head-adjunction versus successive phrasal movement. I return to the reasons for this difference in section 4.3.4. First, however, I will consider the question of what motivates T^0/TP to raise into the C-domain in more detail.

4.3.3. Raising into the C-domain as feature inheritance

In this section I suggest that movement into the C-domain is motivated by the need to create an *extended projection*, in the sense of Grimshaw (1991). Specifically, I will assume that each of the functional heads which form part of the extended projection of a lexical head L must be lexically identified in some way, either by being lexicalized themselves (spelled out as an overt morpheme), or by acquiring a copy of an L-related categorial feature, thereby becoming 'honorary' lexical projections. In the case under consideration here, the C-heads Piv and Top are phonetically null. Thus, in order for these heads to be incorporated into the extended projection of the verb, they must inherit the categorial feature of the closest projection which is L-related to the verb—specifically, TP. As discussed below, feature inheritance takes place under a local structural configuration: either a head-adjunction or a specifier-head configuration, depending on the language. It is this requirement which forces Piv and Top to attract a projection containing a [T] feature (T^{0max} in the case of the verb-second languages, TP in the case of Malagasy) into their checking domains.

As background to this analysis, a word or two about the relationship between head movement and extended projections: Underlying the notion of extended projection is the observation that the categories which constitute the clause occur in a fixed hierarchy, reflecting a fixed order of merger: Roughly, VP merges with I to form IP, which merges with C to form CP. This hierarchy is generally attributed to the selectional properties of heads: C c-selects a complement of category IP, while I c-selects a complement of category VP. However, Svenonius (1994) observes that if we think of c-selection as a dependency between a head and the head of its complement, then the coexistence of c-selection and head-movement in the theory constitutes a formal redundancy: X may c-select YP if and only if it is possible (at least in principle) for Y^0 to adjoin to X^0 without violating the Head Movement Constraint. In the context of a feature-checking theory of movement, a natural response to this redundancy is to reduce c-selection to the morphological requirements of heads: To take a simplified example, saying that T c-selects *v*P means simply that T^0 must merge with *v*P so that it can attract the head of *v*P into its checking domain in order to check a feature.[11] From this perspective, then, an *extended projection* may be thought of as a hierarchy of projections whose heads each need to attract the head of their complement, with the lowest head in the hierarchy being a lexical head (V in the case of clauses, N in the case of DPs, etc.).

Another basic observation about the extended projections of verbs (CPs) is that the verb tends to undergo head-to-head movement from the bottom of the extended projection towards the top, with languages differing from one another in terms of how high the verb gets before the structure is spelled out (to a relatively low position in English, higher in French, higher still in Irish and Italian). Why does this movement take place? In some instances, it has been argued, movement is required so that the verb can discharge its θ- and case-licensing properties to its

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[11] Here I am referring specifically to c-selection of a lexical or functional category by a higher functional category (e.g., selection of a *v*P complement by T in the example cited), or c-selection of a lexical category by a higher lexical category with which it combines to form a complex predicate (e.g., selection of a VP complement by an applicative head, as in 2.4.4). I assume that c-selection of a functional category by a lexical category—in particular, selection of a DP object by a verb or preposition—involves base-generation of the selected category in the specifier of the selecting head (cf. Sportiche 1992, Bowers 1993), and is thus a different type of operation.

arguments within a sufficiently local structural configuration (specifically, a specifier-head configuration), creating a single complex predicate head in the process. For example, V raises to the light verb *v* so that it can assign its external θ-role to the DP which merges with *v*P. Similarly, V raises to Asp_r so that the event denoted by the verb can receive an aspectual specification, and so that the complex head $[V+Asp_r]^0$ can check the abstract case features of the direct object DP in $SpecAsp_rP$. Adapting the terminology of Chomsky & Lasnik (1995), we may refer to projections such as *v*P and Asp_rP, in which the verb discharges/satisfies its θ- and case-related properties, as *L-related* projections. Hence, movement of the verb into an L-related projection may be referred to as *L-related movement*.

However, there are other examples of verb movement which do not appear to be motivated by θ- or case-licensing requirements. For example, in matrix clauses in V2 languages, as well as subject-aux inversion contexts in English, the tensed verb raises into the C-domain, above the highest L-related projection in the clause. Generalizing from this observation, many researchers have concluded that in all languages the verb—or some larger constituent containing the verb—must raise to the highest head position of the CP by LF. In V2 matrix clauses and English inversion contexts, this happens before spell-out, while in French/Italian matrix clauses and English non-inversion contexts, it happens after spell-out.

If this conclusion is correct, then descriptively, the verb needs to pass through each of the heads that make up its extended projection before the structure can be interpreted at LF. Why should this be necessary? Some authors have argued that verb movement into C is actually a type of L-related movement, in the above sense: For example, Stowell (1981, 1982) suggests that V-movement is required to support a tense operator which is generated in the C position (or raises to C by LF). From the C position, the tense operator is able to take scope over the IP, which denotes the event (cf. also den Besten 1989). Other authors have argued that verb movement into the C-domain—and head movement in general—is motivated by a more general requirement that heads be licensed. For instance, Koopman (1994, 1995) argues that lexical heads such as V have 'receptors' which need to be 'bound' by a higher head, forcing movement: Thus, the T head (containing V) must move to C so that the C-receptor on V can be bound.

Focusing on V2 phenomena in Germanic, Zwart (1993) explains verb movement into the C-domain as a consequence of feature attraction and inheritance: To account for the fact that subjects agree with complementizers in languages like West Flemish, Zwart assumes that the C-head which hosts complementizers in such languages (Top^0 under his system) attracts an agreement head, Agr_S^0, into its checking domain.[12] Agr_S is an L-related category; thus, Zwart claims, it possesses a strong [V] feature which must be checked against the verb. This [V] feature is inherited by Top^0 when Agr_S^0 adjoins to it, and thus attracts the verb into the C-domain.[13]

Finally, Schütze (2001) offers a morphological explanation for movement into the C-domain, within the context of subject-aux inversion and *do*-support in English: He argues that the phonetically null C-heads which trigger inversion (the [q] head found in matrix questions, the [neg] head found in negative inversion constructions, etc.) are affixes. As affixes, they need to combine with a host in order to prevent the derivation from crashing at PF, and thus attract an

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[12] For a discussion of complementizer agreement, see Haegeman (1990), Hallman (1997b), and the numerous references cited in Zwart (1993).

[13] In order to force the verb to raise to Top^0, Zwart must stipulate that Agr_S^0-to-Top^0 adjunction happens *before* Agr_S attracts the verb and has its [V] feature deleted. See Zwart (1993) for the details of this analysis.

auxiliary from the I-domain of the clause (cf. Pesetsky 1991 for a similar treatment of null complementizers in embedded clauses).

Here I will develop an approach to verb movement into the C-domain which incorporates aspects of Koopman's, Schütze's, and Zwart's theories. In the spirit of Koopman, I assume that verb movement is motivated by general licensing requirements. Following Schütze, I assume that phonetically null C-heads are 'deficient' in some way and need to be supported by lexical material. Finally, following Zwart, I assume that C-related projections inherit a categorial feature from an L-related head as a result of movement, thereby becoming 'honorary' L-related projections. However, unlike Zwart, I argue that feature inheritance is not a side-effect of complementizer agreement, but is instead motivated by the need to integrate non-L-related projections into the extended projection of a lexical head.

Above I characterized an extended projection as a hierarchy of projections whose heads each need to attract the head of their complement, with the lowest head in the hierarchy being a lexical head. To account for the additional requirement that the verb must pass through each of the heads that make up its extended projection by LF, I will stipulate the condition in (74):

(74) *The L-support Requirement*

If L is a lexical head and H is a non-L-related functional head, H must be *L-supported* in order to be incorporated into the extended projection of L.

In other words, a non-L-related head must be lexically identified ('activated') in order to be interpreted at LF as part of L's extended projection. This requirement is reminiscent of the Case Filter on DP arguments: The intuition is that non-L-related heads are too 'weak' to be visible for interpretation, and must be 'reinforced' by being associated with lexical material. The conditions under which this L-support requirement is satisfied are spelled out in (75):[14]

(75) In the extended projection of a lexical head L, a non-L-related head H is *L-supported* iff (a) or (b) holds:

a. H is lexicalized (i.e., realized as an overt morpheme).

b. H inherits the categorial feature F of an L-related head by attracting F into its checking domain.

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[14] I leave as a question for future research whether (74) and (75) can be derived from more basic principles. Note, though, that the L-support Requirement bears a more-than-passing resemblance to the *Principle of Projection Activation* (PPA), proposed by Koopman (1996) and assumed in Koopman & Szabolcsi (2000):

(i) A projection is interpretable iff it has lexical material at some stage in the derivation.

However, the scope of the L-support Requirement is more limited than that of the PPA, in two ways: (a) It applies only to non-L-related projections (I leave open the question of how L-related projections are licensed, if indeed they need to be licensed at all). (b) That a non-L-related projection contains lexical material at some stage of the derivation is a necessary condition for L-support, but not a sufficient condition; the lexical material in question must be of a particular type—viz., either a lexical spell-out of the head of the projection, or a copy of a constituent containing an L-related categorial feature. However, though the L-support Requirement is less general than the PPA, the two are clearly compatible. It is quite possible that the L-support Requirement may be reducible to the interaction of the PPA with other principles.

Focusing on (75b), if we adopt standard assumptions about checking domains, there are in principle two ways in which a phonetically unrealized H may inherit the categorial feature F of an L-related head: (a) H may attract an X^0-level constituent containing F, which merges with H^0 to form the adjunction structure H^{0max} (*head adjunction*); or (b) H may attract an XP-level constituent containing F, which merges with a phrasal projection of H to become a specifier of HP (*specifier-head agreement*). Suppose we assume, following Kayne (1994), that specifiers are structurally non-distinct from phrasal adjuncts, and use *adjunction* as a cover term for all instances of Merge in which two terms of the same type (two X^0s or two XPs) are concatenated (cf. the discussion in section 1.1.2). We can then give a general characterization of categorial feature inheritance as in (76):

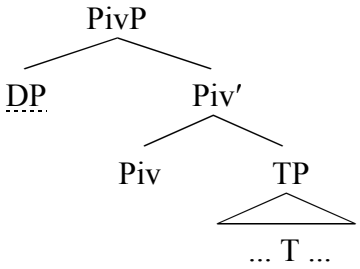
(76) a. If X adjoins to Y, producing Y^{max} (= Y^{0max} or YP), Y^{max} inherits all of the (unchecked) features of X which do not conflict with features of Y.

b. The categorial feature of a non-L-related projection does not conflict with the categorial feature of an L-related projection.

Returning to the specific case of T-to-C movement in V2 languages: In verbal extended projections (clauses), the condition in (74) applies to the heads of the C-projections PivP, TopP, and FrcP (among others, perhaps). In accordance with (75a), these projections are inherently L-supported if their heads are overt (e.g., when the head of FrcP in Malagasy is realized as the complementizer *fa*). However, in cases where the heads of these projections are covert (not lexicalized), they must be L-supported by attracting the categorial feature of the closest L-related projection into their checking domains, in accordance with (75b).[15]

Since the heads of PivP and TopP are covert the V2 languages, the second option is the only one available. The closest L-related projection to PivP and TopP is TP, and so these projections will attract the [T] feature in order to be L-supported. In the V2 languages, this involves successive head-adjunction (Y^{max} = Y^{0max} in (76a)). A sample derivation is given in (77)–(79): The phonetically null Piv^0 merges with TP to form PivP, which attracts the topicalized constituent into its specifier, producing the structure in (77):

(77)

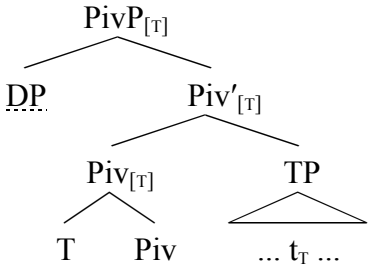


PivP in (77) needs to be L-supported. Piv^0 thus attracts T^{0max} (containing the tensed verb), which adjoins to it to form Piv^{0max}. Since the categorial features of T and Piv do not conflict with each

[15] The alternation between these two options for satisfying the L-support requirement (spell out the head or attract an L-related categorial feature) is meant to account for the mutual exclusivity of T-to-C movement and overt complementizers in V2 languages of the German/Dutch/Mainland Scandinavian type (see 4.3.1 for discussion).

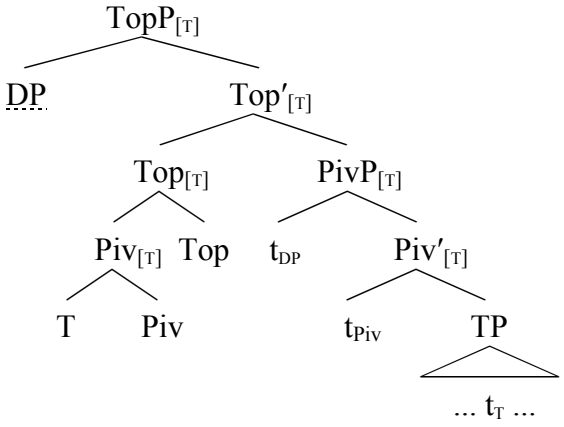
other, as per (76b), Piv^{0max} (as well as each of the higher projections of Piv) will inherit [T], satisfying the L-support requirement:[16]

(78)



Top^0 then merges with the structure in (78) to form TopP, and the procedure is repeated: Top^0 attracts the DP into its specifier, and then attracts an L-related categorial feature in order to satisfy the L-support requirement. The closest projection containing such a feature is PivP, which inherited a [T] feature from TP. Piv^{0max} thus raises and adjoins to Top^0 to form Top^{0max}, resulting in the structure in (79) (cf. (72b)):

(79)



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[16] In order to derive the correct word order in Malagasy (see below), I must assume that [T] feature attraction takes place only after the DP has moved to SpecPivP. This creates an apparent violation of Chomsky's extension condition, used to derive cyclicity effects:

(i) Operations of Merge/Move must extend the target, creating a new root node.

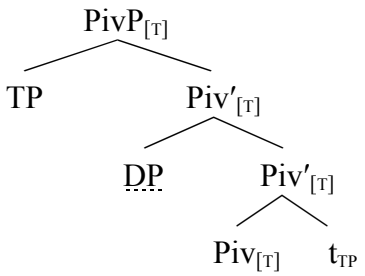
The adjunction of T^0 to Piv^0 in (78) does not create a new root node, in violation of (i). However, notice that this adjunction *does* change the featural content of the root node: Piv^{0max} inherits a [T] feature from T^{0max}, and this feature is in turn inherited by each of the projections of Piv^{0max}. This suggests a reformulation of the extension condition along the lines of (ii):

(ii) When a phrase marker K is converted into K′ by an operation of Merge/Move, the root node of K′ must be non-identical with the root node of K.

The condition in (i) allows both standard cases of cyclic movement, in which Merge/Move adds a new root node to the derivation, and cases of head-adjunction, in which Merge/Move changes the root node by altering the featural content of the head which projects that node. (Cf. Kitahara 1995 for a discussion of head-adjunction as a problem for strict cyclicity.)

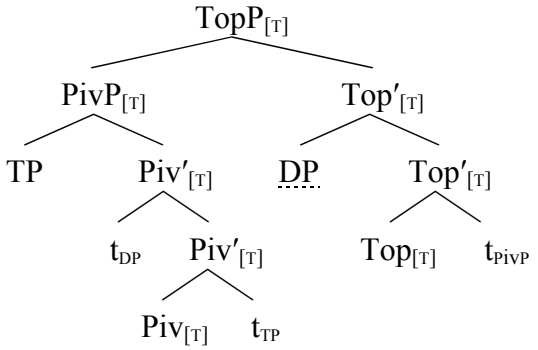
In Malagasy, as in the V2 languages, Piv and Top are covert, and need to inherit a [T] feature. However, for reasons which I explore in the next section, adjunction of T^{0max} to higher heads is unavailable in this language, and so XP-movement must be employed in order to facilitate feature inheritance (Y^{max} = YP in (76a)). The Malagasy analogue of the derivation in (77)–(79) would thus proceed as follows: Piv^0 merges with TP to form PivP, and the EA raises to become the specifier of PivP, as in (77). In order to satisfy the L-support requirement, Piv^0 then attracts TP (containing the verb and its non-externalized dependents), which raises to become a second specifier of PivP. As a result, Piv^0 acquires the categorial feature of TP under specifier-head agreement, and passes it up to higher projections, producing the structure in (80):

(80)



Next, the Top layer is added, and the EA raises again to become the specifier of TopP. Finally, Top^0 attracts the closest L-related categorial feature, namely the [T] feature of PivP. PivP thus raises to become a second specifier of TopP, which inherits its [T] feature under specifier-head agreement, producing the structure in (81) (cf. ((73b)):

(81)



4.3.4. Generalized pied-piping and X^0- versus XP-movement

Why does Malagasy make use of XP-movement in order to facilitate [T] feature inheritance by Piv and Top, whereas verb-second languages make use of X^0-movement? While I do not have a definitive answer to this question, I speculate that this difference follows from the interaction of general economy conditions on movement with constraints on morphological and prosodic structure—a straightforward implementation of Chomsky's (1995) proposal that overt movement is the 'generalized pied-piping' of phonological features by morphosyntactic features.

As I discussed in chapter 1, Chomsky argues that the operation Move is triggered by morphosyntactic feature attraction. Any uninterpretable feature F must be checked against a complementary interpretable feature F′ and eliminated in order for the structure to converge. To fulfill

this requirement, F attracts the closest available feature bundle containing F′ (here abbreviated *fb*(F′)). Assuming the copy theory of movement (cf. section 4.2.3), attraction of F′ causes a copy of *fb*(F′) to merge in the checking domain of F.

When the merged copy of *fb*(F′) is spelled out, we say that movement is *overt*, and when the original copy of *fb*(F′) is spelled out, we say that movement is *covert*. There are a number of ways to understand the difference between overt and covert movement. For Chomsky (1995) the difference is one of timing: Under Chomsky's theory, *spell-out* (the mapping of a syntactic structure to PF) is construed as an operation which applies at a certain point in a derivation D, separating out the phonological features of the term constructed by D and sending them to PF for interpretation. Covert movement results when the copying of *fb*(F′) is postponed until after spell-out has applied—that is, until after the phonological features of *fb*(F′) have been stripped off and sent to PF. Overt movement results when *fb*(F′) is copied before spell-out, in which case the higher copy includes the phonological features of *fb*(F′). Chomsky refers to the process whereby phonological features are copied along with formal features as 'generalized pied-piping'. Others, including Richards (1997) and Pesetsky (1998), have suggested that both overt and covert movements take place prior to spell-out. Under this alternative theory, the choice of which copy of *fb*(F′) to pronounce must be determined by other factors.

In the case of overt movement, what determines exactly how much phonological material will be copied into the checking domain of the attracting feature F? According to Chomsky, general principles of economy dictate that the copy of *fb*(F′) which merges in the checking domain of F will contain the minimum amount of phonological material necessary for convergence. Given that phonological features are interpreted at PF, we may presume that the constraints on copying them are at least partially determined by principles of PF. Thus, how much phonological material is displaced when a formal feature is attracted will depend on the interaction of economy and other syntactic principles with independent morphological and phonological principles (which, though presumably universal in their formulation, are largely language-specific in their application).

What kinds of constraints are placed on the copying of phonological material? One such constraint appears to be the following:

(82) Phonological features dominated by a single X^{0max} may not be pronounced in distinct copies of a movement chain.

This is the familiar restriction against X^0-excorporation, reformulated as a condition on PF. Among other things, (82) rules out derivations in which T-to-C adjunction copies a tense suffix by itself, stranding the verb stem, as in the Swedish example in (83b):

(83) a. Varför besök-te hon inte sin far?
why visit-Pst she not her father
"Why didn't she visit her father?"

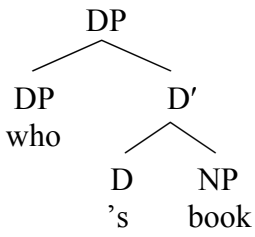
b. * Varför -te hon besök inte sin far?
why Pst she visit not her father
"Why didn't she visit her father?"

c. $[_{CP}$ varför $[_{C'}$ -te$_i$ $[_{TP}$ hon besök t_i inte sin far $]]]$

Plausibly, the constraint in (82) should be extended to include not just *syntactic words* (X^{0max}s), but also what we might call *morphological words*—that is, strings of two or more linearly adjacent X^0s which do not form a constituent in the syntax, but which nevertheless function as a unit with respect to PF (perhaps as a result of a post-spell-out *Merger* or *Fusion* operation, which manipulates tree structures by combining adjacent terminal nodes, as in the Distributed Morphology model of Halle & Marantz 1993).

To show that both syntactic and morphological structure play a role in constraining phonological feature copying, Chomsky (1995) gives an example involving wh-movement in English: In wh-questions, the C-domain contains a head with an uninterpretable [wh] feature, which must attract a compatible interpretable feature.[17] Because the attracting [wh] feature is strong in English, the closest constituent containing an interpretable [wh] feature will raise overtly. Suppose that the interpretable feature is contained in the DP in (84), where the possessive determiner *'s* joins with the wh-phrase *who* at PF to form a single morphological unit, *whose*:

(84)



If the attracted [wh] feature pied-piped only *who*, stranding *'s book*, the derivation would crash at PF, because *'s* needs to form a morphological word with *who*. Raising *whose* and stranding *book* is not an option either, since *whose* is not a syntactic constituent, and hence is not visible for copying. Thus the entire DP *whose book* must be copied, this being the smallest unit containing [wh] which is both visible to the syntax and capable of being displaced at PF without breaking up a morphological word. Crucially, all that the uninterpretable [wh] feature cares about is the feature that it attracts. The fact that the attracted feature must drag along the DP *whose book* when it is copied is a consequence of the language-specific morphological properties of the determiner *'s*, requiring it to form a PF unit with the constituent in SpecDP.

On the basis of examples like this, I propose that the copying of phonological features is minimally subject to the conditions in (85) and (86). (Further refinements in the statement of these conditions, as well as the addition of other constraints, may well be necessary; however, these will suffice for present purposes.)

[17] In 3.4, I reanalyzed the [wh] feature as a combination of a scopal feature [op] and an interrogative feature [q]. I abstract away from that analysis here.

(85) *Economy of Displacement*

When a feature F attracts a compatible feature F′ into its checking domain, copy the minimum *fb*(F′) allowed for convergence (as specified by the Morpho-Syntactic Integrity condition).

(86) *Morpho-Syntactic Integrity*

When a feature bundle *fb*(F′) is copied, the following conditions must hold:

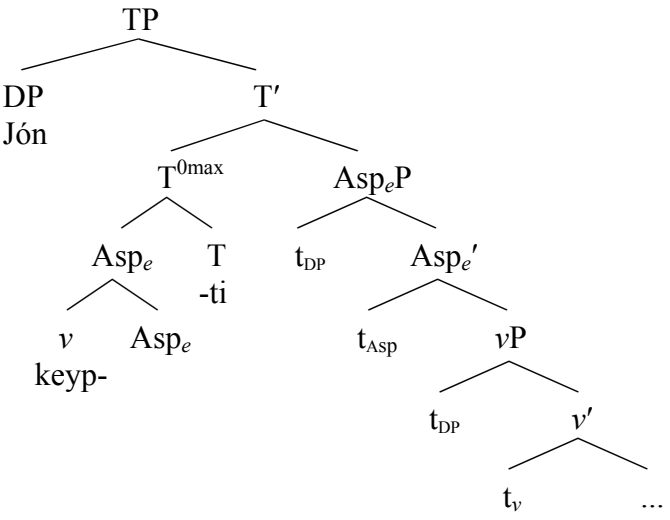
i. *fb*(F′) is a visible syntactic constituent (X^{0max} or XP).
ii. If phonological features are copied, the morphological requirements of terminals must be respected. That is, the subparts of a morphological word must all be spelled out in the same copy of *fb*(F′).

Paraphrasing (85) and (86): When a feature F is attracted into a domain D, resulting in the overt merger in D of a syntactic constituent α containing F, α will be the smallest such constituent which also counts as a morphological unit.

Returning to the difference between Malagasy and the Germanic verb-second languages: Notice that in the case of languages like Icelandic, the verb stem combines with tense/aspect morphology in the syntax. Consider a sentence such as (87a). In this sentence, TP is headed by a complex adjunction structure T^{0max}, containing V^0 and Asp_e^0 as well as T^0 (87b). T^{0max} constitutes a discrete morphological word, and thus the feature bundle associated with T^{0max} counts as the smallest feature bundle containing the categorial feature [T] which is both a syntactic unit and a morphological unit. As a consequence, when the categorial feature [T] is attracted into the checking domain of the next higher projection Piv, T^{0max} will get copied, stranding the rest of the TP constituent.

(87) a. Bókina keypti Jón
book-the bought John(Nom)
"John bought the book"

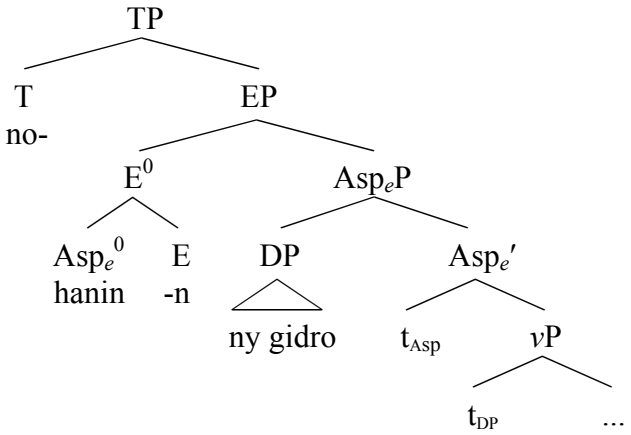
b.



In Malagasy, however, the tense morpheme has a different syntactic status. Recall my assumption from section 2.3.3 that the T^0 head does not form a syntactic constituent with the rest of the verb complex. As shown in (88), the verb stem raises as high as the head of EP before spell-out, and only combines with T^0 in the morphological component—perhaps via a rule which merges linearly adjacent terminals under a single X^0-node, as in Halle & Marantz (1993).[18] How, then, will the inheritance of the [T] feature by Piv be realized in terms of phonological feature pied-piping? Pied-piping of just the features of T^0 is disallowed, since this would break up a morphological word: The tense marker *no-* is as an affix, which (by assumption) is lexically specified as combining with the EP constituent to its left. Pied-piping the features of T^0 and E^0 (containing the tense prefix and the following verb stem) is disallowed as well, since T^0 and E^0 do not form a syntactic constituent. In fact, the minimal syntactic constituent containing the [T] feature which also forms a morphological unit is the entire TP. A copy of TP is thus inserted as a specifier of PivP (and later a copy of PivP is inserted as a specifier of TopP), as a result of which the predicate phrase is spelled out to the left of the external argument.

(88) a. Nohanin'ny gidro ny voankazo
Pst-AccP.eat-Det lemur Det fruit
"The lemur ate the fruit"

b.



Notice that this analysis predicts there will be a strong correlation between T^0- versus TP-raising and the order of morphemes within the verb complex:

(89) a. In languages with *suffixal* tense/aspect morphology, T-to-C movement, if overt, will involve X^0-movement.

b. In languages with *prefixal* (*proclitic*) tense/aspect morphology, T-to-C movement, if overt, will involve XP-movement.

[18] Within Kayne's (1994) Antisymmetry framework, this appears to be the only way to handle prefixation of a higher head to a lower head.

In other words, in languages for which attraction of [T] by C-projections is spelled out at PF, those languages which express tense/aspect by means of suffixes should exhibit head-to-head movement, resulting in either V2 or strict VSO order (depending on whether or not there is also topic/wh-movement into the C-domain). On the other hand, those languages where tense/aspect is expressed by a prefix or proclitic should exhibit successive XP-movement, resulting in right-peripheral subjects or topics in cases where XP-fronting is accompanied by overt DP movement into the C-domain or higher projections of the I-domain.

Although a detailed cross-linguistic comparison remains to be done, there is some promising initial evidence for the correlation in (89). To the best of my knowledge, in all of the major language groups for which VOS (or topic-final) order is attested, either as the basic word order or as a regular alternative to VSO (e.g., Western Austronesian, Polynesian, Mayan), tense/aspect morphology is prefixal or proclitic. For example, in Tzotzil, a Mayan language with VOS basic order, completive and incompletive aspect are marked by means of prefixes and proclitic particles which attach to the left edge of the verb complex. These include the completive prefix *i-* (90a) and the preposition-like incompletive particle *ta* (90b) (examples taken from Aissen 1992a/b):

(90) a. I-s-man vaj ta ch'ivit li Maruch-e
Cpl-3.Erg-buy tortilla in market Det Maruch-Encl
"Maruch bought tortillas in the market"

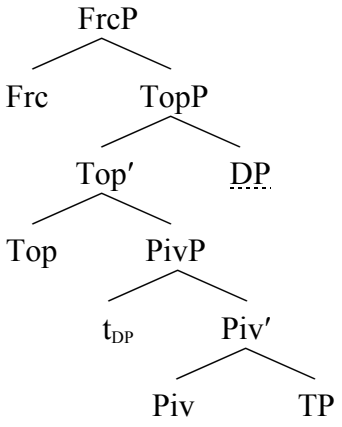
b. Ta s-k'an ta x-bat li Xun-e
Incpl 3.Erg-want Incpl 3-go Det Xun-Encl
"Xun wants to go"

Clearly more needs to be said about the theoretical motivations for XP-movement in Malagasy, as well as the status of the T^0- vs. TP-adjunction parameter and its connection to word order variation and morphology. However, in the interests of space, I will let the above speculations stand, and turn to the issue of empirical support.

4.4. Evidence for predicate raising

I now present two pieces of evidence in favor of a phrasal movement account of predicate-initial order, and against a directionality-based account in the spirit of Guilfoyle, Hung, & Travis (1992) and MacLaughlin (1995). The latter is illustrated by the tree in (2), repeated below as (91), in which the predicate phrase (= TP) remains below the external argument, the latter being situated in a right-peripheral specifier:

(91)



The first piece of evidence, discussed in 4.4.1, concerns the placement of speech-act particles such as the question particle *ve*. Under the predicate-raising analysis, *ve* receives a uniform treatment as a functional head which attracts the closest asymmetrically c-commanded XP into its specifier, whereas the right-specifier analysis in (91) forces us to posit a more complicated analysis of *ve*-placement. The second piece of evidence, discussed in 4.4.2, bears on a crucial predictive difference between the right-specifier analysis and the predicate-raising analysis: Whereas the right-specifier analysis predicts that the external argument will always follow the predicate phrase, the predicate-raising analysis allows for the possibility that raising will fail to take place under certain circumstances, resulting in an 'inverted' surface order where the external argument precedes the predicate phrase at spell-out rather than following it. As I show, inverted orders are in fact attested in certain types of embedded clauses.

4.4.1. The question particle as a second-position element

In this section I discuss the distribution of speech-act particles, in particular the yes/no question particle *ve*. I begin by reviewing the evidence presented in Paul (1999) for treating *ve* as a second-position clitic. In light of this evidence, I argue that only an analysis which derives predicate-initial order via movement of the predicate phrase over the external argument can account for the placement of the speech-act particles in a straightforward manner. I show that these particles immediately follow the highest (leftmost) XP constituent in the clause, the category of which varies depending on the clause type. I capture this distribution by arguing that the speech-act particles are generated in Frc^0, the locus of illocutionary force in the clause. These particles need a phrasal constituent to their left (presumably for morphological reasons); Frc^0 thus attracts the XP in the specifier of its complement, which raises to become the specifier of FrcP. Given the predicate-raising account defended here, together with a limited number of other assumptions, this analysis successfully derives the distribution of particles such as *ve*.

By contrast, if we adopt an analysis such as the one in (91) above, in which the external argument is above and to the right of the predicate phrase, the placement of the speech-act particles cannot be accounted for so straightforwardly. Instead, we must invoke an ad hoc rule which attracts different kinds of XPs into the specifier of FrcP, depending on the type of clause involved. Thus, insofar as it allows for a simple account of particle placement, the predicate-raising analysis is conceptually preferable to the traditional right-specifier analysis.

In section 2.1 I briefly discussed the placement of *ve*, used to mark the sentence as a yes/no question. *Ve* is confined to matrix clauses, where it generally occurs at the boundary between the predicate phrase and the external argument. This holds true regardless of how 'heavy' the predicate phrase is, as the examples in (92) show.

(92) a. Matory *ve* ny gidro?
NomP.sleep Qu Det lemur
"Is the lemur sleeping?"

b. Mamaky ny boky *ve* ny mpianatra?
NomP.read Det book Qu Det student
"Is the student reading the book?"

c. Amonoan'ny mpamboly ny akoho any an-tokotany *ve* ny antsy?
CrcP.kill-Det farmer Det chicken there Obl-yard Qu Det knife
"Is the knife being used by the farmer to kill the chickens in the yard?"

In existential sentences, which lack an overt EA, *ve* appears at the end of the sentence, as in (93). This example shows that *ve* does not occupy some sort of 'reverse Wackernagel' position, linearly preceding the final XP in the clause, whatever that XP may happen to be. Instead, (93) corroborates the generalization that *ve*-placement targets the right edge of the predicate phrase.

(93) Nisy entana tonga *ve*?
Pst-NomP.exist parcel arrived Qu
"Have any parcels arrived?"

Recall from 3.4.2 that in sentences containing constituent focus, *ve* occurs immediately after the focused constituent and before the particle *no* (94). If we assume that such sentences have the structure of clefts, where the focused phrase constitutes the matrix predicate while the constituent introduced by *no* is a free relative functioning as the external argument, then the position of *ve* follows from the generalization above: Here, as in (92)–(93), *ve* targets the right edge of the predicate phrase.

(94) Ny mpianatra *ve* no mamaky ny boky?
Det student Qu Foc NomP.read Det book
"Is it the student who is reading the book?"

Given that the predicate phrase is the portion of the clause associated with 'new information' (the *comment* in the *topic-comment* structure of the sentence), it makes sense from a semantic perspective that *ve* should occur at the periphery of the predicate phrase, inasmuch as it acts as an operator over situations or eventualities. In Pearson (1998a), I assumed that *ve* invariably scopes over the portion of the sentence to its left. However, as we will see below, this generalization is not quite accurate.

A handful of other particles share the same distribution as *ve*, and thus presumably occupy the same position in the clause. The most common of these are *anie*, *angaha*, and *re*. Like *ve*, these particles encode features related to the speech act value, or illocutionary force, of the

sentence: *Anie* (often accompanied by the sentence-final emphatic element *e*) adds exclamatory force, while *angaha* marks the sentence as an exclamatory yes/no question (combining the features of *ve* and *anie*). Finally, *re* is a marker of deference or politeness, used to 'soften' a question or command. These particles are illustrated below (example (95) is taken from MacLaughlin (1995), while (96)–(97) are adapted from texts):

(95) Manasa lamba *anie* Rasoa e!
NomP.wash clothes Excl Rasoa Emph
"Boy, is Rasoa ever washing clothes!"

(96) a. Tsy naka fanafody ho anao *angaha* ny reninao?
Neg Pst-NomP.get medicine Irr Obj-2s Excl.Qu Det mother-2s
"Didn't your mother get medicine for you?"

b. Adala *angaha* ianao, no zaza tambanivohitra no halaina ho vady?
fool Excl.Qu 2s that child peasant Foc Irr-AccP.take as wife
"Are you really such a fool that (you) would take a peasant girl as your wife?"

(97) Vonjeo haingana *re* ny ainao, iangaviako ianao!
AccP.save-Imp quick Emph Det life-2s CrcP.entreat-1s 2s
"Please save your life quickly, I entreat you!"

In the following discussion, I will focus my attention on *ve*. However, my treatment of this element extends straightforwardly to the other speech-act particles.

Various proposals have been made concerning the clause structure position of *ve*. As we saw in 4.1, MacLaughlin (1995) locates this particle in Top^0, while Pensalfini (1995) places it first in C^0, and then in the head of a special mood phrase (MoodP). In Pearson (1998a), I observe that *ve* takes semantic scope over the predicate, and explain the positioning of this particle in terms of selection and feature-checking. Specifically, I treat *ve* as the head of a question projection QuP, which takes PredP (= TP) as its complement. *Ve* has a feature which it needs to check against the predicate, causing it to attract PredP into its specifier. This yields the surface order where *ve* appears to the immediate right of the predicate phrase.[19]

Although an analysis of this sort suffices to explain the positioning of the speech-act particles in (92)–(97), Paul (1999) points out that there are certain constructions in which these particles fail to occur at the right edge of the predicate phrase. I review her data below, and propose a modified version of the analysis in Pearson (1998a) to account for them.

Notice that in the examples in (92)–(97), the predicate phrase is the leftmost phrasal constituent in the clause. However, there are certain cases in which the predicate phrase is not leftmost. For example, in the *dia*-topic construction, discussed in 3.4.3, one or more constituents are fronted, and separated from the rest of the clause by the particle *dia*:

[19] This is reminiscent of Moritz & Valois's (1994) treatment of sentential negation as a spec-head agreement relation between a functional head Neg^0 and the predicate phrase, which raises into SpecNegP at LF.

(98) a. Nanapaka bozaka omaly i Bakoly
Pst-NomP.cut grass yesterday Det Bakoly
"Bakoly cut the grass yesterday"

b. Omaly *dia* nanapaka bozaka i Bakoly
yesterday Top Pst-NomP.cut grass Det Bakoly
"Yesterday, Bakoly cut the grass"

c. I Bakoly *dia* nanapaka bozaka omaly
Det Bakoly Top Pst-NomP.cut grass yesterday
"(As for) Bakoly, (she) cut the grass yesterday"

If *ve* occupied a fixed position to the right of the predicate phrase, we would expect *ve* to come after *bozaka* in (98b) and sentence-finally in (98c). In fact, *ve* occurs in between the topicalized constituent and *dia* in both cases:

(99) a. Nanapaka bozaka omaly *ve* i Bakoly?
Pst-NomP.cut grass yesterday Qu Det Bakoly
"Did Bakoly cut the grass yesterday?"

b. Omaly *ve* dia nanapaka bozaka i Bakoly?
yesterday Qu Top Pst-NomP.cut grass Det Bakoly
"Yesterday, did Bakoly cut the grass?"

c. I Bakoly *ve* dia nanapaka bozaka omaly?
Det Bakoly Qu Top Pst-NomP.cut grass yesterday
"(As for) Bakoly, did (she) cut the grass yesterday?"

Consider also (100a), which contains a constituent topicalized over a cleft construction. Here again, *ve* follows the topicalized constituent and precedes *dia*, as shown in (100b), rather than following the clefted constituent, as we might expect on the basis of examples like (94):

(100) a. Itỳ antsy itỳ dia i Bakoly no nanapaka bozaka taminy
this knife this Top Det Bakoly Foc Pst-NomP.cut grass Pst-with-3
"This knife, it's Bakoly who cut the grass with it"

b. Itỳ antsy itỳ *ve* dia i Bakoly no nanapaka bozaka taminy?
this knife this Qu Top Det Bakoly Foc Pst-NomP.cut grass Pst-with-3
"This knife, is it Bakoly who cut the grass with it?"

In order to maintain the hypothesis that *ve* marks the right edge of the predicate phrase, we would have to argue that in clauses containing a fronted *dia*-topic, it is the *dia*-topic which is the main predicate of the sentence. However, Paul (1999) presents evidence to show that *dia*-topics are not predicates. For one thing, unlike clefted constituents, *dia*-topics may not be negated:

(101) a. *Tsy* i Bakoly no nanapaka bozaka omaly
Neg Det Bakoly Foc Pst-NomP.cut grass yesterday
"It's not Bakoly who cut the grass yesterday"

b. * *Tsy* i Bakoly dia nanapaka bozaka omaly
Neg Det Bakoly Top Pst-NomP.cut grass yesterday
"Not Bakoly, (she) cut the grass yesterday"

Furthermore, although the question particle consistently scopes over focused constituents, *dia*-topics may be either inside or outside its scope. Consider (102a), where *ve* follows the focused constituent, *i Bakoly*: Here, *i Bakoly* constitutes the scopal domain of *ve*, as shown by the fact that (102b), but not (102c), is a semantically appropriate answer to the question:

(102) a. I Bakoly *ve* no manapaka bozaka?
Det Bakoly Qu Foc NomP.cut grass
"Is it Bakoly who is cutting the grass?"

b. Tsia, i Ketaka no manapaka bozaka
no Det Ketaka Foc NomP.cut grass
"No, it's Ketaka who is cutting the grass"

c. # Tsia, i Bakoly no manampirina ny tranony
no Det Bakoly Foc NomP.organize Det house-3
"No, it's Bakoly who is putting her house in order"

Compare (103a), in which *ve* follows a *dia*-topic: Here, the scope of *ve* is not restricted to Bakoly, as it is in (102a). The question does not presuppose that some individual cut the grass and ask whether that individual was Bakoly; rather, it asks about Bakoly whether she cut the grass, or whether something else happened. That *ve* does not (necessarily) include Bakoly in its scope is demonstrated by the fact that both (103b) and (103c) are semantically appropriate answers to the question. These data show that, contra my assumption in Pearson (1998a), it is not the case that *ve* invariably takes scope over the constituent to its left.

(103) a. I Bakoly *ve* dia manapaka bozaka?
Det Bakoly Qu Top NomP.cut grass
"(As for) Bakoly, is she cutting the grass?"

b. Tsia, i Ketaka no manapaka bozaka
no Det Ketaka Foc NomP.cut grass
"No, it's Ketaka who is cutting the grass"

c. Tsia, i Bakoly dia manampirina ny tranony
no Det Bakoly Top NomP.organize Det house-3
"No, Bakoly, she's putting her house in order"

In addition to the *dia*-topic construction, there are other constructions in which the predicate phrase does not occur leftmost in the clause. For example, in the *parallel contrastive fronting* construction, illustrated in (104), the external argument precedes the predicate phrase rather than following it (Keenan 1976). In this construction, two or more clauses are juxtaposed and their EAs contrasted with one another (example taken from Paul 1999).

(104) Ny mpianatra mamaky teny, ny mpampianatra mihaino
Det student NomP.read word Det teacher NomP.listen
"The students read aloud, (while) the teacher listens"

Again, if *ve* targeted the right edge of the predicate phrase, we would expect it to come at the end of the clause in parallel contrastive fronting constructions. However, as Paul (1999) shows, *ve* immediately follows the fronted external argument (example (105b) is adapted from a text):

(105) a. Ny mpianatra *ve* mamaky teny, ny mpampianatra *ve* mihaino?
Det student Qu NomP.read word Det teacher Qu NomP.listen
"Do the students read aloud, (while) the teacher listens?"

b. Ialahy *ve* ho tonga any anefa izahay aza niverina?
2s Qu Irr arrive there although 1ex even Pst-NomP.return
"*You* will reach that place, though even *we* (were forced to) turn back?"[20]

Notice that in all of the cases discussed above, *ve* immediately follows the leftmost maximal projection in the clause. On the basis of this observation, Paul concludes that *ve* is a second-position clitic. Her analysis is corroborated by the examples below, where a sentence containing a single *dia*-topic (106a) is contrasted with a sentence containing multiple topics (106b): Notice that when these sentences are converted into yes/no questions, *ve* is placed between the topic and *dia* in (106a), but after the first topic and before the second topic in (106b). These examples demonstrate clearly that *ve* targets the right edge of the first XP constituent in the clause, whether that XP is a predicate phrase, a fronted topic, or the first of a string of fronted topics.

(106) a. I Ketaka dia nandoko ny tranony
Det Ketaka Top Pst-NomP.paint Det house-3
"As for Ketaka, (he) painted his house"

b. Omaly i Ketaka dia nandoko ny tranony
yesterday Det Ketaka Top Pst-NomP.paint Det house-3
"Yesterday, as for Ketaka, (he) painted his house"

(107) a. I Ketaka *ve* dia nandoko ny tranony?
Det Ketaka Qu Top Pst-NomP.paint Det house-3
"As for Ketaka, did (he) paint his house?"

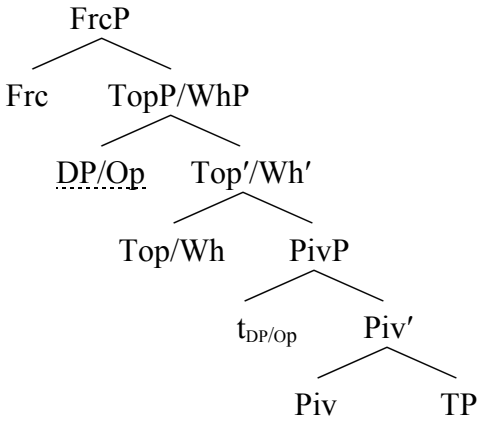
[20] *Ialahy* is an alternative to the regular second person singular pronoun *ianao*, used among men.

b. Omaly *ve* i Ketaka dia nandoko ny tranony?
yesterday Qu Det Ketaka Top Pst-NomP.paint Det house-3
"Yesterday, as for Ketaka, did (he) paint his house?"

Paul (1999) does not offer an explicit analysis of *ve*-placement, though she concludes that there is no fixed position for this particle in the syntax (perhaps it is introduced into the derivation in the morphological component, after the structure has been linearized). Here, however, I will maintain my assumption from Pearson (1998a) that *ve* is a functional head. As I will now show, how we choose to implement a syntactic account of *ve*-placement will vary considerably depending on whether we adopt the predicate-raising analysis presented in 4.2, or the right-specifier analysis illustrated in (91). If we assume that the predicate phrase raises leftward to a c-commanding position above the external argument, then the structural criteria which determine the position of *ve* may be stated in a unified manner. By contrast, if we assume that the predicate phrase is below the external argument, which occupies a right-specifier, then a more complicated, construction-specific rule of *ve*-placement is required.

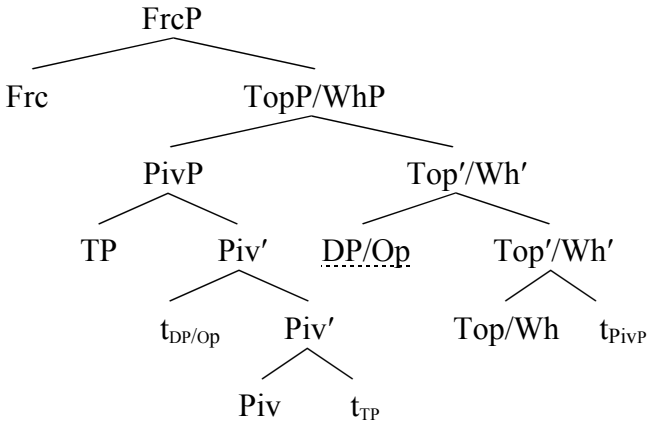
Before I discuss my analysis of *ve*-placement, let me review my assumptions about the structure of the left periphery. Recall once more the hierarchy of C-projections which I argued for in chapter 3:

(108)



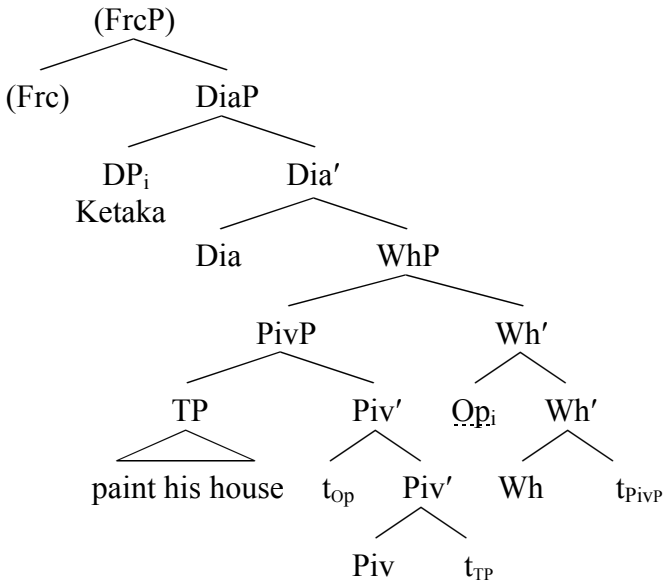
In 4.2 I argued that EA-final order is derived through successive XP-movement: TP raises to the specifier of PivP, while PivP raises to the specifier of TopP/WhP (over the surface position of the EA or null wh-operator), producing the roll-up structure in (109):

(109)



Since the *dia*-topic construction figures prominently in my analysis, I must say something about its syntax. I will assume that the particle *dia* heads its own functional projection (referred to simply as DiaP), and that *dia*-topics are base-generated in the specifier of this projection. DiaP is selected by Frc^0 (if present in the clause), and takes WhP as its complement. In the absence of a resumptive pronoun, null operator raises to the specifier of WhP, and is coindexed with the *dia*-topic, as shown in (110).[21] I assume that DiaP is only projected when the particle *dia* is present in the numeration; thus, DiaP occurs only when it is needed to host a *dia*-topic, and is otherwise absent.[22]

(110) a.



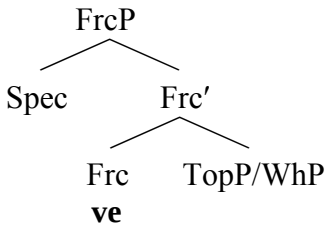
[21] DiaP is presumably a non-L-related projection. However, because its head is overt (lexicalized), it does not need to attract WhP into its specifier in order to satisfy the L-support requirement (section 4.3.3).

[22] Fronted arguments in the parallel contrastive fronting construction, as in (104)–(105), presumably also occupy the specifier of a left-peripheral projection. Here, however, I focus my attention on *dia*-topics.

b. I Ketaka dia nandoko ny tranony
Det Ketaka Top Pst-NomP.paint Det house-3
"As for Ketaka, (he) painted his house"

Where in the structure is *ve* generated? Above I mentioned that *ve* belongs to a class of particles whose function is to mark features pertaining to the illocutionary force of the clause. It thus seems reasonable to locate *ve* and its relatives in the head of FrcP, as in (111). (Notice that by locating the speech-act particles in Frc^0, in complementary distribution with complementizers such as *fa* "that" and *raha* "whether/if/when", we can derive the fact that these particles are confined to matrix clauses.)

(111)



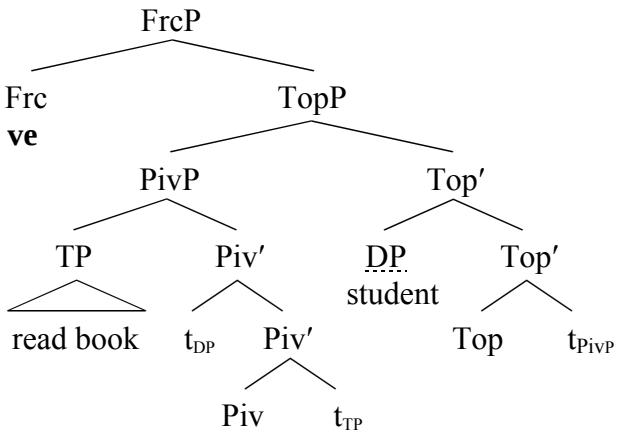
To account for the fact that it must be preceded by an XP, I will assume that *ve* possesses a morphological feature requiring it to encliticize to a maximal projection at PF. To satisfy this feature, *ve* attracts a (maximally local) phrasal constituent into its checking domain, as spelled out in (112):

(112) a. To satisfy its morphological requirements, the force head *ve* attracts the closest specifier in its c-command domain, which raises to become the specifier of FrcP.

b. *Closest specifier*: X is the closest specifier to Y iff (a) Y c-commands X, and (b) there is no specifier Z such that Y c-commands Z and Z c-commands X.

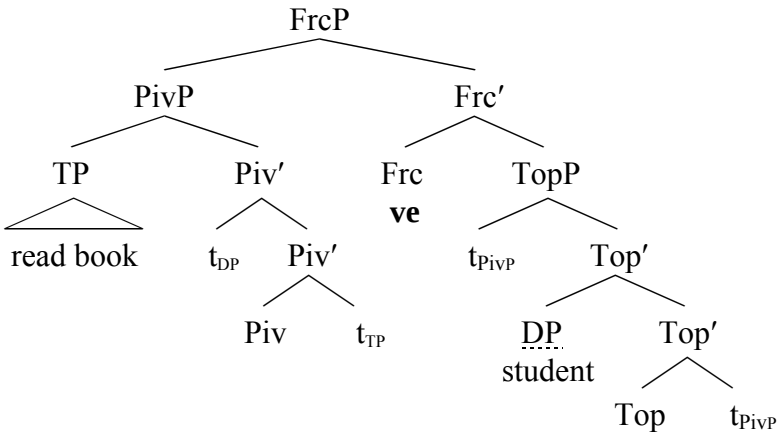
For example, consider the structure in (113), in which Frc^0 selects a TopP complement, *namaky boky ny mpianatra* "the student was reading a book":

(113)



In accordance with (112a), *ve* needs to attract the closest specifier. In the structure in (113), the closest specifier to Frc^0 is PivP, the outer specifier of TopP, which contains the fronted predicate *namaky boky* "was reading a book". PivP thus extracts from TopP and raises to become the specifier of FrcP, as in (114a). This movement yields the correct word order at spell-out, in which *ve* intervenes between the fronted predicate and the EA (114b):

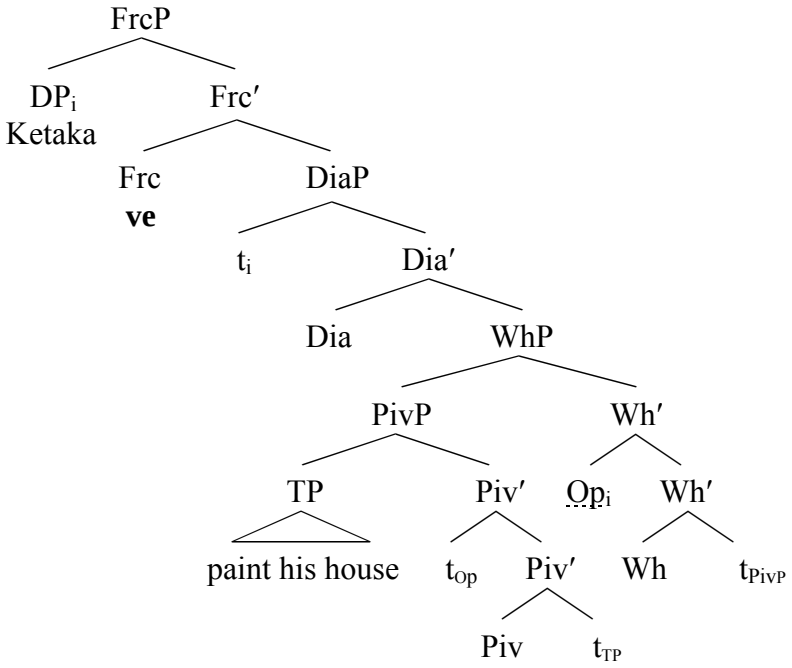
(114) a.



b. Namaky boky *ve* ny mpianatra?
Pst-NomP.read book Qu Det student
"Was the student reading a book?"

(112) generalizes straightforwardly to all of the cases of *ve*-placement considered here. Consider the *dia*-topicalization construction: Here, a DiaP layer is projected in between FrcP and TopP. In this construction, then, the closest specifier to Frc^0 is not PivP, but the fronted topic, which extracts from DiaP and raises to SpecFrcP, as in (115a). Thus (112) predicts that *ve* will be inserted between the fronted topic and the *dia* particle (in Dia^0). This prediction is borne out, as shown in (115b):

(115) a.

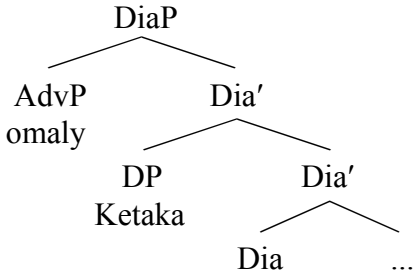


b. I Ketaka *ve* dia nandoko ny tranony?
Det Ketaka Qu Top Pst-NomP.paint Det house-3
"As for Ketaka, did (he) paint his house?"

To account for the fact that sentences may have more than one *dia*-topic, we might extend the structure in (110) by assuming that DiaP can host multiple specifiers, as in (116).

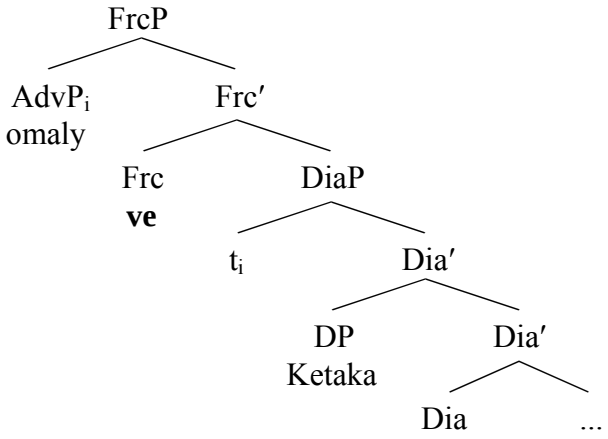
(116) a. Omaly i Ketaka dia nandoko ny tranony
yesterday Det Ketaka Top Pst-NomP.paint Det house-3
"Yesterday, as for Ketaka, (he) painted his house"

b.



In cases of multiple *dia*-topics, the closest c-commanded specifier to Frc^0 is the highest specifier of DiaP—in (116), the adverbial *omaly* "yesterday". This element will thus raise to SpecFrcP, as in (117a), producing a structure in which *ve* intervenes between the two topics, as in (117b):

(117) a.

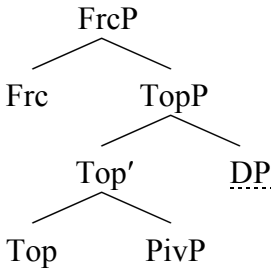


b. Omaly *ve* i Ketaka dia nandoko ny tranony?
yesterday Qu Det Ketaka Top Pst-NomP.paint Det house-3
"Yesterday, as for Ketaka, did (he) paint his house?"

Thus, under the predicate-fronting analysis argued for in 4.2, all cases of *ve*-placement can be accounted for by means of a simple structure-based rule: *ve* attracts the closest XP asymmetrically c-commanded by Frc^0, which raises past it to the clause-initial SpecFrcP position.[23]

By way of comparison, let us now consider how *ve*-placement would be handled if we assumed that the EA position is above and to the right of the predicate phrase, as in (118):

(118)



Let us continue to assume that *ve* is generated in Frc^0, and attracts a phrasal constituent into the specifier of FrcP to satisfy some morphological requirement. Given the structure in (118), can

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[23] In her discussion of *ve*-placement, Paul (1999) considers an analysis along these same lines, but ends up rejecting it on the grounds that the constituent preceding *ve* can be either inside or outside its scopal domain (cf. the contrast in (102) and (103) above). If the second-position status of *ve* involved feature-driven XP-movement to SpecFrcP, we would expect a more consistent mapping between word order and scope.

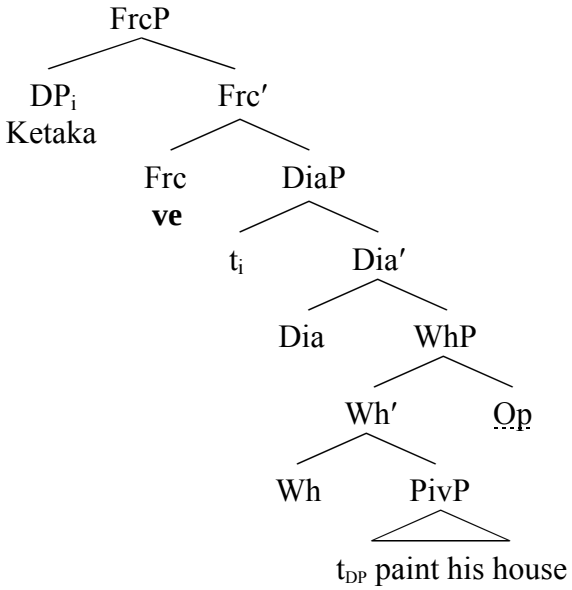
Paul's objection rests on the assumption that movement to a licensing position is necessarily determined by the LF requirements of the attracting head. However, it is widely acknowledged that in at least some cases, movement is motivated solely by the need to satisfy PF requirements (as when a verb undergoes head-movement to left-adjoin to a tense suffix), with no semantic effects at all. Here I argue that movement to SpecFrcP is of this latter type: *ve* is morphologically specified as a phrasal enclitic, and thus requires an XP to its left if the derivation is to converge at PF (that XP presumably reconstructs at LF). Hence, while I agree with Paul's interpretation of the scope facts, I do not take these facts as evidence against a movement-based account of *ve*-placement. In fact, I regard my analysis as nothing but a syntactic implementation of Paul's basic claim that the position of *ve* is morphologically determined.

we formulate a set of consistent structural criteria for determining which phrasal constituent is targeted by Frc^0? I will argue that the answer is no.

With respect to the *dia*-topic construction, the derivation of yes/no questions would proceed in much the same way as I proposed above: The fronted topic is base-generated in the specifier of DiaP and raises to the specifier of FrcP, as in (119). Here, as in my analysis, *ve* attracts the closest specifier into its checking domain, deriving the correct word order:

(119) a. I Ketaka *ve* dia nandoko ny tranony?
Det Ketaka Qu Top Pst-NomP.paint Det house-3
"As for Ketaka, did (he) paint his house?"

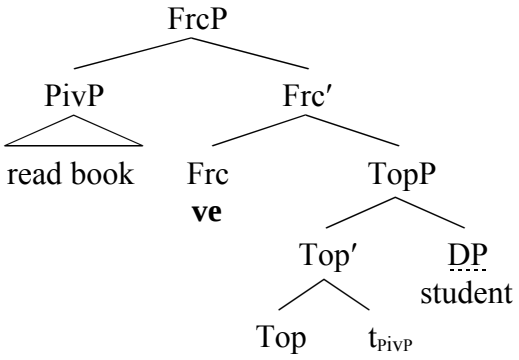
b.



However, we run into problems when we turn to simple sentences such as (114b), repeated below as (120a). In order to derive the correct word order, in which *ve* intervenes between the predicate phrase and the EA, we must assume that PivP (or possibly TP) raises to SpecFrcP (120b):

(120) a. Namaky boky *ve* ny mpianatra?
Pst-NomP.read book Qu Det student
"Was the student reading a book?"

b.

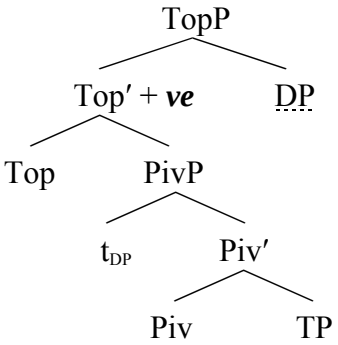


By adopting the tree in (118), then, we lose the structural parallelism between *dia*-topics (in SpecDiaP) and clause-initial predicate phrases (PivP): Under the movement-based theory presented in 4.2, PivP counts as the closest specifier in the c-command domain of Frc^0 unless there is a DiaP in the clause, in which case the specifier of DiaP intervenes between Frc^0 and PivP. This allows us to assume that the morphological requirements of *ve* are satisfied via strictly local XP-movement. However, under the right-specifier theory, in which PivP is spelled out as the complement of Top^0, yes/no questions containing *dia*-topics are derived in a very different manner from those which do not contain *dia*-topics: In the former case, *ve* attracts the closest specifier, while in the latter case, it attracts a constituent from lower down in the tree, skipping over the closest specifier (namely, the EA in SpecTopP). PivP does not share any obvious semantic, categorial, or morphological features with *dia*-topics to which we might appeal in explaining why just these constituents are targeted for raising to SpecFrcP. Therefore, in order to derive the correct placement of *ve*, we are forced to invoke an ad hoc rule: Frc^0 attracts PivP unless DiaP is projected in the clause, in which case it attracts the (closest) specifier of DiaP. This dual condition on feature attraction by Frc^0 is clearly less parsimonious than the single condition in (112).

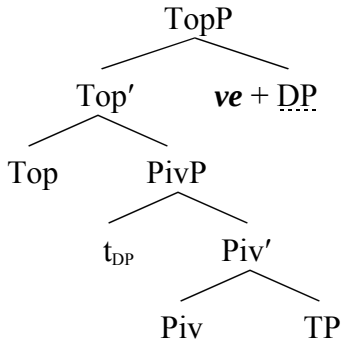
Before we give up on the right-specifier theory, however, let us see how it fares given a different set of assumptions about how *ve*-placement is accomplished. Suppose we assume that *ve* does not occupy a fixed position in the (overt) syntax; instead, its position is determined 'post-syntactically' by morphological rules which are sensitive to both constituent structure and linear order. This is essentially the conclusion reached by Paul (1999), who argues that *ve* is a variable-position clitic which targets the right edge of the leftmost XP in the clause. Is a morphological analysis of *ve*-placement any more compatible with the structure in (118) than a syntactic movement-based analysis?

Here I begin with sentences which lack a *dia*-topic. How do we characterize the position targeted by the *ve*-cliticization rule? In order to ensure that it appears between the predicate phrase and the EA in such sentences, we could assume that *ve* cliticizes to the right of the constituent which projects the root node, namely Top′, as shown in (121a). Alternatively, we could argue that *ve* cliticizes to the left of the highest maximal projection in the clause—where "highest maximal projection" refers to the maximal term immediately dominated by the root node, i.e., the DP in SpecTopP, as in (121b) (assuming for the sake of argument that FrcP is not projected in matrix clauses). Other alternatives, in which *ve* cliticizes to the right of a lower projection such as PivP or TP, are also possible. However, in keeping with the hypothesis that *ve* as a variable-position clitic, I will assume that the rule governing its placement makes reference to general structural notions such as "highest maximal projection", rather than to specific syntactic positions or categories.

(121) a.



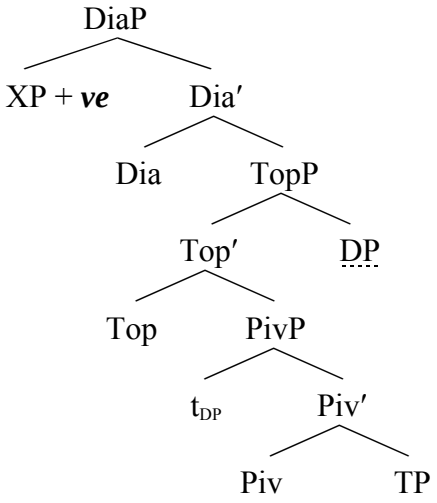
b.



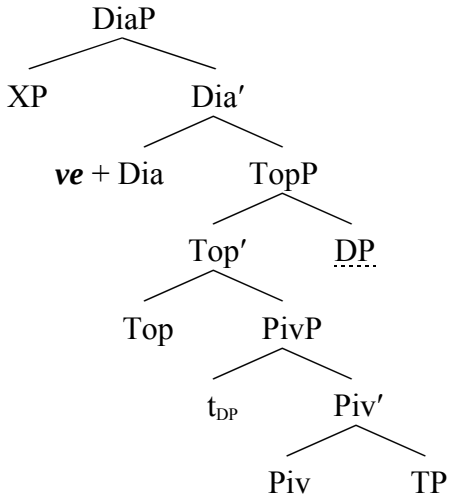
As it turns out, neither (121a) nor (121b) generalizes in any obvious way to the *dia*-topic and parallel contrastive fronting constructions, in which *ve* immediately follows the fronted constituent (or the first fronted constituent, if there is more than one) (122a). The formulation in (121a), according to which *ve* cliticizes to the right of the constituent which projects the root node, incorrectly predicts that the clitic will be right-adjacent to Dia′ (i.e., sentence-final); while the formulation in (121b), according to which *ve* cliticizes to the left of the highest maximal projection in the clause, incorrectly predicts that the clitic will be left-adjacent to the *dia*-topic (i.e., sentence-initial). In fact, the correct generalization for this construction is that *ve* cliticizes either to the right of the highest XP in the clause, as in (122b), or to the left of *dia* (122c):

(122) a. Omaly *ve* dia namaky boky ny mpianatra?
yesterday Qu Top Pst-NomP.read book Det student
"Was the student reading a book?"

b.



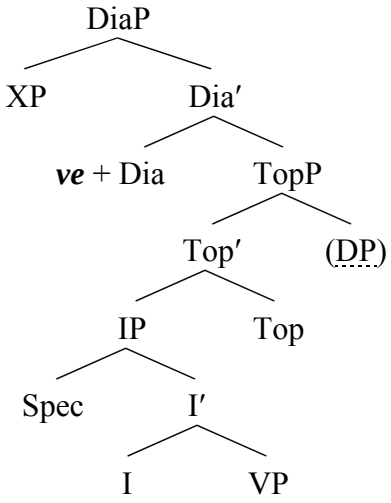
c.



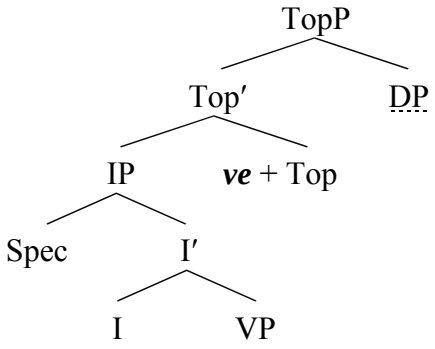
As the contrasting structures in (121) and (122) demonstrate, we are forced by this analysis to assume that the *ve*-cliticization rule varies with the type of clause, either in the directionality of cliticization, or in the structural position it targets. In short, if we assume that DiaP has its specifier on the left while TopP has its specifier on the right, there is no way to capture the distribution of *ve* in terms of a single morphological rule. The right-specifier structure in (118) is thus no more compatible with an analysis which treats *ve* as a variable-position clitic than it is with an analysis which treats *ve* as a functional head.

Note that there is a variant of the tree in (118) which does not present the same problems with regard to *ve*-cliticization, namely the tree argued for by MacLaughlin (1995), mentioned briefly in 4.1. In MacLaughlin's tree, Top^0 selects its complement to the left. Thus, she posits a head position in between the predicate phrase (= IP) and the external argument. Given this extra head position, we could adequately capture the distribution of *ve* if we assumed that it attaches to the left of the highest head position in the clause (viz., the head which projects the root node): Sentences containing *dia*-topics are of category DiaP, and thus *ve* will cliticize to the left of Dia^0, showing up between the topic and the *dia* particle at spell-out (123a). Sentences which do not contain *dia*-topics are of category TopP; thus *ve* will cliticize to the left of the empty head Top^0, showing up between the predicate phrase and the external argument at spell-out (123b):

(123) a.



b.



However, this analysis requires us to stipulate that Top^0 projects a complement-head structure while all of the other categories in the language project a head-complement structure. This is a conceptually unappealing language-internal asymmetry for which there does not seem to be any empirical motivation, other than the need to ensure correct placement of *ve*. I thus reject this alternative in favor of the predicate-raising structure.

4.4.2. Inverted order in embedded clauses

As is well-known, in languages with overt verb movement into the C-domain, this movement is often blocked in certain kinds of embedded contexts, resulting in word order differences among clause types: In Munster Irish, for example, matrix clauses and tensed embedded clauses exhibit VSO order, while non-finite embedded clauses exhibit SVO order (SOV in other dialects). This illustrated in (124a-b) (examples from Bobaljik & Carnie 1996):

(124) a. *Chonaic* Seán an madra
see.Pst Sean the dog
"Sean saw the dog"

b. Ba mhaith liom [Seán a *scríobh* na habairte]
is good with-me Sean Part write the sentence.Gen
"I want Sean to write the sentence"

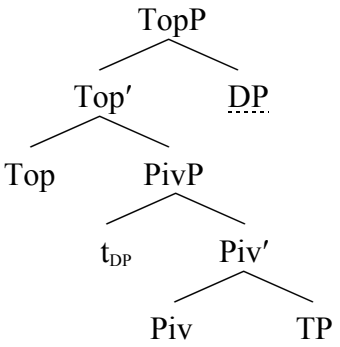
In most verb-second languages, T-to-C raising is blocked in embedded clauses containing an overt complementizer. This is illustrated in (125) for Swedish, where the presence or absence of raising is shown by the relative order of the finite auxiliary and the negative marker *inte*:

(125) a. Malin *har* inte besökt sin mor
Malin has not visited 3s mother
"Malin has not visited her mother"

b. Jag vet [att Malin inte *har* besökt sin mor]
I know that Malin not has visited 3s mother
"I know that Malin has not visited her mother"

If PredP-initial order in Malagasy results from a 'roll-up' XP-movement derivation, and if this movement is required for reasons similar to those which trigger T-to-C raising in V2 languages, this allows the possibility that, under circumstances similar to those in (124b) or (125b), the predicate phrase might fail to raise over the external argument, resulting in a situation where the EA is spelled out at the left periphery of its clause instead of the right periphery. By contrast, all other things being equal, no such variation in word order is expected under the directionality-based analysis, according to which the EA raises into the right-specifier of TopP, from which it c-commands the predicate phrase at spell-out:

(126)



If the structure in (126) were correct, then we would not expect any variability in the relative order of the predicate phrase and the EA. The EA should be uniformly right-peripheral, regardless of how high the verb (phrase) raises.

As I will show in this section, there is in fact evidence for EA-initial order in certain kinds of embedded clauses, including the complements of perception verbs and some kinds of adverbial clauses. In order to explain the left-peripheral position of the EA under the analysis in (126), we would have to assume that the EA raises from SpecTopP to some higher left-specifier position in these clauses, a movement for which there is no independent motivation.

Before proceeding with the evidence, a word of caution is in order: In attempting to identify potential cases of EA-initial embedded clauses, one must be careful to rule out plausible alternative analyses. For example, consider the raising-to-object construction discussed in 3.5.2:

(127) Nanantena an'i Noro ho nianatra tsara Rakoto
Pst-NomP.hope Obj-Det Noro Pst-NomP.study well Rakoto
"Rakoto hoped of Noro that she studied well"

Here the DP *i Noro* precedes the embedded predicate phrase *nianatra tsara* "studied well", to which it bears a thematic relation. Thus we might choose to identify (127) as a potential example of EA-initial order in embedded clauses. This was the conclusion I reached in Pearson (1997, 1998a), where I argued that (127) has the structure in (128): *i Noro* is the left-peripheral EA of the embedded clause, and thus occupies the specifier of an embedded TopP projection, in which

it receives exceptional case from the matrix verb (in the form of the morphological objective case prefix *an-*; cf. section 2.3.1):

(128) Nanantena [$_{TopP}$ an'i Noro$_i$ [$_{Top'}$ ho nianatra t_i tsara]] Rakoto

However, subsequent research has shown that this analysis cannot be correct. In 3.5.2, I presented evidence from adverb placement, etc., to show that *an'i Noro* occupies a position within the matrix clause where it receives abstract accusative case (namely, SpecAsp$_r$P), and does not form a constituent with the embedded predicate at spell-out. This leaves us with two alternative analyses: Either *an'i Noro* is generated in the embedded clause and raises into SpecAsp$_r$P by way of the embedded SpecPivP position, as in (129a) (cf. Travis 1991a), or it is base-generated outside the embedded predicate and coindexed with a null operator in the embedded SpecWhP, which in turn forms a chain with the embedded SpecPivP position, as in (129b):

(129) a. Nanantena an'i Noro$_i$ ho [... [$_{PivP}$ t_i [$_{Piv'}$ nianatra t_i tsara]]] Rakoto

b. Nanantena an'i Noro$_i$ ho [$_{WhP}$ Op$_i$ [$_{PivP}$ t_i [$_{Piv'}$ nianatra t_i tsara]]] Rakoto

In 3.5.2 I argued in favor of the analysis in (129b) and against the analysis in (129a), on the grounds that SpecPivP is an A′-position and SpecAsp$_r$P is an A-position, and movement from an A′-position to an A-position is ruled out by the theory. However, regardless of whether (129a) or (129b) is correct, both analyses are neutral with regard to the constituent order in the embedded clause: Since the C-domain of the embedded clause is occupied exclusively by empty categories (traces and/or null operators), it is impossible to tell whether the SpecTopP position is to the left of the predicate phrase, as I assume, or to the right, as in the directionality-based account.

That caveat aside, I believe that there is compelling evidence for the existence of EA-initial order in certain kinds of embedded clauses, where this order is plausibly due to the absence of predicate-raising. I discuss some examples below, focusing on the complements of perception predicates.

The two most common perception predicates in Malagasy are *re* "heard" and *hita* "seen, found". Typically these function as uninflected adjectival 'root passives' (cf. 2.4.1), forming transitive clauses in which the DP denoting the experiencer maps to the predicate-internal subject position while the theme maps to the EA position, as in (130a) and (131a). However, *hita* and *re* may also take derivational morphology to form NomP verbs in which the experiencer is the EA and the theme is a predicate-internal direct object, as in (130b) and (131b):[24]

(130) a. Ren'ny zaza ny alika
heard-Lnk-Det child Det dog
"The child heard the dog"

[24] The uninflected forms in (130a)/(131a) appear to be more common, the inflected forms being confined to situations in which the experiencer is especially salient, or in which the NomP voice is required for purely structural reasons (e.g., when the theme is indefinite, or in relative clauses where the expriencer is the relativized argument).

b. Nahare ny alika ny zaza
Pst-NomP.hear Det dog Det child
"The child heard the dog"

(131) a. Hitan'ny vehivavy i Naivo
seen-Lnk-Det woman Det Naivo
"The woman saw Naivo"

b. Nahita an'i Naivo ny vehivavy
Pst-NomP.see Obj-Det Naivo Det woman
"The woman saw Naivo"

In addition to taking individual-denoting themes, as in (130)–(131), perception verbs may also take event-denoting themes, comprised of a DP pivot followed by a predicate phrase. When the perception verb is in the NomP form, the DP receives morphological objective case-marking (shown by the presence of *an-* on *Rabe*):

(132) a. Nahare an-dRabe niditra tao an-trano ny zaza
Pst-NomP.hear Obj-Rabe Pst-NomP.enter Pst-there Obl-house Det child
"The child heard Rabe enter the house"

b. Nahita an-dRabe namaky boky ny mpampianatra
Pst-NomP.see Obj-Rabe Pst-NomP.read book Det teacher
"The teacher saw Rabe read(ing) a book"

Notice that the embedded predicate phrase follows the DP *Rabe* of which it is predicated. Do the examples in (132) constitute a case of EA-initial order in embedded clauses? Superficially, these sentences look very much like the raising-to-object sentence in (133a) below, except that the particle *ho* is absent. In 3.5.2 I argued that the raising-to-object construction has the structure in (133b), where *ho* is the head of a small clause selected by the matrix verb, which takes the objective case-marked DP as its subject and a free relative (containing an operator-variable chain) as its complement. Perhaps perception predicates have the same structure, except that the head of the small clause is phonetically null for some reason—in which case *Rabe* in (132) is not the EA of the embedded clause (that role being filled by a null operator). If this analysis is correct, then we would have no evidence for EA-initial order in perception complements (cf. the discussion of (129) above).

(133) a. Mihevitra an-dRabe ho manaja ny mpampianatra i Tenda
NomP.think Obj-Rabe NomP.respect Det teacher Det Tenda
"Tenda believes of Rabe that (he) respects the teacher"
or "Tenda believes Rabe to respect the teacher"

b. Mihevitra [$_{XP}$ an-dRabe [$_{X'}$ *ho* [$_{WhP}$ Op manaja ny mpampianatra]]] i Tenda
lit. "Tenda believes Rabe (to be) (one who) respects the teacher"

However, the construction in (132) turns out to have very different properties from the raising-to-object construction in (133). Recall from the discussion in 3.5.2 that in raising-to-object sentences, the matrix object may be separated from the embedded clause by an adverb which modifies the matrix verb, as in (134b), showing that the matrix object does not form a constituent with the embedded clause at spell-out:

(134) a. Nilaza *tamin-katezerana* an-dRabe ho mpangalatra Rasoa
Pst-NomP.say Pst-with-anger Obj-Rabe thief Rasoa
"Rasoa said angrily of Rabe that (he was) a thief"

b. ? Nilaza an-dRabe *tamin-katezerana* ho mpangalatra Rasoa
Pst-NomP.say Obj-Rabe Pst-with-anger thief Rasoa
"Rasoa said of Rabe angrily that (he was) a thief"

The fact that (134b) is marginal when compared to (134a) can be attributed to a general preference among speakers for ordering manner adverbs before [+specific] direct objects; compare the judgements in (134) with those in (135):

(135) a. Namono *tamin-katezerana* ny akoho ny mpamboly
Pst-NomP.kill Pst-with-anger Det chicken Det farmer
"The farmer killed the chicken angrily"

b. ? Namono ny akoho *tamin-katezerana* ny mpamboly
Pst-NomP.kill Det chicken Pst-with-anger Det farmer
"The farmer killed the chicken angrily"

By contrast, the pivot of the embedded verb in a perception complement may not be separated from the embedded PredP by a matrix adverb. Consider the negative polarity adverb *intsony* "anymore". When perception verbs occur in simple transitive (NomP) clauses, *intsony* generally follows the direct object, although it may marginally precede it if the object is [+specific], as shown in (136):

(136) a. ? Tsy mijery *intsony* ny namany izy ireo
Neg NomP.watch anymore Det friend-3 3p
"They are not watching their friends anymore"

b. Tsy mijery ny namany *intsony* izy ireo
Neg NomP.watch Det friend-3 anymore 3p
"They are not watching their friends anymore"

When we replace the DP object *ny namany* "their friends" with the clausal complement *ny namany miady* "their friends fight", we get the results shown below: The preference is for *intsony* to follow *ny namany miady* (137c), although it may marginally precede this string (137a). However, it is barred from intervening between the DP and the verb (137b).

(137) a. ? Tsy mijery *intsony* ny namany miady izy ireo
Neg NomP.watch anymore Det friend-3 NomP.fight 3p
"They are not watching their friends fight anymore"

b. * Tsy mijery ny namany *intsony* miady izy ireo
Neg NomP.watch Det friend-3 anymore NomP.fight 3p
"They are not watching their friends fight anymore"

c. Tsy mijery ny namany miady *intsony* izy ireo
Neg NomP.watch Det friend-3 NomP.fight anymore 3p
"They are not watching their friends fight anymore"

I take this as evidence that *ny namany miady* forms a constituent at spell-out, and has the same basic distribution as a nominal complement (see Rackowski 1998, Pearson 1998b, Rackowski & Travis 2000, and Pearson 2000b, [in preparation] for discussion and analysis concerning the relative order of objects and adverbs).

As further evidence that the embedded predicate forms a constituent with the preceding DP in perception constructions but not in raising-to-object constructions, consider the following facts pertaining to externalization of embedded elements. As I discussed in 3.5.2, the object of a raising-to-object verb such as *mihevitra* "think" may be promoted to the matrix EA position, triggering the appropriate voice morphology on the verb. Compare (138a) below, in which *Rasoa* is marked with the objective prefix *an-* and the matrix verb appears in the NomP form, with (138b), in which *Rasoa* has raised to become the EA and the matrix verb appears in the AccP form. (The fact that *Rasoa* is the external argument in (138b) is shown by the placement of the question particle *ve*.)

(138) a. Mihevitra an-dRasoa ho namono ny akoho [*ve*] i Bao
NomP.think Obj-Rasoa Pst-NomP.kill Det chicken Det Bao
"Bao believes Rasoa to have killed that chicken"

b. Heverin'i Bao ho namono ny akoho [*ve*] Rasoa
AccP.think-Det Bao Pst-NomP.kill Det chicken Rasoa
"Rasoa, Bao believes to have killed that chicken"

Although it is possible to externalize the objective-marked DP by itself, it is not possible to externalize the string consisting of the DP and the embedded predicate phrase to which it bears a thematic relation, as shown in (139). I take this as evidence that *Rasoa ho namono ny akoho* does not form a surface constituent—or at least, not a constituent capable of functioning as the external argument of a clause.[25]

[25] An alternative construction, in which the embedded constituent introduced by *ho* is extraposed to the end of the clause, is also ruled out by (139).

(139) * Heverin'i Bao [*ve*] Rasoa ho namono ny akoho
AccP.think-Det Bao Rasoa Pst-NomP.kill Det chicken
"Rasoa to have killed the chicken, Bao believes"

With perception verbs, the situation is different. When *hita* "seen" and *re* "heard" occur in the uninflected 'root passive' form (cf. (130b) and (131b) above), there are two options with regard to which constituent maps to the EA position: Either the objective case-marked DP is externalized, as in (140b) and (141b), or the string consisting of the DP and the following predicate phrase is externalized, as in (140c) and (141c).[26] These two options are distinguished by word order, as well as by the position of *ve*. The contrast between (140c)/(141c) and the ungrammatical sentence in (139) reinforces the conclusion that perception complements have a different structure from raising-to-object complements.

(140) a. Nahare an-dRabe niditra tao an-trano [*ve*] i Koto
Pst-NomP.hear Obj-Rabe Pst-NomP.enter there Obl-house Det Koto
"Koto heard Rabe come into the house"

b. Ren'i Koto niditra tao an-trano [*ve*] Rabe
heard-Det Koto Pst-NomP.enter there Obl-house Rabe
"Rabe, Koto heard (him) come into the house"

c. Ren'i Koto [*ve*] Rabe niditra tao an-trano
heard-Det Koto Rabe Pst-NomP.enter there Obl-house
"Rabe coming into the house, we heard (it)"

(141) a. Nahita an-dRabe namaky boky [*ve*] ny mpampianatra
Pst-NomP.see Obj-Rabe Pst-NomP.read book Det teacher
"The teacher saw Rabe reading a book"

b. Hitan'ny mpampianatra namaky boky [*ve*] Rabe
seen-Det teacher Pst-NomP.read book Rabe
"Rabe, the teacher saw (him) reading a book"

c. Hitan'ny mpampianatra [*ve*] Rabe namaky boky
seen-Det teacher Rabe Pst-NomP.read book
"Rabe reading a book, the teacher saw (it)"

As a final piece of evidence for the difference in constituency between raising-to-object complements and perception complements, note that they behave differently with regard to clefting possibilities. In the case of perception complements, one may cleft either the DP by itself (142a), or

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[26] In (140c), I underline *Rabe niditra tao an-trano*, suggesting that this constituent has raised to the EA position (similarly for *Rabe namaky boky* in (141c)). If the EA position is confined to elements of category DP, then another possibility to consider is that the constituent is sitting in the position occupied by extraposed clauses (4.2.3), and the EA position is empty, or filled with a null expletive. Whichever analysis we choose, the contrast between (140c)/(141c) and (139) remains.

a constituent consisting of the DP and the following predicate phrase (142b). In the case of raising-to-object predicates, only the DP may be clefted (143a); clefting the DP together with the following predicate phrase is impossible (143b):

(142) a. Rabe no hitan'ny mpampianatra namaky boky
Rabe Foc seen-Det teacher Pst-NomP.read book
"It was Rabe who the teacher saw reading a book"

b. Rabe namaky boky no hitan'ny mpampianatra
Rabe Pst-NomP.read book Foc seen-Det teacher
"It was Rabe reading a book that the teacher saw"

(143) a. Rasoa no heverin'i Bao ho namono ny akoho
Rasoa Foc AccP.think-Det Bao Pst-NomP.kill Det chicken
"It is Rasoa who Bao believes to have killed the chicken"

b. * Rasoa ho namono ny akoho no heverin'i Bao
Rasoa Pst-NomP.kill Det chicken Foc AccP.think-Det Bao
"It is (for) Rasoa to have killed the chicken that Boa believes"

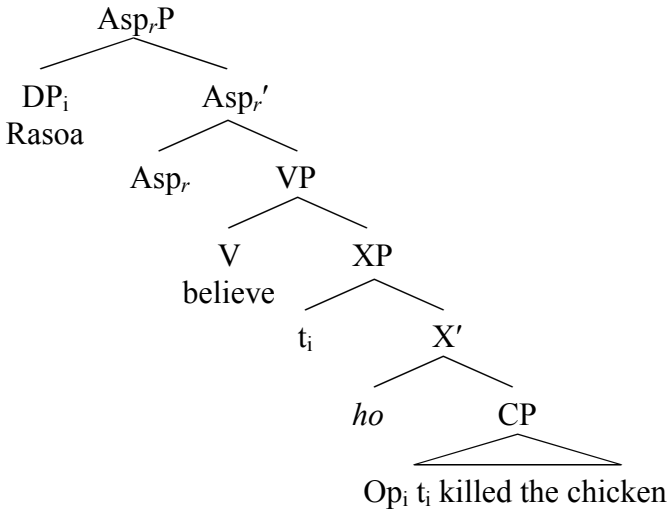
Summarizing these observations, it appears that in perception complements the DP forms a constituent with the following predicate, and that this constituent is capable of being externalized or clefted. In raising-to-object constructions, by contrast the DP does not form a constituent (of the same type) with the following predicate phrase.

The difference between the two constructions, I would argue, has to do with what constituent the matrix verb assigns abstract case to. In the raising-to-object construction, the verb assigns case to the DP; while in the perception verb construction, the verb assigns case to the entire complement, a constituent comprised of a DP and a following predicate phrase, which I will provisionally designate αP (more on the identity of this constituent below). Assuming, as in 2.3.3, that the abstract accusative case features of the object are checked in the specifier of Asp_rP, dominating the lower VP shell (roughly equivalent to Agr_OP), we can represent this difference in terms of the tree structures in (144c) and (145b) below: Raising-to-object verbs such as *mihevitra* "think, believe" select an XP small clause headed by *ho*, containing a DP in its specifier (3.5.2). This DP extracts from XP and raises to check its abstract case features in $SpecAsp_rP$:

(144) a. Mihevitra an-dRasoa ho namono ny akoho i Bao
NomP.think Obj-Rasoa Pst-NomP.kill Det chicken Det Bao
"Bao believes Rasoa to have killed that chicken"

b. Heverin'i Bao ho namono ny akoho Rasoa
AccP.think-Det Bao Pst-NomP.kill Det chicken Rasoa
"Rasoa, Bao believes to have killed that chicken"

c.

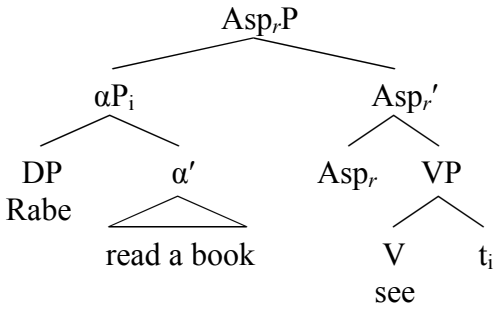


After raising to SpecAsp$_r$P, the DP may raise on to become the external argument of the clause, triggering the insertion of the AccP morpheme *-in*, as in (144b), or it may remain in situ, in which case it will be marked with morphological objective case, as in (144a).

Perception verbs, in addition to selecting an individual-denoting DP complement, may select an event-denoting complement of category αP. This αP constituent bears an abstract case feature which must be checked, and so it raises to SpecAsp$_r$P, yielding the structure in (145b):

(145) a. Nahita an-dRabe namaky boky ny mpampianatra
Pst-NomP.see Obj-Rabe Pst-NomP.read book Det teacher
"The teacher saw Rabe read(ing) a book"

b.



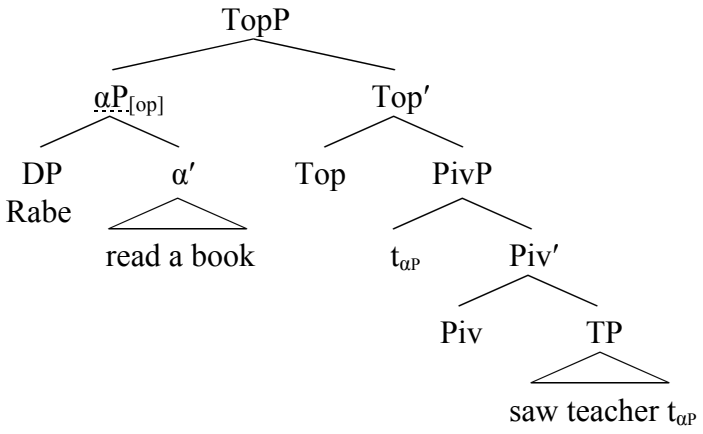
If the subject of the perception verb is promoted to the pivot function, triggering NomP marking on the verb, as in (145a) above, then αP remains in SpecAsp$_r$P and receives morphological objective case, which is spelled out on the DP in the specifier of αP. I speculate that the DP receives morphological case via feature sharing with the head α^0. (This may be thought of as a 'post-government' reformulation of ECM in terms of spec-head agreement.)

However, if αP is promoted to the pivot function, one of two derivations is possible, depending on whether the scope feature [op] is associated to αP itself, or to the DP in the specifier of αP. In the former case, αP raises to the specifier of the matrix PivP, and then raises on to the specifier of TopP, producing the sentence in (146a). The movement of αP to SpecTopP via SpecPivP is shown schematically in (146b). The actual surface structure for (146a), in which TP

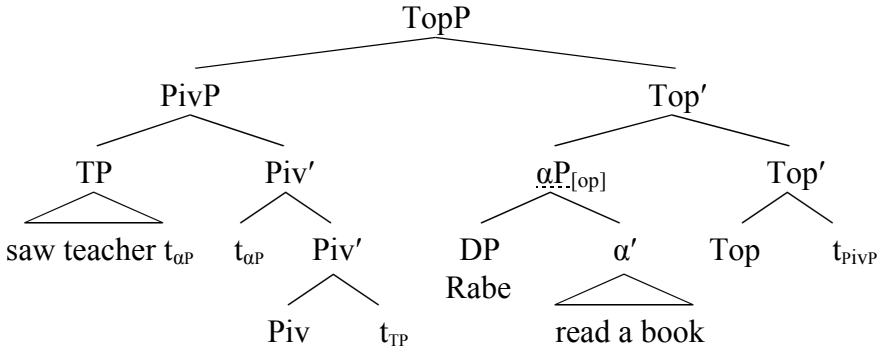
raises to become the outer specifier of PivP and PivP raises to become the outer specifier of TopP, thereby deriving the correct word order, is shown in (146c):

(146) a. Hitan'ny mpampianatra Rabe namaky boky
seen-Det teacher Rabe Pst-NomP.read book
"Rabe reading a book (is such that) the teacher saw (it)"

b.



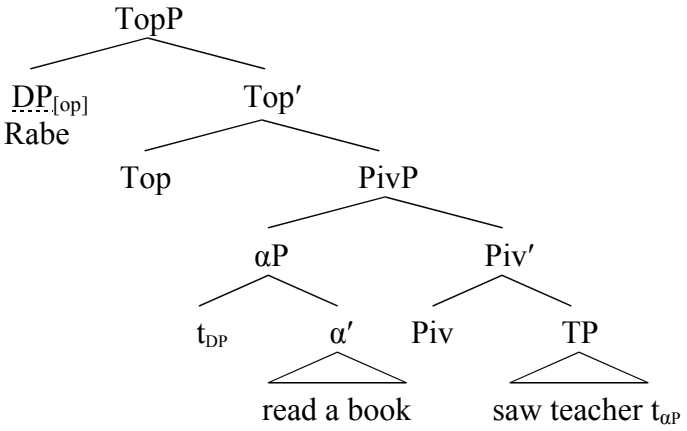
c.



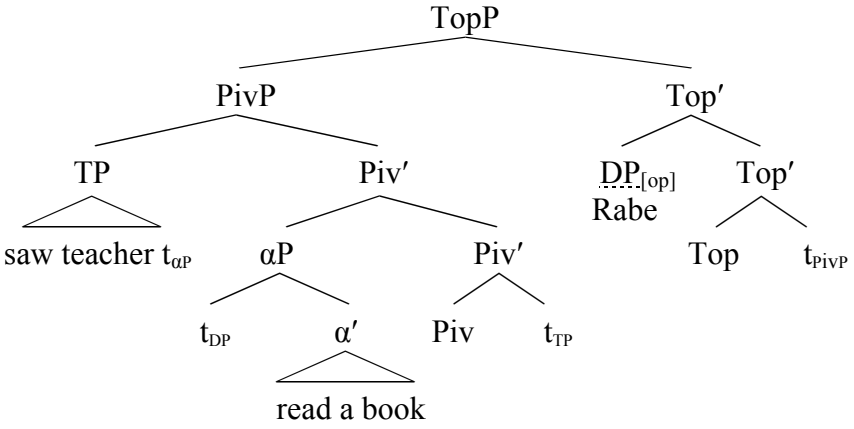
To produce (147a), where the sentence is predicated of the individual Rabe, αP first raises to the matrix SpecPivP position, after which the DP *Rabe* extracts from its specifier and raises to Spec-TopP (cf. the derivation of long-distance externalization cases discussed in 3.3.2). This is shown schematically in (147b); the actual surface structure for (147a), complete with movement of TP to SpecPivP and movement of PivP to SpecTopP, is given in (147c):

(147) a. Hitan'ny mpampianatra namaky boky Rabe
seen-Det teacher Pst-NomP.read book Rabe
"Rabe (is such that) the teacher saw (him) reading a book"

b.



c.



Let us now consider the identity and internal structure of this αP constituent. As the examples below show, αP resembles a matrix clause, except that the DP constituent corresponding to the external argument is at the left edge of the constituent instead of the right edge:

(148) a. Nitomany ny alika
Pst-NomP.cry Det dog
"The dog was crying"

b. Ren'ny vehivavy [ny alika nitomany]
heard-Det woman Det dog Pst-NomP.cry
"The woman heard the dog crying"

(149) a. Namaky boky ny mpianatra
Pst-NomP.read book Det student
"The student was reading a book"

b. Hitan'ny mpampianatra [ny mpianatra namaky boky]
seen-Det teacher Det student Pst-NomP.read book
"The teacher saw the student reading a book"

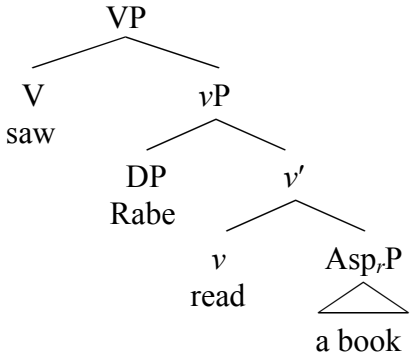
Given the predicate-raising analysis which I argued for in 4.2, a plausible hypothesis is that the bracketed constituents in (148b) and (149b) are embedded clauses, which differ minimally from the matrix clauses in (148a) and (149a) in that the predicate phrase fails to raise over the EA—in the same way that non-finite verbs fail to raise over the subject in Irish (cf. (124)). If empirical support can be found for this hypothesis, we can take this as strong evidence in favor of the predicate-raising analysis, and against the right-specifier analysis, which predicts that the EA should follow the predicate phrase in all clause types.

There are two basic questions which must be answered about the αP constituent: First, what lexical category does it belong to? Second, does the surface order DP + PredP reflect the order of these constituents in the base, or is the surface order derived from a more basic predicate-initial order by means of DP-fronting? Here I will consider four alternative analyses: (a) αP is a *v*P (or some other truncated predicative category); (b) αP is a DP containing a modifying relative clause; (c) αP is a full clause in which the EA has been fronted (presumably to SpecFrcP) from its normal right-peripheral position; (d) αP is a full clause in which the EA occupies its normal SpecTopP position and the predicate has failed to undergo fronting. I will show that the evidence points towards option (d).

Consider the example in (145), repeated below as (150a): Based on the standard analysis of perception complements in English, one might suppose that perception verbs in Malagasy do not select full CPs, but rather 'truncated' clauses (or small clauses) of some sort. Suppose, for example, that αP is of category *v*P, as shown in (150b), in which case *Rabe* is not an EA at all, but a VP-internal subject. If this analysis were correct, then the fact that perception predicates exhibit DP + PredP order would have no bearing on the choice between the predicate-raising analysis and the right-specifier analysis, since both theories assume that VP-internal subjects occupy a left-specifier.

(150) a. Nahita an-dRabe namaky boky ny mpampianatra
Pst-NomP.see Obj-Rabe Pst-NomP.read book Det teacher
"The teacher saw Rabe read(ing) a book"

b.



On the face of it, it seems unlikely that αP is a *v*P, since the embedded verb is marked for tense. However, suppose we assume that tense-marking in this case does not represent the overt instantiation of a T^0 head in the embedded clause, but is instead inserted post-syntactically in accordance with a morphological constraint requiring that all verbs be marked for tense (recall from 2.2.5 that Malagasy verbs lack infinitival forms). Even if we make this assumption, we run into problems in analyzing *Rabe* as a VP-internal subject rather than an EA. As shown in (151), pre-

dicates embedded under perception verbs may take the full array of voice forms, allowing notional subjects, objects, and obliques to function as pivots, just as in main clauses:

(151) a. Ren'ny zaza [Rabe namono akoho tamin'ny antsy]
heard-Det child Rabe Pst-NomP.kill chicken Pst-with-Det knife
"The child heard Rabe killing chickens with a knife"

b. Ren'ny zaza [ny akoho novonoin-dRabe tamin'ny antsy]
heard-Det child Det chicken Pst-AccP.kill-Rabe Pst-with-Det knife
"The child heard the chickens being killed by Rabe with a knife"

c. Ren'ny zaza [ny antsy namonoan-dRabe akoho]
heard-Det child Det knife Pst-CrcP.kill-Rabe chicken
"The child heard the knife being used by Rabe to kill chickens"

In chapters 2 and 3 I presented evidence to show that the function of voice marking is to identify the abstract case of an A′-moved DP. Thus, *Rabe* in (148) must be sitting in an A′-position rather than the VP-internal subject position. This in turn means that αP must be a larger constituent than *v*P, something large enough to include TopP, or at least PivP. We can therefore set aside the truncated clause analysis of perception complements.

However, there is another possible analysis of αP which, if correct, would render perception complements irrelevant to the question of whether the predicate-raising or right-specifier analysis of EA-final order is correct. Recall from 3.4.1 that relative clauses in Malagasy follow the head noun, and do not require an overt relative clause marker (the wh-operator *izay*, which may be used to introduce relative clauses, is generally optional and frequently omitted). Furthermore, the voice marking on the embedded verb reflects the grammatical function of the noun being relativized—e.g., if the notional subject of the embedded verb is being relativized, then the verb will occur in the NomP form, and if the direct object is being relativized, the AccP or DatP form will be used, as shown in (152):

(152) a. ny zazalahy namangy ahy an-tsekoly omaly
Det boy Pst-NomP.visit 1s Obl-school yesterday
"the boy who visited me at school yesterday"

b. ny zazalahy novangiako an-tsekoly omaly
Det boy Pst-DatP.visit-1s Obl-school yesterday
"the boy who I visited at school yesterday"

Notice how the DPs in (152) resemble the bracketed αPs in (151): Each consists of a nominal phrase headed by a determiner, followed by a predicate phrase whose verb agrees in voice with the nominal phrase. Given this resemblance, it is conceivable that the bracketed strings in (151) are not clausal complements at all, but DPs containing relative clauses. Consider (153a) below: The two possible analyses for the bracketed constituent are given in (153b-c) (under the latter analysis, the sentence may be translated "The teacher saw the student who was reading the book"):

(153) a. Hitan'ny mpampianatra [ny mpianatra namaky boky]
seen-Det teacher Det student Pst-NomP.read book
"The teacher saw the student reading the book"

b. *Clausal analysis*: [$_{TopP}$ [$_{DP}$ ny mpianatra] [$_{PivP}$ namaky boky]]

c. *DP analysis*: [$_{DP}$ ny mpianatra [$_{WhP(rel)}$ namaky boky]]

The only way to decide between the clausal analysis and the DP analysis is to determine whether the predicate phrase *namaky boky* "read a book" is internal to the noun phrase containing *mpianatra* "student", as in (153c), or external to it, as in (153b).

Fortunately, Malagasy provides a handy test for detecting the boundaries of a DP, namely the so-called *framing demonstrative* construction. As I mentioned in 2.3.1, demonstrative determiners, such as *ity* "this (one)", are generally spelled out as a pair of copies, the first of which occurs at the left edge of the DP, and the second of which occurs at the right edge of the DP. This construction is illustrated in (154). Crucially, the second copy of the demonstrative must always target the right edge of the DP, regardless of how 'heavy' that DP is. Note in particular that it must follow a relative clause, as shown in (154c-d):[27]

(154) a. *ity* boky *ity*
this book this
"this book"

b. *ity* boky mena *ity*
this book red this
"this red book"

c. *ity* boky novakin'ny mpianatra tany an-tokotany *ity*
this book Pst-AccP.read-Det student Pst-there Obl-garden this
"this book which the student was reading in the garden"

d. * *ity* boky *ity* novakin'ny mpianatra tany an-tokotany
this book this Pst-AccP.read-Det student Pst-there Obl-garden
"this book which the student was reading in the garden"

---

[27] The proper syntactic treatment of framing demonstratives has received little attention in the literature. One possible analysis is illustrated in (i): (a) The demonstrative determiner is generated in the head of Dem(onstrative)P, which takes NumP (containing the NP) as its complement. (b) NumP raises into the specifier of DemP to check number agreement on the demonstrative (recall from 2.3.1 that demonstratives are the only elements in Malagasy which mark number concord with nouns). (c) The demonstrative raises to D^0, leaving behind a pronounced copy in Dem^0. The fact that the second copy obligatorily occurs at the right edge of the DP follows from the fact that its complement, NumP, has raised past it. (For a different proposal, see Zribi-Hertz & Mbolatianavalona 1999).

(i) a. [$_{DemP}$ *ity* [$_{NumP}$ boky mena]]

b. [$_{DemP}$ [$_{NumP}$ boky mena]$_i$ *ity* t_i]

c. [$_{DP}$ *ity*$_j$ [$_{DemP}$ [$_{NumP}$ boky mena]$_i$ <*ity*>$_j$ t_i]]

Returning to (153), if *namaky boky* "read a book" were a relative clause modifying *mpianatra* "student", we would expect the second copy of a framing demonstrative to follow *boky*. On the other hand, if *namaky boky* were the predicate of an embedded clause (with *ny mpianatra* acting as the EA of that clause), then we would expect the second copy of the demonstrative to come immediately after *mpianatra*.

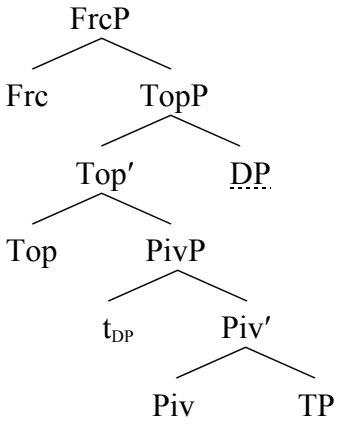
As it turns out, both possibilities are attested, with the expected difference in interpretation. In (155a), *ity mpianatra namaky boky ity* is construed as an individual-denoting DP complement of the verb, with *namaky boky* functioning as a relative clause modifying *mpianatra*. In (155b), *ity mpianatra ity namaky boky* is construed as an activity-denoting clausal complement of the verb, where *ity mpianatra ity* is the EA and *namaky boky* is the predicate phrase:

(155) a. Hitan'ny mpampianatra [*ity* mpianatra namaky boky *ity*]
seen-Det teacher this student Pst-NomP.read book this
"The teacher saw this student who was reading a book"

b. Hitan'ny mpampianatra [*ity* mpianatra *ity* namaky boky]
seen-Det teacher this student this Pst-NomP.read book
"The teacher saw this student read(ing) a book"

Having ruled out the *v*P analysis and the DP analysis, we can now conclude that αP has the structure of a clause. However, the question still remains as to whether the surface order EA + PredP reflects the base order of these elements, or whether it is derived via leftward movement of the EA from a position to the right of the predicate phrase. Let us suppose for the sake of argument that the right-specifier structure, repeated below as (156), is correct: The EA merges to the right of its target Top′ to form TopP, and thus c-commands the predicate phrase (PivP) at spell-out.

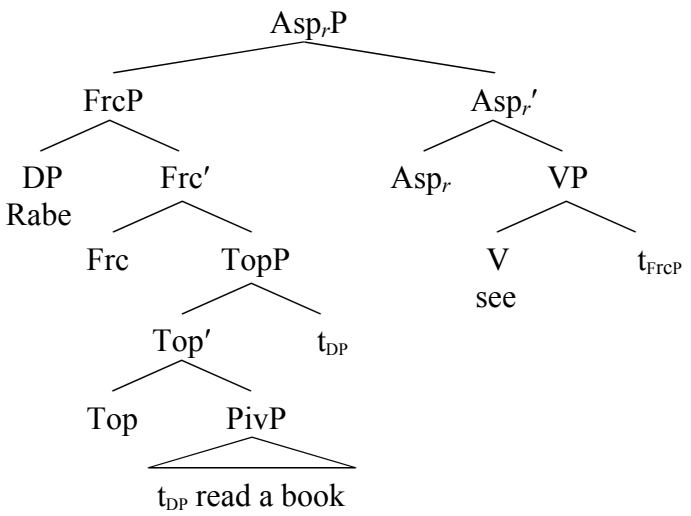
(156)



EA-initial order in perception complements may be derived if we make the following stipulations: (a) Perception verbs select clausal complements of category FrcP. (b) In order for the morphological case features of the FrcP complement to be realized overtly on its EA (cf. the discussion of the tree in (145b)), that EA must raise into the specifier of FrcP, as in (157). Assuming

that the specifier of FrcP is located to the left of Frc^0, movement from SpecTopP to SpecFrcP derives the correct surface order.[28]

(157)



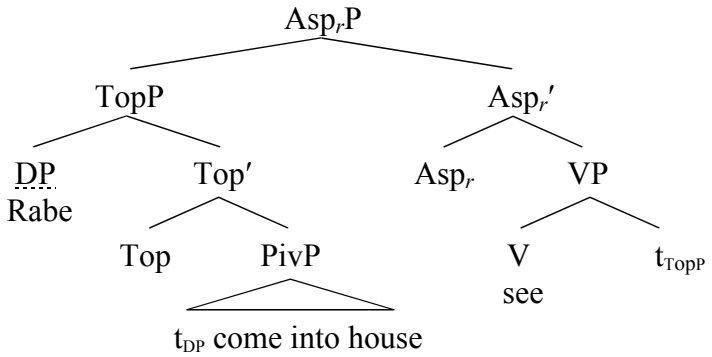
However, if DP-raising were motivated by the need to spell out the morphological case of FrcP, we would expect EA-initial order to be confined to situations in which the clause receives morphological case. And yet EA-initial order is also found in other contexts, such as when the clause is clefted (158). Here, the clause is (part of) a predicate, and thus presumably does not need case.

(158) Rabe namaky boky no hitan'ny mpampianatra
Rabe Pst-NomP.read book Foc seen-Det teacher
"What the teacher saw is Rabe reading a book"

In light of this difficulty—not to mention the various conceptual problems with the right-specifier analysis in general, mentioned earlier in this chapter—I will assume that the EA does not raise to SpecFrcP, but remains in SpecTopP (which occurs to the left of its head, as do all specifiers in the language). The EA precedes the predicate phrase because PivP fails to raise over it. Thus, in place of the structure in (157), I propose the structure in (159) for clausal complements of perception verbs: αP is a clausal constituent of category TopP, in which the PivP (containing the predicate phrase) remains in the complement of Top^0 position, rather than raising over the EA to become an outer specifier of TopP.

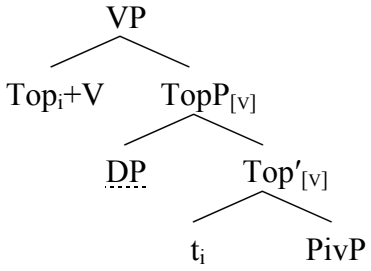
[28] This analysis recalls Massam (1985), who argues that exceptionally case-marked nominals raise to the SpecCP of the ECM complement in order to receive case from the verb under government.

(159)



It is unclear why PivP should fail to raise to SpecTopP in perception complements. Here I will make an (extremely tentative) suggestion based on my analysis of T-to-C movement in 4.3.3. In that section I argued that PivP raises in order to transmit the L-related categorial feature of TP to TopP, as dictated by the L-support requirement. Perhaps in the case of perception complements, TopP is able to inherit an L-related categorial feature in some other way, rendering movement of PivP unnecessary. One possibility is that TopP is licensed through incorporation of Top^0 into the head of the verb that selects the complement, as in (160) (cf. Koopman 1994, who argues that certain kinds of clausal complements are licensed via head-incorporation into the verb which selects them). Since the links in a movement chain share features, adjunction of Top^0 to V^0 allows the lexical categorial feature of the verb to be transmitted to the trace of Top^0 (really a lower copy), whence it percolates to the TopP projection as a whole.

(160)



Note in closing that EA-initial order is found not only in the complements of perception verbs, but in other embedded contexts as well. For example, there are certain kinds of adverbial clauses in which the external argument comes immediately after the subordinator instead of in its normal position at the end of the clause. This is shown below for clauses introduced by *(t)amin'* "when" (161b) and *satria* "because" (162b). For comparison, the corresponding matrix clauses are given in (161a) and (162a).

(161) a. Mbola nipetraka tany Antsirabe izy
still Pst-NomP.live Pst-there Antsirabe 3
"He was still living in Antsirabe"

b. Faly Rabe [tamin' [izy mbola nipetraka tany Antsirabe]]
happy Rabe Pst-when 3 still Pst-NomP.live Pst-there Antsirabe
"Rabe was happy when he was still living in Antsirabe"

(162) a. Mamaky boky ny rainareo
NomP.read book Det father-2p
"Your father is reading a book"

b. Aza mitabataba [satria [ny rainareo mamaky boky]]
Neg.Imp NomP.make.noise because Det father-2p NomP.read book
"Don't make noise because your father is reading a book"

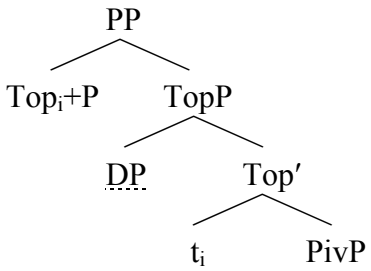
With certain subordinators this inverted order is optional: Keenan (1976) observes that the external argument may either precede or follow the predicate phrase in clauses headed by *satria*:

(163) a. Tsy miasa androany Rabe [satria [ny vadiny marary]]
Neg NomP.work today Rabe because Det spouse-3 NomP.sick
"Rabe isn't working today because his wife is sick"

b. Tsy miasa androany Rabe [satria [marary ny vadiny]]
Neg NomP.work today Rabe because NomP.sick Det spouse-3
"Rabe isn't working today because his wife is sick"

The analysis which I will offer for EA-initial order in adverbial clauses is essentially the same as for complements of perception verbs. In both cases, the head of TopP inherits an L-related categorial feature by raising and incorporating into the lexical head which selects it, rather than by attracting PivP. For adverbial clauses, the lexical head is the subordinator—e.g., the preposition *tamin'* in the case of (161b):

(164)



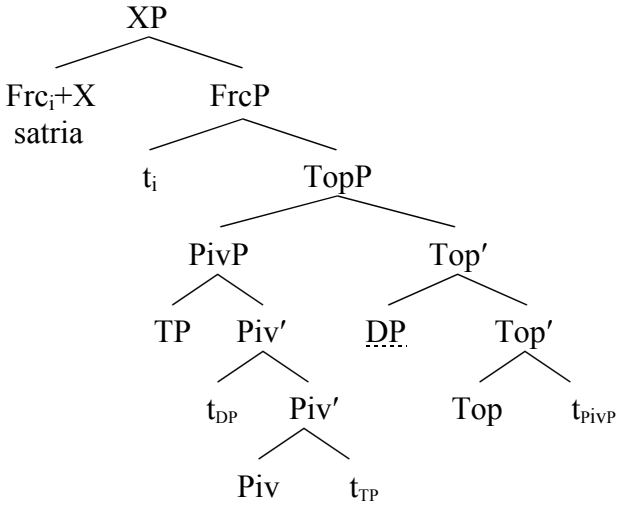
With regard to the optionality of EA-initial order with subordinators like *satria*, we might speculate that such subordinators optionally select a full FrcP complement with a phonetically null Frc^0 head. Being phonetically null, Frc0 is subject to the L-support requirement, and thus raises to incorporate into *satria*.[29] Notice, though, that this has the effect of blocking Top^0 from incor-

[29] Cf. Pesetsky (1991), who argues that phonetically null complementizers in English are affixes which need to be licensed via incorporation into a higher head. Among other facts, this explains why null complementizers are allowed with sentential complements (i) but disallowed with sentential subjects (ii). In the former case, there is a c-commanding host for the affix (namely the verb which selects the sentential complement); in the latter case, there is no accessible host for the affix to incorporate into.

(i) a. Andrea said [*that* she was responsible for the accident].
b. Andrea said [Ø she was responsible for the accident].

porating into *satria*. Thus, when FrcP is projected, PivP must raise to SpecTopP in order for TopP to be properly licensed:

(165)



Summarizing section 4.4.2: I showed that perception verbs such as "see" and "hear" may take event-denoting clausal complements in which the EA is spelled out to the left of the predicate phrase (with no evidence that it has raised to this position from some lower position to the right of the predicate phrase). A similar ordering is found optionally in certain kinds of adverbial clauses, such as those headed by *satria* "because". EA-initial order in embedded clauses is unexpected under the right-specifier analysis proposed by Guilfoyle, Hung, & Travis (1992), where EAs are always above and to the right of the predicate phrase. However, the existence of EA-initial order in certain constructions is fully consistent with the analysis argued for in this chapter, according to which the normal EA-final order results from leftward movement of the predicate phrase over the EA.

4.5. Summary of chapter 4

In this chapter I presented an LCA-compatible analysis of word order in Malagasy. In 4.1 I reviewed some previous accounts of Malagasy clause structure, focusing on the work of Pensalfini (1995). Then in 4.2 outlined my analysis, in which surface word order is derived by means of successive XP-movement to projections within the left-periphery: TP raises to become the outer specifier of PivP, which then raises to become the outer specifier of TopP. Since the EA occupies the inner specifier of TopP, the raising of PivP creates the surface word order in which the predicate phrase precedes the EA.

In 4.3 I considered the conceptual motivation for XP-movement. I reviewed evidence for equating the EA position in Malagasy with the preverbal topic position in V2 languages such as Icelandic, and argued that the left-periphery has essentially the same structure in both language types. On the basis of this parallelism, I suggested that movement of TP to SpecPivP and PivP to

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(ii) a. [*That* the earth is flat] has been proven repeatedly.
b. * [Ø the earth is flat] has been proven repeatedly.

SpecTopP are motivated by the same featural requirements that trigger successive head-adjunction (T-to-C raising) in V2 languages. I argued that non-L-related projections are subject to a visibility condition called *L-support requirement*. This requirement is satisfied if the non-L-related projection (a) has an overt (lexicalized) head, or (b) inherits a categorial feature from an L-related projection. Since PivP and TopP are both covert, they satisfy this requirement by attracting the closest projection containing an L-related feature—namely TP—into their checking domains

In Malagasy, as in the V2 languages, attraction of the categorial feature of T takes place in the overt syntax. However, in the case of V2 languages, attraction triggers successive head-adjunction, whereas in Malagasy, head-adjunction is unavailable, and so XP-movement is employed instead. I speculated that this difference is due to an independent morphological difference between the two language types: In the case of the verb-second languages, T^{0max} forms a discrete morphological unit; whereas in Malagasy it does not (tense is a proclitic). Hence movement of T^{0max} in Malagasy would cause the derivation to crash at PF, forcing TP to raise instead.

Finally in 4.4, I presented evidence for deriving EA-final order by means of leftward predicate raising. I began by discussing the distribution of the yes/no particle *ve* and other speech-act morphemes. I showed that if we adopt the analysis of Malagasy word order presented in 4.2, we can characterize *ve* as a functional head (Frc^0) which attracts the closest asymmetrically c-commanded XP into its specifier (presumably to satisfy the morphological requirement that *ve* be realized as a phrasal enclitic). I then discussed word order in embedded clauses: If the EA occupies a right-specifier position from which it c-commands the predicate phrase, as in Guilfoyle et al. (1992), then we predict that it will consistently follow the predicate phrase. However, if the predicate phrase raises leftward over the EA, we allow for cases in which this movement will fail to take place, causing the EA to surface to the left of the predicate. I showed that EA-initial order is in fact attested in certain types of embedded clauses, such as *because*-clauses and the complements of perception verbs.