

Predicate Fronting and Constituent Order in Malagasy*

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Abstract

This paper discusses how predicate-initial (VOS) order in Malagasy is derived, and the implications of this derivation for general theories of word order. Malagasy clauses are comprised of a predicate phrase followed by a constituent here called the TRIGGER, which occupies the specifier of an A'-position (provisionally labelled TopP). I argue against an analysis where TopP projects its specifier to the right, and in favor of an analysis where the predicate phrase undergoes leftward movement over the trigger to adjoin to TopP. In this respect, Malagasy is compatible with theories of phrase structure such as Kayne (1994), which reject the existence of directionality parameters. Evidence for predicate fronting comes from particle placement and word order in non-root clauses. Regarding the motivation for fronting, I suggest that this operation is the phrasal movement analogue of T-to-C raising in verb-second languages. In both cases the Top head attracts a tense feature, but in verb-second languages the tense feature pied-pipes a head, which adjoins to Top⁰, while in Malagasy the tense feature pied-pipes an entire XP, which adjoins to TopP. I show that successive phrasal adjunction (paralleling V-raising in other languages) is a general property of Malagasy derivations, which produces inverted orders within the predicate phrase as well as trigger-final order.

1. Introduction

The Austronesian language Malagasy is well known for its typologically unusual basic word order, typically characterized as VOS. Malagasy clauses have a bipartite structure, comprised of a verb-initial PREDICATE PHRASE followed by a definite DP denoting the argument of predication. Following earlier work, I refer to this DP as the TRIGGER (Pearson 2005a; cf. Schachter 1987 on Tagalog). Example sentences are given below with the trigger underlined. These show that the predicate phrase may consist of a bare nominal phrase (1a), a weak quantifier (1b), an adjectival phrase (1c), a PP (1d), or a verb together with its non-trigger dependents (1e). For convenience I will refer to the Malagasy order as PREDICATE-FIRST, abbreviated Pred1 (on analogy with V2 for VERB-SECOND).¹

- (1) a. Mpianatra ny.....rahalahiko
student Det brother=1s
'My brother is a student'
- b. Roa ny.....zana-dRasoa
two Det child=Raso
'Raso has two children' (lit. 'Raso's children are two')

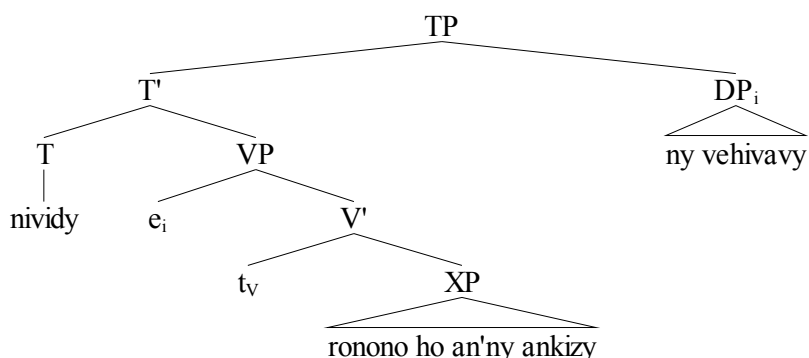
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¹ The following abbreviations are used in the examples: 1s = first person singular pronoun/clitic, 2s/p = second person singular/plural pronoun/clitic, 3 = third person (singular or plural) pronoun/clitic, Acc = accusative, AT = Actor-Topic ('active') voice, CT = Circumstantial-Topic voice, Det = determiner, Foc = focus particle, Gen = genitive, Irr = irrealis/future, Neg = negative particle, Nom = nominative, Obl = oblique case marker, Part = particle, Pl = plural marker, Pst = past tense, Qu = yes/no question particle, TT = Theme-Topic ('passive') voice.

- c. Feno rano ny...tavoahangy
 full water Det bottle
 ‘The bottle is full of water’
- d. Ary anatin’ ny ala ny...gidro
 there inside Det forest Det lemur
 ‘The lemur is in the forest’
- e. Nividy ronono ho an’ ny ankizy ny...vehivavy
 Pst.AT.buy milk for Obl Det children Det woman
 ‘The woman bought milk for the children’

Guilfoyle, Hung, and Travis (1992) assume that the trigger occupies a specifier position to the right of the head which projects it. A slightly updated version of their structure is shown in (2) for the sentence in (1e). Here the predicate phrase is identified as T’ (with V-to-T raising, yielding verb-initial order), and the trigger occupies the specifier of TP. Guilfoyle et al. attribute the position of the trigger to a Malagasy-specific parameter setting, whereby lexical categories like V project specifiers on the left while functional categories like T project specifiers on the right. I will refer to this as the RIGHT-SPECIFIER ANALYSIS.

(2)

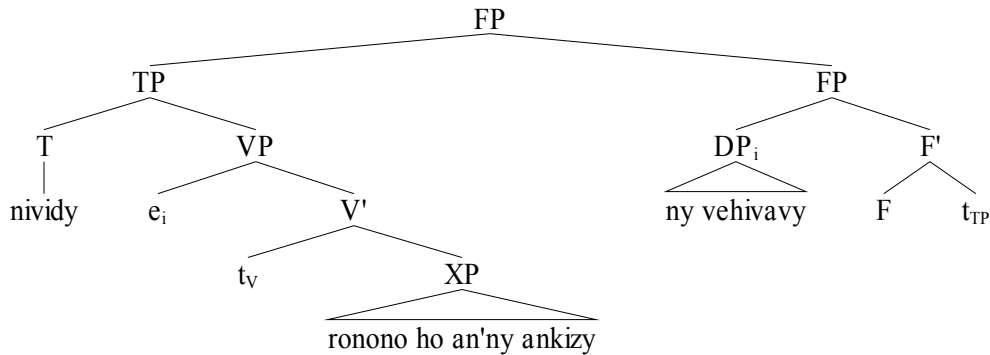


In this paper, I argue against the right-specifier analysis and in favor of an approach where Pred1 is derived through leftward movement of the predicate phrase over the trigger. Specifically, I argue that the predicate phrase raises to adjoin to some functional projection FP containing the trigger as its specifier, as in (3) (here the predicate phrase is labeled TP; this structure is revised and further articulated in sections 2 and 3 below). I will refer to this approach as the PREDICATE FRONTING ANALYSIS.²

² Kayne (1994:36) proposes deriving VOS order by fronting a constituent containing VO, but without mentioning Malagasy specifically. To the best of my knowledge, a predicate raising analysis for Malagasy was first suggested by MacLaughlin (1995), and explored in detail by Pensalfini (1995) and Pearson (1995, 1997, 1998b, 2001). This paper modifies and extends the analysis in Pearson (2001).

On deriving verb-initial order through predicate fronting in other languages, see Massam (2000) on Niuean, Lee (2000) on Zapotec, Aldridge (2004) on Seediq, and Cole and Hermon (2006) on Toba Batak. For more on VP fronting and remnant movement, see Den Besten and Webelhuth (1987) and various papers in Alexiadou, et al. (2002).

(3)



The predicate fronting analysis is more abstract than the right-specifier analysis, in that it involves additional movement which needs to be motivated. But in other respects it is arguably simpler than the right-specifier analysis, since it does not require positing directionality parameters in the syntax (see below). As I discuss below, the predicate fronting analysis is also empirically superior, since it is consistent with certain facts about particle placement and word order in embedded clauses which remain mysterious under the right-specifier analysis.

The treatment of Pred1 in Malagasy has clear relevance for theories of linearization in syntax. Within the Government-Binding framework, cross-linguistic word order variation was captured through a combination of parameters governing the order of heads and complements in the base, the direction of θ - and Case-assignment (e.g., Travis 1989, Koopman and Sportiche 1991), and the application of verb raising and other movement transformations (Pollock 1989, and many others). Recently, however, alternatives to this view have been put forward which posit a direct, universal mapping between hierarchical relations in the phrase structure and precedence relations in the morpho-syntax. These approaches, which might be termed LINEARIZATION ALGORITHM theories, seek to impose strict constraints on the phrase structure component while eliminating directionality parameters from the syntax. Word order variation, both across and within languages, is attributed exclusively to differences in movement (which may in turn reduce to differences in how morphological requirements of functional heads are satisfied, as in the feature checking theory of Chomsky 1995). Approaches in this spirit include Brody (1997, 2000), Fukui and Takano (1998), Haider (2000a,b), Frank and Kuminiak (2000), and Frank and Vijay-Shanker (2001), among others. The best known of these approaches is that of Kayne (1994), who posits the LINEAR CORRESPONDENCE AXIOM (LCA) paraphrased in (4). From the LCA, together with a minimum of additional assumptions, Kayne derives a restrictive theory of phrase structure which includes the features in (5).³

(4) *Linear Correspondence Axiom*

For all $\{X, Y, a, b\}$, where X and Y are phrase structure terms, a and b are PF elements, and a maps to a terminal dominated by X while b maps to a terminal dominated by Y, if X asymmetrically c-commands Y, then a precedes b (linearization must be total: if $a \neq b$, then either a precedes b or b precedes a).

(5) a. Complements universally follow the heads that select them. Thus head-to-head movement (where a head attracts the head of its complement) is always to the left.

³ Chomsky (1995) adopts the LCA as part of his Bare Phrase Structure proposals, though his underlying assumptions and model of grammar are rather different from Kayne's. For other extensions and modifications of Kayne's theory, see Barbiers (1995), Epstein et al. (1998), Moro (2000), Koopman and Szabolcsi (2000), and Nunes (2000). Arguments and evidence for an LCA-based approach to word order in various languages can be found in Cinque (1996), Nkemnji (1996), Zwart (1997), Haegeman (2000), Hinterhölzl (2000), and Carstens (2002), among others.

- b. Specifiers and adjuncts⁴ universally precede heads and complements. Consequently phrasal movement (which targets specifier and XP-adjunct positions) is always to the left.

Kayne's conclusion that heads uniformly precede their complements (5a) is controversial, given the prevalence of apparent counterexamples from languages with head-final orders.⁵ However, all of the linearization algorithm theories mentioned above agree on (5b)—largely without comment, given the overwhelming preference for left-specifiers and leftward phrasal movement in both head-initial and head-final languages. Of course, (5b) is not entirely unproblematic. In a small but robust minority of languages, such as Malagasy, the subject (and/or topic) of the clause appears at the right periphery rather than the left periphery, suggesting that right-specifiers are in fact allowed in certain cases. If we can demonstrate that Pred1 is instead the result of fronting, such that clause-final subjects/topics can be taken to occupy left-specifiers, this would count as significant evidence for linearization algorithm approaches in general (regardless of how the issue of head-complement order is resolved).

The remainder of the paper is organized as follows: Section 2 gives some relevant background on Malagasy clause structure, while section 3 lays out the specifics of the predicate fronting analysis and addresses some of its consequences for the treatment of word order and extraction. I suggest that predicate fronting is formally analogous to T-to-C movement in V2 languages like German and Icelandic: In both cases, a tense feature is attracted into the left periphery of the clause. The difference is that in V2 constructions, feature attraction (or AGREE, in the sense of Chomsky 2000) pied-pipes an X^0 constituent, which adjoins to the highest head in the clause; while in Pred1 constructions, an entire XP containing the tense head is pied-piped, and adjoins to the highest maximal projection in the clause. Sections 4 and 5 present empirical support for predicate fronting from two domains: question particle placement, and word order in certain kinds of embedded clauses. Section 6 touches on the treatment of extraposed clauses. Finally, I summarize the paper in section 7, and conclude by speculating on why Malagasy should resort to predicate raising in place of T-to-C movement. There I briefly discuss evidence for ROLL-UP structures within the Malagasy predicate phrase, suggesting that predicate raising reflects a general preference in this language for phrasal adjunction over head adjunction.

2. Background: More on the predicate phrase and trigger

Malagasy is an Austronesian language belonging to the Western Malayo-Polynesian subgroup and spoken in Madagascar. It shares many core structural features with Philippine languages like Tagalog, but has a rather more configurational word order, especially as concerns the position of the trigger. For general information on the structure of Malagasy, see Keenan (1976, 1995), Randriamasimanana (1986), Pearson

⁴ Kayne (1994), who defines asymmetric c-command in terms of categories rather than segments/nodes, does not distinguish specifiers from phrasal adjuncts. Here I follow Chomsky (1995) in retaining the specifier/adjunct distinction. It is possible to adopt the LCA and still allow a phrase to host a specifier and an adjunct (or multiple specifiers, or multiple adjuncts), if c-command is defined derivationally rather than representationally, as in Epstein et al. (1998). See Pearson (2001) for discussion of this point.

⁵ Some authors (Zwart 1993, Haegeman 2000, Carstens 2002) maintain that in at least some OV languages, surface order is derived by fronting the object (or a remnant containing the object) over the verb. Others (Fukui and Takano 1998, Haider 2000a,b) argue that OV order is basic, with VO derived by raising the verb over the object. Still others (Epstein, et al. 1998) propose that the choice between OV and VO is subject to a parameter, as in earlier theories.

As an aside, it is worth noting that specifier-head-complement order does not entail VO order in the base, as some critics of Kayne have inferred. VO is more 'basic' only if direct objects merge as (or within) the complement of the verb, an assumption which is neither inevitable nor universal. Ever since Larson (1988), various authors have argued that at least some direct objects originate in the specifier of VP (Bowers 1993 and others claim that direct objects are always generated in this position). What is more, within the Minimalist framework of Chomsky (1995)—where phrase structures are constructed in bottom-up fashion, and applications of Merge and Move are interspersed throughout the derivation, eliminating the distinction between D-structure and S-structure—the very notion of a BASE, and the question of how elements are ordered in the base, essentially disappears from the theory. Precedence is syntactically relevant only at the interface between phrase structure and morphology.

and Paul (1996), Keenan and Polinsky (1998), Paul (1998, 1999), Pearson (2001), and the many references cited therein.

Clauses in Malagasy typically consist of a verb-initial predicate phrase followed by the trigger (the trigger is generally clause-final, though certain types of constituents can follow it; see sections 3.4 and 6). When the clause contains a verb with two or more definite DP dependents, any of the DPs may be mapped to the trigger function. As in other Philippine-type languages, the form of the trigger is invariant, and its grammatical role within the clause is indicated by VOICE morphology on the verb. Consider the examples below: In (6a), the trigger is the participant bearing the external argument relation (here the agent), and the verb stem *an-sorat-* ‘write’ appears in the Actor-Topic (AT) form. When the trigger is an internal argument of the verb (here the patient), the verb takes Theme-Topic (TT) morphology (6b). Lastly, when an oblique participant (here an instrument) functions as the trigger, the Circumstantial-Topic (CT) form is used (6c).⁶

- (6) a. Manoratra ny taratasy amin’ ny penina ny...mpianatra
 AT.write Det letter with Det pen Det student
 ‘The student is writing the letter with the pen’
- b. Soratan’ ny mpianatra amin’ ny penina ny...taratasy.
 TT.write Det student with Det pen Det letter
 ‘The letter is being written by the student with the pen’
 or ‘The letter, the student is writing (it) with the pen’
- c. Anoratan’ ny mpianatra ny taratasy ny...penina
 CT.write Det student Det letter Det pen
 ‘The pen is being used by the student to write the letter’
 or ‘The pen, the student is writing the letter (with it)’

Broadly speaking, the trigger picks out the argument to which the speaker wishes to assign greatest referential prominence, the participant about which the rest of the clause provides information. In Prague School terms, the trigger presents the THEME of the clause while the predicate phrase presents the RHEME. Hence, the sentences in (6) are truth-conditionally equivalent but differ in their information structure: (6a) makes an assertion about the student, namely that s/he is writing the letter with the pen; likewise (6b) makes an assertion about the letter, and (6c) makes an assertion about the pen.

The boundary between the predicate phrase and the trigger may be marked by the placement of certain speech act particles, such as the yes/no question marker *ve*. This is illustrated by the examples in (7), which give the interrogative counterparts of the sentences in (6). Altering the position of *ve* renders the sentence ungrammatical, as demonstrated in (8) (I return to the placement of *ve* in section 4):

- (7) a. Manoratra ny taratasy amin’ ny penina ve ny...mpianatra?
 AT.write Det letter with Det pen Qu Det student
 ‘Is the student writing the letter with the pen?’
- b. Soratan’ ny mpianatra amin’ ny penina ve ny...taratasy?
 TT.write Det student with Det pen Qu Det letter
 ‘Is the student writing the letter with the pen?’

⁶ The AT and TT forms are commonly referred to as the ACTIVE and PASSIVE, respectively (on my reasons for avoiding these terms, see Pearson 2001). Note that certain transitive verbs have more than one TT form, while others lack a TT form and instead use an uninflected root when the internal argument is the trigger. For detailed discussions of verbal morphology and voice in Malagasy, see Keenan and Polinsky (1998), Rabenilaina (1998), Paul (1999), and Pearson (2005a,b).

- c. Anoratan' ny mpianatra ny taratasy **ve** ny...penina?
 CT.write Det student Det letter Qu Det pen
 'Is the student writing the letter with the pen?'

- (8) a. * Manoratra **ve** ny taratasy amin' ny penina ny mpianatra? (cf. (7a))
 b. * Manoratra ny taratasy **ve** amin' ny penina ny mpianatra?
 c. * Manoratra ny taratasy amin' ny penina ny mpianatra **ve**?

Evidence that the predicate phrase forms a single syntactic constituent to the exclusion of the trigger is given in (9), which shows that two predicate phrases sharing the same trigger may be conjoined using the connective *sy* 'and'. Note that *sy* is used exclusively for conjoining non-clausal constituents (nominals, PPs, etc.), while a separate connective *ary* is used for sentential coordination. This is illustrated in (10). The fact that the sentences in (9) take *sy* shows that we are dealing with conjoined predicate phrases—rather than, say, conjoined clauses where the trigger of the first clause has been elided under coreference with the trigger of the second clause.

- (9) a. Misotro toaka **sy** mihinam-bary Rakoto (Keenan 1976)
 AT.drink liquor and AT.eat-rice Rakoto
 'Rajaona drinks liquor and eats rice'
- b. Henon' ny vehivavy **sy** nojeren' ny lehilahy ny...mpihira gasy
 TT.hear Det woman and Pst.TT.watch Det man Det folk singer
 'The folk singer was heard by the woman and watched by the man'
 or 'The folk singer, the woman heard (him) and the man watched (him)'
- (10) a. Misotro toaka Rajaona { **ary** / ***sy** } mihinam-bary Rakoto
 AT.drink liquor Rajaona AT.eat-rice Rakoto
 'Rajaona drinks liquor and Rakoto eats rice'
- b. Misotro toaka Rajaona { **sy** / ?? **ary** } Rakoto
 AT.drink liquor Rajaona Rakoto
 'Rajaona and Rakoto drink liquor'

Within the predicate phrase itself, the order of constituents is fairly fixed. When not functioning as the trigger, the external argument (or ACTOR PHRASE) is right-adjacent to the verb, and is in turn followed by any internal arguments and obliques. Indefinite objects immediately follow the verb (in AT clauses), or the actor phrase, if any (in non-AT clauses). Nominal arguments generally precede PPs and other oblique elements, although rightward object shift over adverbs is attested (see section 7), and limited scrambling also seems to be allowed.

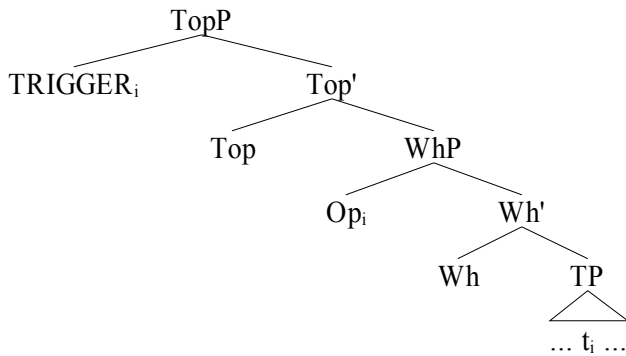
Turning to properties of the trigger position: Generally the trigger has been identified as the structural subject of the clause (Keenan 1976, 1995, Dahl 1996, and many others). A variant of this analysis is found in Guilfoyle et al. (1992), who argue that the trigger and the actor phrase are both subjects, the former occupying the nominative Case position (SpecIP), and the latter the VP-internal subject position (SpecVP). However, the trigger also shares properties with topics in other languages. For example, the referent of the trigger is existentially presupposed, and hence non-specific indefinites may not function as triggers. This is illustrated in (11) (definite noun phrases in Malagasy are introduced by an overt determiner such as *ny*, while indefinite noun phrases lack a determiner):

- (11) a. Manoratra ny taratasy ny...mpianatra
 AT.write Det letter Det student
 'The student is writing the letter(s)'

- b. Manoratra taratasy ny...mpianatra
 AT.write letter Det student
 ‘The student is writing { letters / a letter }’
- c. Soratan’ ny mpianatra ny...taratasy
 TT.write Det student Det letter
 ‘The student is writing the letter(s)’
- d. * Soratan’ ny mpianatra taratasy
 TT.write Det student letter
 ‘The student is writing { letters / a letter }’

In Pearson (2005a) I argue that the trigger occupies an A’-position rather than a subject Case position (cf. Richards 2000 on triggers in Tagalog). I propose that the trigger originates in the left periphery of the clause, in the specifier of a projection provisionally labelled TOPIC PHRASE (TopP). It is licensed in this position through coindexation with a null operator which raises out of TP to the specifier of a WH-OPERATOR PHRASE (WhP), selected by TopP. This is schematized in (12) (abstracting away from movement):

(12)



As evidence for this structure, note that triggers exhibit the binding properties commonly associated with dislocated topics, including reconstruction/connectivity effects combined with weakest crossover (Lasnik and Stowell 1991). Reconstruction/connectivity is illustrated below: In (13a) the external argument acts as the trigger, as shown by the AT morphology on the verb, and binds a pronominal within the internal argument (the third person possessive clitic *-ny* in *ny rainy* ‘his father’). In the corresponding TT clause in (13b), the internal argument has been promoted over the external argument to become the trigger, yet binding of the pronominal is still possible.⁷

⁷ As evidence that the internal argument originates within the A-binding domain of the external argument, consider the sentences in (i), where the verb is in the CT form and the trigger denotes a goal. These show that when both arguments are inside the predicate phrase, the external argument can bind a pronominal within the internal argument, but not vice versa:

- (i) a. Nampisehoan’ ny lehilahy tsirairay_i ny rahalahiny_i ny...ankizy
 Pst.CT.show Det man each Det brother=3 Det children
 ‘Each man_i showed his_i brother to the children’
- b. ?? Nampisehoan’ ny rahalahiny_i ny lehilahy tsirairay_i ny...ankizy
 Pst.CT.show Det brother=3 Det man each Det children
 ‘His_i brother showed each man_i to the children’

- (13) a. Namangy ny rainy_i ny...mpianatra tsirairay_i
 Pst.AT.visit Det father=3 Det student each
 ‘Each student_i visited his_i father’
- b. Novangian’ ny mpianatra tsirairay_i ny...rainy_i
 Pst.TT.visit Det student each Det father=3
 ‘His_i father, each student_i visited’

That triggers exhibit weakest crossover effects is shown in (14), where the internal argument is a quantifier phrase and the external argument contains a pronominal. In (14a), where the external argument is the trigger, a bound variable reading of the pronoun is disallowed for all speakers. However, when the internal argument is promoted to the trigger function over the external argument, as in (14b), most speakers report that a bound variable reading becomes available.

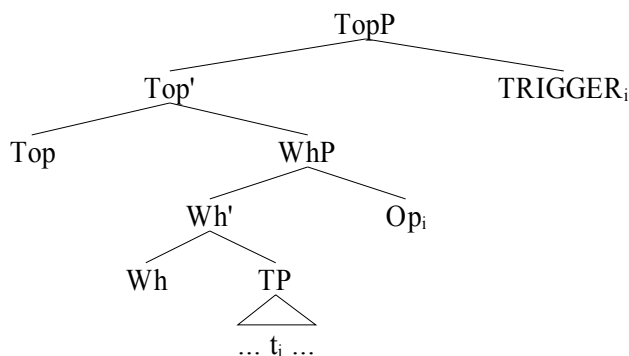
- (14) a. * Namangy ny mpianatra tsirairay_i ny...rainy_i
 Pst.AT.visit Det student each Det father=3
 ‘His_i father visited each student_i’
- b. % Novangian’ ny rainy_i ny...mpianatra tsirairay_i
 Pst.TT.visit Det father=3 Det student each
 ‘Each student_i, his_i father visited’

Lasnik and Stowell (1991) observe that an A'-chain fails to show robust weak crossover effects when it is headed by an operator that is in turn bound by a higher antecedent. Hence, we can explain the combination of reconstruction/connectivity in (13) and weakest crossover in (14) if we assume that Malagasy triggers are base-generated in an A'-position and bind an empty operator, as in (12). For additional evidence that Malagasy triggers occupy an A'-position, see Pearson (2005a).

3. Predicate fronting in Malagasy

How do we account for the fact that the trigger is spelled out to the right of the predicate phrase in Malagasy? Suppose we assumed, following Guilfoyle et al. (1992), that functional categories in Malagasy have their specifiers on the right. Modifying the structure in (12) accordingly would yield the tree in (15) where Wh and Top (which are presumably functional categories) project right-specifiers:

(15)



As mentioned above, such structures are incompatible with theories of linearization like Kayne (1994), which require that heads uniformly project their specifiers/adjuncts on the left. Rather than relying on directionality parameters in the base, I will instead argue that Pred1 order is derived via movement—specifically, successive XP-adjunction, culminating in the raising of the predicate phrase over the (left-)spe-

cifier containing the trigger. Empirical evidence for this claim is presented in sections 4 and 5. Before turning to this evidence, I briefly lay out the specifics of my analysis, and consider some of its consequences for the treatment of word order and extraction.

3.1. Predicate fronting as phrasal adjunction: Pred1 meets V2

What would motivate the predicate phrase to raise over the trigger? Although I cannot provide a complete answer to this question here, I will present a tentative proposal in the interests of making the predicate raising analysis more concrete. In particular, I suggest that predicate raising in Malagasy is derivationally analogous to T-to-C movement in verb-second languages. Predicate raising and T-to-C movement are triggered by the same Agree operation, differing only in the amount of phonological material which is pied-piped by that operation: predicate raising involves XP-adjunction while T-to-C involves X⁰-adjunction. In effect, Pred1 order in Malagasy is the phrasal movement analogue of V2.

In Pearson (2005a) I argued that the Malagasy trigger occupies an A'-position high in the clause. This position is comparable in many respects to the initial position (*Vorfeld*) in V2 languages. Compare the Malagasy sentences in (16) with their German and Icelandic counterparts in (17) and (18), respectively: I assume that the underlined constituents in these sentences all occupy essentially the same phrase structure position.⁸

- (16) a. Tsy namaky ny boky ny.....lehilahy
 Neg Pst.AT.read Det book Det man
 'The man did not read the book'
- b. Tsy novakin' ny lehilahy ny.....boky
 Neg Pst.TT.read Det man Det book
 'The book, the man did not read (it)'
- (17) a. Der.....Mann hat das Buch nicht gelesen
 the.Nom man has the.Acc book not read
 'The man did not read the book'
- b. Das.....Buch hat der Mann nicht gelesen
 the.Acc book has the.Nom man not read
 'The book, the man didn't read (it)'
- (18) a. Maðurinn hafði ekki lesið bókina
 man.the.Nom had not read book.the.Acc
 'The man had not read the book'
- b. Bókina hafði maðurinn ekki lesið
 book.the.Acc had man.the.Nom not read
 'The book, the man had not read (it)'

⁸ Clearly there are differences between Malagasy and Germanic: In German and Icelandic the grammatical function of the trigger/topic is indicated by nominal case inflection, whereas in Malagasy the form of the trigger/topic is invariant and its grammatical function is instead identified by the voice morphology on the verb. However, if the theory of voice developed in Pearson (2001, 2005a,b) is correct, these differences are essentially morphological: Voice inflection, like wh-agreement in Chamorro (Chung 1998), indirectly indicates the abstract Case features of the trigger/topic. Voice can thus be thought of as the 'head-marking' counterpart of morphological case (cf. Rackowski 2002 for a very different implementation of this idea in Tagalog).

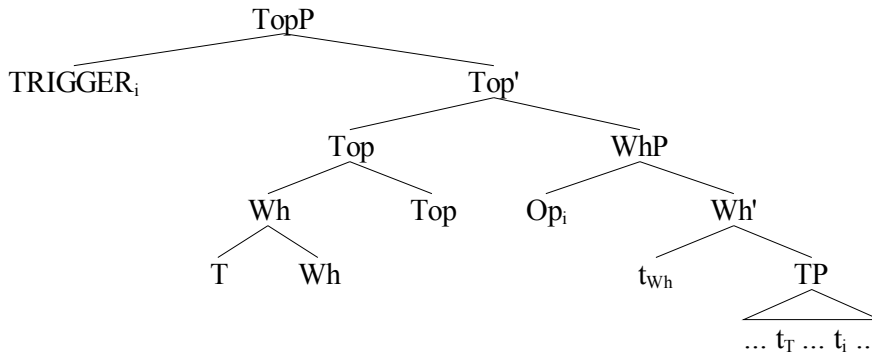
Recall from section 2 (examples (13) and (14)) that promotion to trigger exhibits a combination of reconstruction/connectivity and weakest crossover effects, which I take as evidence that the trigger is generated in a non-Case position from which it binds an empty operator. As I discuss in Pearson (2005a), topic fronting in German shows comparable binding effects. In (19a), a quantified subject binds a possessive pronoun inside the object. Binding is preserved when the object is topicalized (19b), showing that topics in German reconstruct (exhibit connectivity). However, German topicalization also shows weakest crossover effects: a quantified topic can bind a pronoun from its surface position, even when the trace of the topic does not c-command the pronoun. This is shown in (20). In (20a) a non-topic object fails to bind a pronoun within the subject; however, the bound reading becomes available when the object is topicalized over the subject (20b). It is therefore plausible that clause-initial topics in V2 languages, like Malagasy triggers, are generated in the specifier of TopP, which forms a chain with an operator in the specifier of WhP (see the tree in (12) above).

- (19) a. Jeder.....Student_i hat seinen_i Vater besucht
 every.Nom student has his.Acc father visited
 ‘Every student_i visited his_i father’
- b. Seinen_i.....Vater hat jeder Student_i besucht
 his.Acc father has every.Nom student visited
 ‘His_i father, every student_i visited’
- (20) a. * Sein_i.....Vater hat jeden Student_i besucht
 his.Nom father has every.Acc student.Acc visited
 ‘His_i father visited every student_i’
- b. Jeden.....Studenten_i hat sein_i Vater besucht
 every.Acc student.Acc has his.Nom father visited
 ‘Every student_i, his_i father visited’

It is widely assumed that verb-second order results from head raising of T⁰, containing the finite verb or auxiliary, into the left periphery of the clause. Various theories have been proposed to explain why this movement takes place.⁹ I will not take a stand on this issue here, but merely stipulate the formal mechanisms triggering T-raising (cf. Pesetsky and Torrego 2001): (a) the Wh and Top heads include an uninterpretable tense feature, which attracts (Agrees with) the interpretable tense feature of the T head; (b) in verb-second clauses, this Agree relation triggers pied-piping (displacement) of PF material. This results in successive head adjunction: After the Wh head in (12) merges with its TP complement, the tense head raises to adjoin to Wh. The null operator then raises to become the specifier of WhP, and WhP merges as the complement of the Top head. Finally, T+Wh raises and adjoins to Top, which takes the trigger/topic as its specifier. This yields the structure in (21). In accordance with the LCA, the tense head (containing the finite verb or auxiliary) will be spelled out in second position, immediately following the trigger/topic.

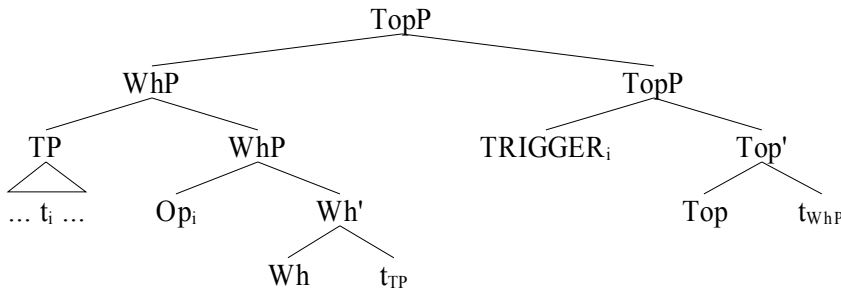
⁹ The literature on V2 is too vast to be adequately surveyed here. See Vikner (1995) for an overview, as well as Zwart (1997, 2001, 2005) and Branigan (2005) for some recent analyses.

(21)



Predicate fronting in Malagasy, I suggest, involves essentially the same derivation from the perspective of feature checking: as in V2 clauses, the establishment of an Agree relation between the uninterpretable tense features of Top and Wh and the interpretable tense feature of T is accompanied by PF pied-piping. However, in Malagasy head movement is blocked, and so pied-piping takes the form of successive XP-adjunction instead: After Wh merges with TP and attracts the null operator into its specifier, the TP remnant raises over the operator to adjoin to WhP. WhP then merges with the Top head, which takes the trigger as its specifier. Finally, WhP raises over the trigger to adjoin to TopP, yielding the structure in (22). It is this final step which, in accordance with the LCA, results in predicate-initial surface order.¹⁰

(22)



¹⁰ Pensalfini (1995) considers an alternative to the predicate fronting analysis which is also compatible with Kayne (1994), namely the cascade structure in (i) below: Here, arguments and adjuncts are generated in VP. Whichever constituent is selected as the trigger raises to the specifier of TopP, located immediately above VP, while other elements raise higher up into Case-checking positions (SpecTP for external arguments, SpecAgr_oP for internal arguments, etc.). Meanwhile the verb undergoes head-to-head raising and is spelled out in the head of Agr_sP. The question particle *ve* is located in the specifier of a MOOD PHRASE (MoodP) projection dominating TopP.

- (i) [Agr_{SP} V [TP (Actor) t_V [Agr_{OP} (Theme) t_V [MoodP *ve* t_V [TopP Trigger t_V [VP ... t_V ...]]]]]]]

The primary motivation for (i) is that it handles extraposition of clauses and adverbials (cf. sections 3.4 and 6) in a straightforward way: lacking features to check, these elements would remain in situ and be spelled out inside VP, following the trigger. However, this result is outweighed by some serious empirical and conceptual problems. For example, (i) runs counter to the cross-linguistic generalization that topics and question particles are located high in the clause, above the A-positions in which Case features are checked. More critically, in a cascade structure like (i) the verb and its non-trigger dependents fail to form a constituent to the exclusion of the trigger. This is contradicted by the coordination evidence in (10) above. Finally, (i) is hard to reconcile with the evidence for predicate fronting in sections 4 and 5.

Why Malagasy should exhibit XP-adjunction where other languages show X⁰-adjunction is unclear. For reasons of space I will set this conceptual issue aside and concentrate instead on empirical arguments for predicate fronting. However, I return to XP- versus X⁰-adjunction briefly in the final section of the paper, where I note that predicate fronting appears to reflect a general preference for phrasal movement over head movement in Malagasy derivations.

Before turning to the evidence for predicate fronting, let us briefly consider some consequences of—and extensions to—this particular approach to PredI order, with respect to word order and extraction.

3.2. Predicate fronting and constituent focus

The predicate fronting analysis accounts straightforwardly for the position of contrastively focused constituents in Malagasy. Contrastive focus involves the construction in (23b), where the focused phrase appears at the beginning of the clause, followed by the particle *no*:

- (23) a. *Mihinana ny voasary ny gidro.*
 AT.eat Det orange Det lemur
 ‘The lemur is eating the orange’
- b. *Ny gidro no mihinana ny voasary.*
 Det lemur Foc AT.eat Det orange
 ‘It’s the lemur who is eating the orange’

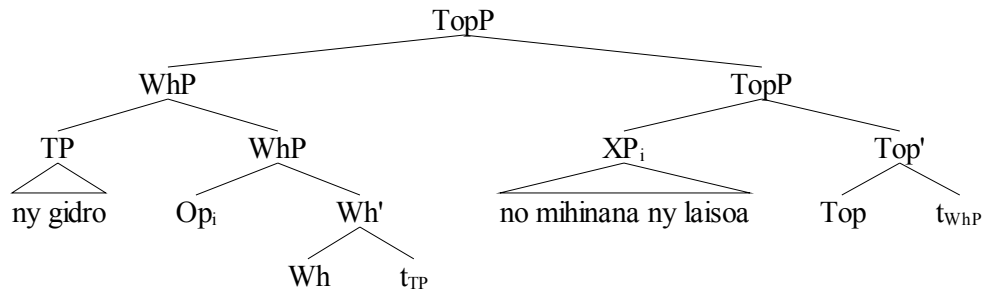
Paul (1999, 2001b) argues convincingly that (23b) has a structure reminiscent of clefts and pseudo-clefts in other languages: the focused constituent (perhaps selected by a null copula) functions as the matrix predicate of the clause, while the constituent introduced by *no* is a free relative construction occupying the trigger position. For example, she shows that focused noun phrases behave like predicate nominals in that they can be negated with *tsy* ‘not’ (24). As (25) shows, verbal predicates in non-focus clauses may also be negated, but argument noun phrases may not. (See Paul 2001b for additional discussion.)

- (24) a. *Tsy mpianatra ny rahalahiko.*
 Neg student Det brother=1s
 ‘My brother is not a student’
- b. *Tsy mpianatra no nanoratra ny taratasy.*
 Neg student Foc Pst.AT.write Det letter
 ‘It wasn’t a student who wrote the letter’
- (25) a. *Tsy nanoratra ny taratasy ny mpianatra.*
 Neg Pst.AT.write Det letter Det student
 ‘The student didn’t write the letter’
- b. * *Nanoratra ny taratasy tsy ny mpianatra.*
 Pst.AT.write Det letter Neg Det student
 ‘Not the student wrote the letter’
- c. * *Nanoratra tsy taratasy ny mpianatra.*
 Pst.AT.write Neg letter Det student
 ‘The student wrote not a letter’ or ‘The student wrote no letter(s)’

Adopting the predicate fronting analysis, a sentence like (23b) would have the structure in (26): The focused phrase is contained within TP, while the free relative is generated in the specifier of TopP (it is

unclear what the syntactic category of the free relative is, so I label it simply XP). TP raises and adjoins to WhP, which adjoins to TopP, yielding a sentence where the focused constituent is clause-initial.

(26)



3.3. The position of the operator

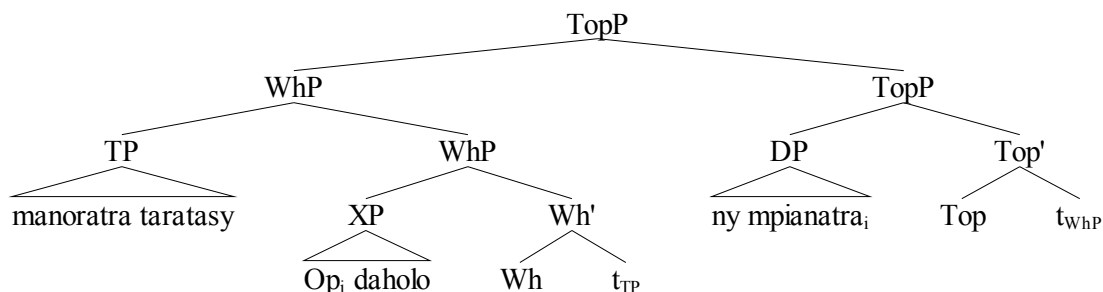
According to the analysis in (22), predicate fronting involves a two-step derivation: TP adjoins to WhP, which adjoins to TopP. As a result, the operator with which the trigger is coindexed ends up between the TP and the trigger. Although the operator itself is phonologically null, there are arguably cases in which it pied-pipes overt material when it raises to the specifier of WhP. As predicted, this pied-piped material is spelled out at the right edge of the predicate phrase, immediately preceding the trigger.

For example, the quantificational adverbial *daholo* ‘all’ occurs at the right edge of the predicate phrase (27). Note that *daholo* always quantifies over the set denoted by the trigger; hence it is at least plausible that *daholo* is contained in SpecWhP, in a local configuration with the operator bound by the trigger, as in (29):¹¹

- (27) a. Manoratra taratasy amin’ ny penina **daholo** ny...mpianatra
 AT.write letter with Det pen all Det student
 ‘The students are all writing letters with pens’
- b. Soratan’ ny mpianatra amin’ ny penina **daholo** ny...taratasy
 TT.write Det student with Det pen all Det letter
 ‘All the letters are being written by students with pens’
- c. Anoratan’ ny mpianatra taratasy **daholo** ny...penina
 CT.write Det student letter all Det pen
 ‘All the pens are being used by students to write letters’

¹¹ Note that the yes/no question particle *ve*, discussed in section 4, occurs in between *daholo* and the trigger, showing that *daholo* does not form a constituent with the trigger (e.g., *Manoratra taratasy amin’ ny penina daholo ve ny mpianatra?* ‘Are the students all writing letters with pens?’).

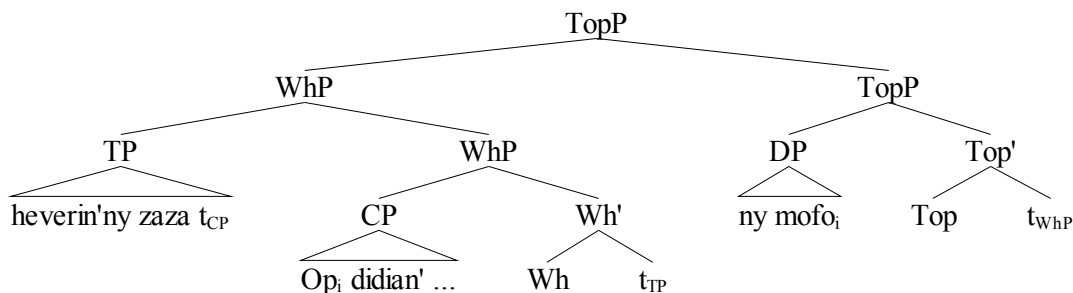
(28)



In addition, I argue in Pearson (2005a) that when the operator bound by the matrix trigger originates inside an embedded clause, that operator pied-pipes the embedded clause into the matrix SpecWhP (due to a requirement that operators be clause-bound). An example of such a sentence is given in (29), where the position of the particle *ve* shows that *ny mofo* ‘the bread’ is the matrix trigger (*ve* being confined to matrix clauses). Notice that the embedded clause containing the operator appears between the matrix verb and the trigger. My tree for this sentence is given, in abbreviated form, in (30) (see Pearson 2005a for arguments that the embedded clause has been pied-piped here):

- (29) Heverin' ny zaza [didian' ny vehivavy amin' ny antsy] (ve) ny...mofo
 TT.think Det child TT.cut Det woman with Det knife Det bread
 ‘The bread, the child thinks [that the woman is cutting (it) with the knife]’

(30)



3.4. Post-trigger constituents

Although the trigger constituent is generally clause-final, there are certain classes of elements which can appear after it. For example, embedded clauses are frequently extraposed to the end of the sentence, a fact to which I return in section 6. In addition, various types of adverbials, including temporal adverbs like *omaly* ‘yesterday’ and modal/temporal adverbs like *matetika* ‘generally’, routinely appear after the trigger, as in (31) (the position of the question particle *ve*, demarcating the right edge of the predicate phrase, is shown in parentheses). It is generally assumed that adverbs like ‘yesterday’ and ‘generally’ are introduced rather high in the structure (Cinque 1999, et al.).

- (31) a. Nanoratra taratasy (ve) ny...mpianatra **omaly**
 Pst.AT.write letter Det student yesterday
 ‘Yesterday the student wrote a letter’
- b. Mandamina ny trano (ve) Rakoto **matetika** (cf. Rackowski 1998)
 AT.arrange Det house Rakoto generally
 ‘Generally Rakoto puts the house in order’

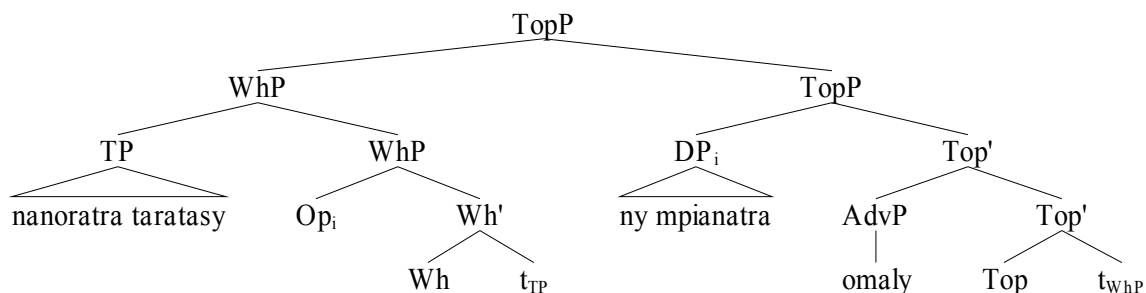
In addition, some speakers allow locative PPs, which generally occur within the predicate phrase (32a), to come after the trigger (32b). For speakers which allow PP extraposition, the position of the PP is determined by its information status: In (32a) the location of the writing event is new information, part of what the speaker is asserting, while in (32b) the location is presupposed, part of the background to the main assertion ((32a) might be paraphrased ‘What the student is doing is writing a letter in the garden’, while (32b) would be paraphrased ‘What the student is doing in the garden is writing a letter’).

(32) a. Manoratra taratasy **any an-tokotany** (ve) ny.....mpianatra
 AT.write letter there Obl=garden Det student
 ‘The student is writing a letter in the garden’

b. % Manoratra taratasy (ve) ny.....mpianatra **any an-tokotany**
 AT.write letter Det student there Obl=garden
 ‘The student is writing a letter in the garden’

Presuppositional PPs like *any an-tokotany* in (32b) are similar to temporal adverbs like *omaly* in (31a), in that they provide information about the spatio-temporal context of the event denoted by the predicate. Languages routinely place such elements at the periphery of the clause, in the same kinds of positions where topics go. Here I tentatively assume that post-trigger adverbials and PPs are licensed by the Top head—specifically, as a second specifier of TopP (I remain agnostic on whether they are generated in this position, or scramble into it prior to predicate fronting). Thus (31a) would have the structure in (33):

(33)



In support of treating *ny mpianatra* and *omaly* in (33) as stacked specifiers, note that these elements can appear in either order (at least for some speakers). This is illustrated in (34a,b), where the placement of *ve* shows that *omaly* is outside the predicate phrase in both sentences:¹²

(34) a. Nanoratra taratasy (ve) ny.....mpianatra **omaly**
 Pst.AT.write letter Det student yesterday
 ‘Yesterday the student wrote a letter’

b. Nanoratra taratasy (ve) **omaly** ny.....mpianatra
 Pst.AT.write letter yesterday Det student
 ‘Yesterday the student wrote a letter’

¹² An alternative to the multiple-specifier approach would be to assume that TopP is recursive in Malagasy (cf. Rizzi 1997), in which case *omaly* and *ny mpianatra* are separated by a second, higher Top head. However, this alternative presents problems for the roll-up analysis of predicate fronting argued for here. See Pearson (2001) for discussion.

3.5. Predicate raising and extraction

As Pensalfini (1995) and Potsdam (to appear) mention, the predicate fronting analysis has potential consequences for extraction. Under the right-specifier analysis, the predicate phrase is a complement (cf. the trees in (2) and (15)), whereas according to the analysis argued for here, the predicate phrase surfaces as an adjunct. Hence, given the usual assumption that adjuncts are islands for extraction, the predicate fronting analysis predicts that movement out of the predicate phrase into a higher position should be prohibited in Malagasy, whereas the right-specifier analysis makes no such prediction.

Testing this prediction is not a straightforward matter, however. Consider wh-extraction: As Paul (2003), Potsdam (to appear) and others show, wh-phrases in Malagasy always remain in situ, either properly contained within a larger predicate phrase (35b), or acting as the predicate in a cleft construction (35c) (cf. (23b) above). Moreover, wh-phrases are banned from occurring in the trigger position (36). It seems, then, that wh-phrases are confined to TP. But whether this is because predicate phrases are islands for extraction, or for some other reason, is difficult to determine (wh-in-situ is certainly not confined to languages with predicate-initial order).

(35) a. Mihinana ny voasary ny...gidro
AT.eat Det orange Det lemur
'The lemur is eating the orange'

b. Mihinana **inona** ny...gidro?
AT.eat what Det lemur
'What is the lemur eating?'

c. **Inona** no...hanin'...ny...gidro?
what Foc TT.eat Det lemur
'What is the lemur eating?'

(36) a. *Mihinana ny voasary **iza**?
AT.eat Det orange who
'Who is eating the orange?'

b. **Iza** no...mihinana...ny...voasary?
who Foc AT.eat Det orange
'Who is eating the orange?'

In the absence of wh-extraction, perhaps the best candidate for an A'-extraction operation in Malagasy is discourse topicalization. Discourse topics occur at the left edge of the clause, separated from the predicate by the particle *dia*. Example (37b) shows fronting of an adverbial, while (37c) shows fronting of the trigger; limited multiple fronting is allowed, as in (37d) (examples adapted from Paul 1999; see also Keenan 1976 for discussion of this construction).

(37) a. Nanapaka bozaka omaly i...Bakoly
Pst.AT.cut grass yesterday Det Bakoly
'Bakoly cut the grass yesterday'

b. Omaly dia nanapaka bozaka i...Bakoly
yesterday Dia Pst.AT.cut grass Det Bakoly
'Yesterday, Bakoly cut the grass'

- c. $I_i \dots \underline{\text{Bakoly}}_i$ dia nanapaka bozaka omaly e_i
 Det Bakoly Dia Pst.AT.cut grass yesterday
 ‘As for Bakoly, (she) cut the grass yesterday’
- d. Omaly $i_i \dots \underline{\text{Bakoly}}_i$ dia nanapaka bozaka e_i
 yesterday Det Bakoly Dia Pst.AT.cut grass
 ‘Yesterday, as for Bakoly, (she) cut the grass’

Despite some superficial similarity, the *dia*-fronting construction has very different properties from the cleft construction, as Paul (1999, 2001b) discusses. In (24) I showed that clefted constituents pattern as predicates in that they can be negated. By contrast, *dia*-fronted constituents cannot be negated; instead, negation must follow *dia*:

- (38) a. * **Tsy** $i_i \dots \underline{\text{Bakoly}}_i$ dia nanapaka bozaka omaly e_i
 Neg Det Bakoly Dia Pst.AT.cut grass yesterday
 ‘Not Bakoly, (she) cut the grass yesterday’
- b. $I_i \dots \underline{\text{Bakoly}}_i$ dia **tsy** nanapaka bozaka omaly e_i
 Det Bakoly Dia Neg Pst.AT.cut grass yesterday
 ‘Bakoly, (she) didn’t cut the grass yesterday’

Consider also the distribution of the emphatic particle *tena* ‘really, indeed’. Potsdam (to appear) shows that this element can precede a verbal predicate phrase (39a) or a clefted constituent (39b), but cannot precede a fronted element (39c). Instead, it must occur between *dia* and the verb (39d). Here again, clefted constituents pattern as predicates, but *dia*-fronted constituents do not.

- (39) a. **Tena** hovidin’ ny zaza $ny_i \dots \underline{\text{fiaramanidina}}_i$
 indeed Irr.TT.buy Det child Det airplane
 ‘The child will indeed buy the airplane’
- b. **Tena** Rabe $no_i \dots \underline{\text{mahandro vary}}_i$
 indeed Rabe Foc AT.cook rice
 ‘It is indeed Rabe who cooks rice’
- c. * **Tena** $ny_i \dots \underline{\text{fiaramanidina}}_i$ dia hovidin’ ny zaza e_i
 indeed Det airplane Dia Irr.TT.buy Det child
 ‘Indeed the airplane, the child will buy (it)’
- d. $Ny_i \dots \underline{\text{fiaramanidina}}_i$ dia **tena** hovidin’ ny zaza e_i
 Det airplane Dia indeed Irr.TT.buy Det child
 ‘The airplane, the child will indeed buy (it)’

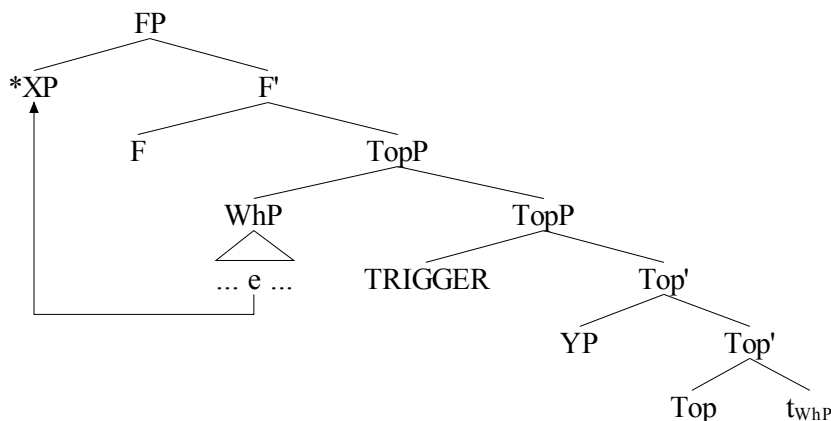
Suppose, then, that fronted constituents occupy the specifier of some functional projection FP headed by *dia*, as in (40) (in multiple fronting sentences such as (37d), the leftmost constituent would merge as an outer specifier of FP, or perhaps adjoin to FP):

- (40) [_{FP} i Bakoly [_{F’} dia [_{XP} nanapaka bozaka]]]

Since fronted constituents occur leftmost in the clause, the specifier of FP must be higher than the surface position of the predicate phrase, which is clause-initial in sentences without fronting. Supposing that the predicate phrase has raised to adjoin to TopP (and assuming further that phrasal movement obeys strict

cyclicality), we predict that a predicate-internal constituent XP will be blocked from extracting and raising on to SpecFP, as schematized in (41). On the other hand, nothing would prevent a constituent in Spec-TopP from raising to SpecFP. Such constituents include the trigger itself, along with other predicate-external constituents such as the temporal adverb *omaly* ‘yesterday’ (= YP in (41); see 3.4 above).

(41)



Initial evidence suggests that this prediction is borne out. Triggers may undergo *dia*-fronting, while non-trigger arguments may not:¹³

- (42) a. Ny...mpianatra_i dia [_{WhP} nanoratra ny taratasy] e_i
 Det student Dia Pst.AT.write Det letter
 ‘As for the student, he wrote the letter’
- b. * Ny taratasy_i dia [_{WhP} nanoratra e_i] ny...mpianatra
 Det letter Dia Pst.AT.write Det student
 ‘As for the letter, the student wrote it’
- c. * Ny mpianatra_i dia [_{WhP} nosoratana e_i] ny...taratasy
 Det student Dia Pst.TT.write Det letter
 ‘As for the student, he wrote the letter’
- d. Ny...taratasy_i dia [_{WhP} nosoratan’ ny mpianatra] e_i
 Det letter Dia Pst.TT.write Det student
 ‘As for the letter, the student wrote it’

Likewise, it appears that adverbs can undergo *dia*-fronting if and only if they are capable of appearing outside the predicate phrase: Whereas *omaly* ‘yesterday’ may be fronted, as shown in (43), manner adverbs such as *haingana* ‘quickly’, which never follow the trigger and are presumably licensed low in the predicate phrase, cannot undergo fronting, as shown in (44):

- (43) a. Nanapaka bozaka **omaly** i.....Bakoly.
 Pst.AT.cut grass yesterday Det Bakoly
 ‘Bakoly cut the grass yesterday’

¹³ In fact, non-trigger arguments *can* act as discourse topics in a *dia*-construction, but only if they are coindexed with a resumptive pronoun inside the predicate phrase (see Keenan 1976, Paul 1999 for examples and discussion). If the presence of a resumptive pronoun indicates that the discourse topic has been base-generated in the specifier of FP rather than moved there, then this is consistent with the claim that predicate phrases are islands for extraction.

- b. Nanapaka bozaka i.....Bakoly **omaly**
 Pst.AT.cut grass Det Bakoly yesterday
 ‘Bakoly cut the grass yesterday’
- c. **Omal**y dia nanapaka bozaka i.....Bakoly
 yesterday Dia Pst.AT.cut grass Det Bakoly
 ‘Yesterday, Bakoly cut the grass’
- (44) a. Nanapaka bozaka **haingana** i.....Bakoly
 Pst.AT.cut grass quickly Det Bakoly
 ‘Bakoly cut the grass quickly’
- b. * Nanapaka bozaka i.....Bakoly **haingana**
 Pst.AT.cut grass Det Bakoly quickly
 ‘Bakoly cut the grass quickly’
- c. * **Haingana** dia nanapaka bozaka i.....Bakoly
 quickly Dia Pst.AT.cut grass Det Bakoly
 ‘Quickly, Bakoly cut the grass’

In fact, it is not entirely clear that *dia*-fronting involves movement: discourse topics might be left-dislocated constituents, base-generated in their surface position, as has been argued for other languages (cf. note 12). However, the constraints on *dia*-fronting and wh-question formation are at least consistent with the prediction that predicate phrases are islands for extraction, and thus fully compatible with the predicate fronting analysis.

Having outlined an XP-adjunction approach to Malagasy word order and considered some of its consequences, I now turn to evidence that the predicate undergoes fronting over the trigger. In section 4 I discuss the placement of the yes/no question marker *ve*. Following Paul (2001a), I treat *ve* as a second position clitic, and show how the predicate fronting analysis yields a simple *ve* placement rule. In section 5 I turn to word order in embedded clauses. The right-specifier analysis predicts that, all else being equal, the trigger will always follow the predicate phrase. However, if the predicate fronting analysis is correct, this leaves open the possibility that fronting might fail to take place under certain circumstances, in which case the trigger would be spelled out at the beginning of the clause. I show that trigger-initial order is in fact attested in certain types of embedded clauses. Insofar as the arguments in these sections go through, we can conclude that Malagasy word order is compatible with theories such as Kayne (1994), which prohibit right-specifiers and rightward adjunction.

4. Evidence for predicate fronting: Question particle placement

Malagasy possesses various particles for expressing illocutionary force in matrix clauses. The most common of these is *ve*, used to mark yes/no questions. *Ve* typically occurs at the boundary between the predicate phrase and the trigger (regardless of how heavy the predicate phrase is):

- (45) a. Matory **ve** ny.....gidro?
 AT.sleep Qu Det lemur
 ‘Is the lemur sleeping?’
- b. Naka fanafody ho anao **ve** ny.....reninao?
 Pst.AT.get medicine for 2s.Acc Qu Det mother=2s
 ‘Did your mother get medicine for you?’

- c. Namonoan' ny mpamboly ny akoho tany an-tokotany **ve** ny...antsy?
 Pst.CT.kill Det farmer Det chicken Pst.there Obl=yard Qu Det knife
 'Was the knife used by the farmer to kill the chickens in the yard?'

Recall from section 3.2 that contrastive focus in Malagasy is done by means of clefting: The focused constituent constitutes the main predicate, while the presupposition is expressed by a free relative which functions as the trigger. As (46) shows, *ve* appears between the clefted constituent and *no*:

- (46) Ny mpianatra **ve** no...namaky...ny boky?
 Det student Qu Foc Pst.AT.read Det book
 'Is it the student who is reading the book?'

Existential constructions, formed with the verb *misy* 'exist', often lack an overt trigger and consist of just a predicate phrase, in which case *ve* will occur at the end of the clause (47a); moreover, *ve* precedes the trigger even when it is not clause-final (47b). This shows that *ve* does not occupy some sort of 'mirror image Wackernagel' position, immediately preceding the final constituent in the clause. Instead, particle placement targets the right edge of the predicate phrase.

- (47) a. Nisy olona nivity akanjo **ve**?
 Pst.AT.exist person Pst.AT.buy dress Qu
 'Did anybody buy a dress?' (lit. 'Was there a person who bought a dress?')
- b. Namaky boky **ve** ny...mpianatra omaly?
 Pst.AT.read book Qu Det student yesterday
 'Was the student reading a book yesterday?'

However, Paul (2001a) shows that *ve* does not invariably occur at the right edge of the predicate phrase. In (45)–(47) above, the predicate phrase is the first constituent in the clause. However, in some cases one or more elements precede the predicate phrase, as in the *dia*-fronting construction discussed in section 3.5. If *ve* occupied a fixed position in the clause, we would expect it to appear to the right of the predicate phrase in sentences with fronting as well. This turns out to be incorrect. In such sentences *ve* immediately follows the first fronted constituent. Consider the examples in (48) (from Paul 2001a):

- (48) a. Nanapaka bozaka omaly **ve** i...Bakoly?
 Pst.AT.cut grass yesterday Qu Det Bakoly
 'Did Bakoly cut the grass yesterday?'
- b. Omaly **ve** dia nanapaka bozaka i...Bakoly?
 yesterday Qu Dia Pst.AT.cut grass Det Bakoly
 'Yesterday, did Bakoly cut the grass?'
- c. I...Bakoly_i **ve** dia nanapaka bozaka omaly *e_i*?
 Det Bakoly Qu Dia Pst.AT.cut grass yesterday
 'As for Bakoly, did (she) cut the grass yesterday?'
- d. Omaly **ve** i...Bakoly_i dia nanapaka bozaka *e_i*?
 yesterday Qu Det Bakoly Dia Pst.AT.cut grass
 'Yesterday, as for Bakoly, did (she) cut the grass?'

In addition to clauses with *dia*, there are other constructions which feature fronting. For example, when two or more clauses are juxtaposed and their triggers are contrasted with one another, the trigger may pre-

cede the predicate phrase, as in (49) (from Paul 2001a; cf. Keenan 1976). In such sentences the trigger has presumably raised over the predicate to a higher specifier position, much as in *dia* clauses.

- (49) Ny...mpianatra mamaky teny, ny...mpampianatra mihaino
 Det student AT.read word Det teacher AT.listen
 ‘The students read aloud, (while) the teacher listens’

Again, if *ve* consistently targeted the right edge of the predicate phrase, we would expect it to come at the end of the clause in sentences with parallel contrastive fronting. However, Paul shows that *ve* immediately follows the fronted trigger, as in (50) (cf. also (51), adapted from a text):

- (50) Ny...mpianatra ve mamaky teny, ny...mpampianatra ve mihaino?
 Det student Qu AT.read word Det teacher Qu AT.listen
 ‘Do the students read aloud, (while) the teacher listens?’

- (51) Ianao ve ho tonga any anefa izahay aza niverina?
 2s Qu Irr arrive there although lex even Pst.AT.return
 ‘You will reach that place, even though we (were forced to) turn back?’

Based on sentences such as these, Paul (2001a) concludes that *ve* is a second position clitic (cf. Halpern and Zwicky 1996). But how is second position determined? Here I claim that, by adopting the predicate fronting analysis, we can formulate a simple structure-based rule of *ve* placement along the lines of (52):

- (52) *Ve* encliticizes to the highest c-commanding maximal projection in the clause.

In sentences with *dia*-fronting (48b,c,d) and contrastive fronting (49), the highest c-commanding maximal projection will be the (leftmost) fronted constituent, making this the target of *ve* encliticization. This is schematized in (53) (cf. (40)):

- (53) a. [FP [DP i.Bakoly.] =ve [F' dia [TopP nanapaka bozaka omany]]] (= (48c))
 b. [FP [AdvP omany] =ve [F' [DP i.Bakoly.] [F' dia [TopP nanapaka bozaka]]]] (= (48d))

In sentences which lack fronting, the FP which licenses the fronted element(s) is absent, making (the top-most segment of) TopP the root node. In such cases, according to the predicate fronting analysis in (22), the highest c-commanding maximal projection in the clause will be WhP, containing the predicate phrase. This derives the fact that in unmarked sentences, *ve* appears at the right edge of the predicate phrase, immediately preceding the trigger (if any):

- (54) a. [TopP [WhP nanapaka bozaka omany]_i =ve [TopP [DP i.Bakoly.] t_i]] (= (48a))
 b. [TopP [WhP ny mpianatra]_i =ve [TopP [XP no.namaky.ny.boky.] t_i]] (= (46))

How would the right-specifier analysis in (15) handle *ve* placement? Let us begin with predicate-initial sentences. In order to ensure that *ve* appears between the predicate phrase and the trigger, we could assume either that *ve* cliticizes to the right of the constituent which projects the root node, namely Top' (55a), or that it cliticizes to the left of the maximal projection immediately dominated by the root node, namely the trigger in the specifier of TopP (55b).¹⁴

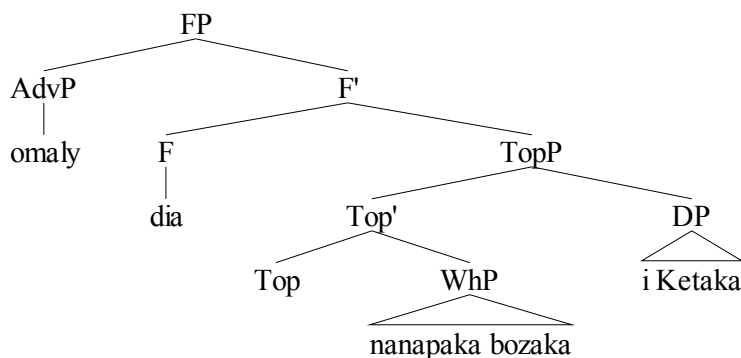
¹⁴ Other alternatives, in which *ve* cliticizes to a lower projection such as WhP, are also possible; however, in keeping with the hypothesis that *ve* is a second position clitic, I will assume that the rule governing its placement refers to general structural criteria such as ‘highest maximal projection’, rather than specific positions or categories.

- (55) a. [TopP [Top' nanapaka bozaka omaly]=ve [DP i.Bakoly]] (= (48a))
 b. [TopP [Top' nanapaka bozaka omaly] ve= [DP i.Bakoly]]

However, neither of these alternatives generalizes in any obvious way to sentences with fronting. Consider (48b), repeated below as (56), and the corresponding right-specifier tree in (57):

- (56) Omaly ve dia nanapaka bozaka i.....Bakoly
 yesterday Qu Dia Pst.AT.cut grass Det Bakoly
 ‘Yesterday, Bakoly cut the grass’

(57)



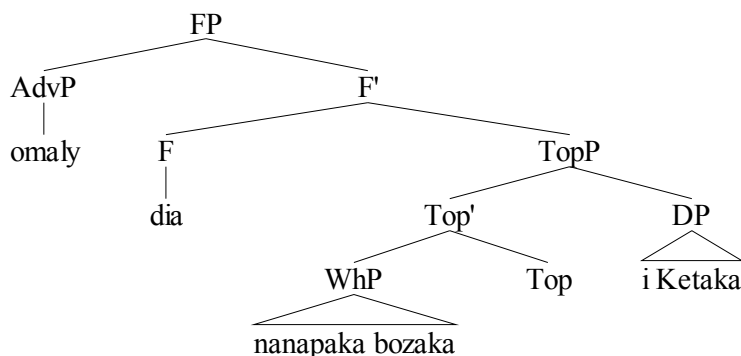
If the rule were that *ve* cliticizes to the right of the constituent which projects the root node, as in (55a), we predict that the clitic will be right-adjacent to F' in (57)—that is, sentence-final. On the other hand, if the rule is that *ve* cliticizes to the left of the maximal projection immediately dominated by the root node, as in (55b), it should be left-adjacent to the adverbial—that is, sentence-initial. Of course, neither prediction is correct: *ve* appears between *omaly* and *dia*.

The right-specifier analysis of Malagasy thus forces us to assume that the *ve*-cliticization rule varies with the type of clause, either in the direction of cliticization (left vs. right), or in the target of cliticization (projecting vs. non-projecting daughter of the root node). In short, if we assume that fronted constituents occupy left-specifiers while right-peripheral triggers occupy right-specifiers, there is no obvious way to capture the distribution of *ve* in terms of a single structural rule.¹⁵ By contrast, the predicate fronting analysis allows for a straightforward structural generalization: *ve* uniformly follows the highest maximal projection dominated by the root node.

Note in closing that there is a variation on the right-specifier analysis which does not present quite the same problems for *ve* placement, namely the structure proposed by MacLaughlin (1995). In MacLaughlin's tree, Top selects its complement to the left, giving us an extra head position between the predicate phrase and the trigger (58). Given this extra position, we might suppose that *ve* procliticizes to the highest head in the clause, namely F in sentences with *dia*-fronting and Top otherwise (assuming that F is present in the derivation only when needed to license a fronted constituent).

¹⁵ I believe that this is true even if the *ve* placement rule does not operate directly on syntactic trees, but on linearized morpho-phonological representations with category labels and other PF-uninterpretable features removed. Paul (2001a) suggests that *ve* might encliticize to the leftmost phonological phrase in the sentence. However, prosodic boundaries are presumably determined by phrase structure boundaries (cf. Nespor and Vogel 1983), such that the *ve* placement rule must ultimately make reference to syntactic constituency. (In any case, it is unclear to me that the target of *ve* cliticization—i.e., the leftmost contrastively fronted constituent if any, otherwise the predicate, regardless of weight—corresponds to a consistent prosodic domain.)

(58)



There are two problems with this alternative. First, it incorrectly predicts that *ve* will immediately precede *dia* in multiple fronting sentences like (48d). Second, it requires us to stipulate that Top selects a complement to its left while all other heads in the language select complements to their right. This is a conceptually unappealing language-internal asymmetry for which there does not seem to be any motivation apart from the desire to ensure correct placement of *ve*.

Summarizing this section: The yes/no question marker *ve* occurs between the predicate phrase and the trigger, except in clauses where one or more constituents have undergone contrastive fronting, in which case it appears after the first fronted constituent. Paul (2001a) argues that *ve* is a second position clitic. Under the predicate fronting analysis of Pred1 in Malagasy, we can formulate a uniform structure-based rule of clitic placement—namely, *ve* follows the highest c-commanding maximal projection in the clause. Under the right-specifier analysis, by contrast, no such rule can be formulated. Instead we must assume that the clitic's host and/or direction of attachment varies from one clause type to another. I take this difference in parsimony as evidence for the predicate fronting analysis and against the right-specifier analysis.

5. Evidence for predicate fronting: Inverted order in non-root clauses

Suppose that predicate-initial order in Malagasy is derived through fronting, as argued here. This raises the possibility that, under the right circumstances, fronting will fail to take place, resulting in a surface order where the trigger precedes the predicate phrase. By contrast, all else being equal, no variation in the position of the trigger is expected under the right-specifier analysis.

In fact, there is evidence for trigger-initial order in certain kinds of clauses. In the previous section I noted that the trigger precedes the predicate phrase in parallel contrastive constructions (cf. (49)). In such cases, it seems likely that the trigger has raised over the predicate phrase to some high position in the clause. However, trigger-initial order is also found in various types of non-root clauses where the trigger does not receive a contrastive interpretation, making a trigger fronting analysis less plausible. Principal among these are the clausal complements of predicates of perception such as 'see' and 'hear' (abbreviated PVCs, for PERCEPTION VERB COMPLEMENTS). Examples are given in (59b) and (60b), where the PVC is bracketed. Comparing these with the corresponding root clauses in (59a) and (60a), we see that in PVCs the trigger comes before the predicate rather than after it:¹⁶

¹⁶ Keenan (1976) mentions that trigger-initial order is also found in adverbial clauses headed by *satria* 'because', as in (i) (trigger-initial order is apparently optional here; the normal Pred1 order is also possible). The syntax of these constructions has proved harder to investigate than that of PVCs, and so I will set them aside here.

(i) Aza mitabataba [satria [ny...rajinareo mamaky boky]]
 Neg.Imp AT.make.noise because Det father=2p AT.read book
 'Don't make noise because your father is reading a book'

- (59) a. Niditra tao an-trano ny...zaza
 Pst.AT.enter Pst.there Obl=house Det child
 ‘The child entered the house’
- b. Nahare [ny...zaza niditra tao an-trano] ny...vehivavy
 Pst.AT.hear Det child Pst.AT.enter Pst.there Obl=house Det woman
 ‘The woman heard the child enter the house’
- (60) a. Namaky boky ny...mpianatra
 Pst.AT.read book Det student
 ‘The student was reading a book’
- b. Nahita [ny...mpianatra namaky boky] ny...mpampianatra
 Pst.AT.see Det student Pst.AT.read book Det teacher
 ‘The teacher saw the student read(ing) a book’

While it is unclear why predicate fronting would be blocked in PVCs, the existence of such a construction is not unexpected under the theory argued for here, where predicate fronting is treated as the XP-adjunction counterpart of T-to-C movement. As is well known, in many languages with overt V-to-T(-to-C) movement, the verb fails to raise as high in certain non-root contexts as it does in root contexts, resulting in word order differences among clause types. Many verb-second languages (German, Mainland Scandinavian, etc.) show an absence of V2 in most embedded clauses. Likewise, root clauses and finite embedded clauses in Irish exhibit VSO order, while non-finite embedded clauses exhibit SOV or SVO order, depending on dialect (Bobaljik and Carnie 1996). It is plausible that whatever mechanisms account for these kinds of V-raising asymmetries can be extended to explain the presence or absence of predicate fronting in different types of Malagasy clauses (I leave this as a matter for future research).

In this section I discuss the PVC construction in some detail. I begin by showing that PVCs are constituents, and then consider their internal syntax. I argue that PVCs are finite clauses—rather than, say, small clauses or complex nominal phrases—and I provide conceptual and empirical arguments that trigger-initial order results from the failure of the predicate to raise over the trigger.

5.1. Clausal complements of perception predicates

Predicates of perception in Malagasy include *re* ‘hear’ and *hita* ‘see, find’, which take an experiencer argument and a theme argument. In the AT voice, the experiencer maps to the trigger function and the theme is predicate-internal (61a)/(62a), while in the TT voice this mapping is reversed (61b)/(62b):¹⁷

- (61) a. Nahare ny alika ny...zaza
 Pst.AT.hear Det dog Det child
 ‘The child heard the dog’
- b. Ren’ ny zaza ny...alika
 TT.hear Det child Det dog
 ‘The child heard the dog’
- (62) a. Nahita an’ i Naivo ny...vehivavy
 Pst.AT.see Acc Det Naivo Det woman
 ‘The woman saw Naivo’

¹⁷ *Hita* and *re* are among those roots which appear uninflected in TT clauses (cf. note 6). The suffix *-n’* is a linker morpheme which licenses predicate-internal actor phrases.

- b. Hitan' ny vehivavy i.....Naivo
 TT.see Det woman Det Naivo
 'The woman saw Naivo'

In addition to taking DP themes, as in (61) and (62), perception predicates may also take clausal themes denoting events (PVCs). The examples given in (59b) and (60b) are repeated below as (63a,b):

- (63) a. Nahare [ny...zaza niditra tao an-trano] ny...vehivavy
 Pst.AT.hear Det child Pst.AT.enter Pst.there Obl=house Det woman
 'The woman heard the child enter the house'
- b. Nahita [ny...mpianatra namaky boky] ny...mpampianatra
 Pst.AT.see Det student Pst.AT.read book Det teacher
 'The teacher saw the student read(ing) a book'

As evidence that the bracketed strings in (63) are constituents, note that they can be made into the matrix trigger by placing the perception predicate in the TT form. This is shown in (64) (cf. (59b)/(60b)), where the fact that the PVC is outside the predicate is indicated by the position of *ve*. Presumably only constituents can function as triggers.

- (64) a. Ren' ny vehivavy (ve) [ny...zaza niditra tao an-trano]
 TT.hear Det woman Det child Pst.AT.enter Pst.there Obl=house
 'The child entering the house, the woman heard (it)'
- b. Hitan' ny mpampianatra (ve) [ny...mpianatra namaky boky]
 TT.see Det teacher Det student Pst.AT.read book
 'The student reading the book, the teacher saw (it)'

Further evidence for constituency is given below, showing that PVCs can be coordinated (65) and clefted (66) (recall that clefted elements appear at the left edge of the clause followed by the focus particle *no*).

- (65) Hitako [Rajaona manoratra taratasy] ary [Rakoto mamaky boky]
 TT.see=1s Rajaona AT.write letter and Rakoto AT.read book
 'I saw Rajaona writing letters and Rabe reading a book'
- (66) a. [Ny...zaza niditra tao an-trano] no...ren'.....ny...vehivavy
 Det child Pst.AT.enter Pst.there Obl=house Foc TT.hear Det woman
 'The child entering the house is what the woman heard'
- b. [Ny...mpianatra namaky boky] no...hitan'.....ny...mpampianatra
 Det student Pst.AT.read book Foc TT.see Det teacher
 'The student reading a book is what the teacher saw'

Having established that PVCs are constituents, we may ask what their category is. Four possible answers:

- (67) a. PVCs are verbal small clauses.
 b. PVCs are DPs containing a relative clause modifier.
 c. PVCs are full clauses in which the trigger has been fronted over the predicate.
 d. PVCs are full clauses in which the trigger occupies its usual position and the predicate has failed to raise over it.

Of these possibilities, (67a-c) are compatible with both the right-specifier analysis and the predicate fronting analysis of Pred1 in Malagasy, while (67d) is compatible only with the predicate fronting analysis. In the following subsections I provide evidence against the first three alternatives, arguing for the fourth alternative by process of elimination. In 5.2 I consider arguments against (67a,b), while (67c) is discussed in 5.3. In the latter section I compare the PVC construction with the superficially similar RAISING-TO-OBJECT construction, showing that the two have very different syntactic properties.

5.2. Arguments that PVCs are full clauses

According to the standard analysis of English sentences like *The teacher saw the student read a book*, the complement *the student read a book* is a small clause, presumably of category *vP* (or its equivalent in other theories). One might argue that the bracketed string in (68a) is also a small clause, in which case *ny mpianatra* ‘the student’ is not a trigger at all, but a VP-internal subject, as diagrammed in (68b). If this were correct, then word order within the PVC would have no bearing on the choice between the predicate raising and right-specifier analyses of main clause order, since both assume that VP-internal subjects occupy a left-specifier (cf. the trees in (2) and (3)).

- (68) a. Nahita [ny mpianatra namaky boky] ny...mpampianatra
 Pst.AT.see Det student Pst.AT.read book Det teacher
 ‘The teacher saw Rabe read a book’
- b. Nahita [_{VP} ny mpianatra [_{V'} namaky boky]] ny mpampianatra

On the face of it, it seems unlikely that the PVC is a small clause because the embedded verb (*namaky*) is marked for past tense. However, one might argue that past marking in this case does not signal the presence of a T head in the embedded clause, but is instead inserted by default, due to a morphological requirement that all verbs have tense (non-finite forms are absent in Malagasy). Even if we make this assumption, we run into problems in analyzing *ny mpianatra* as a VP-internal subject rather than a trigger. PVCs exhibit the full array of voice alternations, allowing foregrounding not only of the actor argument (69a), but also the theme argument (69b), or an oblique (69c), just as in main clauses:

- (69) a. Ren' ny zaza [Rabe namono akoho tamin' ny antsy]
 TT.hear Det child Rabe Pst.AT.kill chicken Pst.with Det knife
 ‘The child heard Rabe kill chickens with the knife’
- b. Ren' ny zaza [ny...akoho novonoin-dRabe tamin' ny antsy]
 TT.hear Det child Det chicken Pst.TT.kill=Rabe Pst.with Det knife
 ‘The child heard Rabe kill the chickens with the knife’
- c. Ren' ny zaza [ny...antsy namonoan-dRabe akoho]
 TT.hear Det child Det knife Pst.CT.kill=Rabe chicken
 ‘The child heard Rabe kill chickens with the knife’

In section 2 I reviewed evidence for locating the trigger in an A'-position. In Pearson (2005a,b) I argue that the function of voice marking is to identify the abstract Case of an A'-chain, in the manner of wh-agreement in Chomorro (Chung 1998). Assuming this is correct, the underlined elements in (69) must be sitting in an A'-position rather than the VP-internal subject position. This in turn means that the bracketed constituents in (69) must be larger than *vP*—something large enough to include TopP. We can therefore set aside the possibility that PVCs are small clauses.

Consider next another approach, according to which PVCs are not clauses at all, but DPs containing relative clause modifiers (Ed Keenan, p.c.). As Keenan (1976) discusses, relative clauses in Malagasy follow the head noun, and do not require special marking (the operator *izay*, which may be used to introduce

relative clauses, is generally optional and often omitted). Moreover, the verb in the relative clause inflects for voice according to the grammatical function of the relativized noun: if the actor is relativized, the verb carries AT marking, if the theme is relativized, the verb carries TT marking, and so on:

- (70) a. ny zazalahy [_{Rel} namangy ahy an-tsekoly omaly]
 Det boy Pst.AT.visit 1s.Acc Obl=school yesterday
 ‘the boy who visited me at school yesterday’
- b. ny zazalahy [_{Rel} novangiako an-tsekoly omaly]
 Det boy Pst.TT.visit=1s Obl=school yesterday
 ‘the boy who I visited at school yesterday’

Notice that the DPs in (70) resemble the bracketed PVCs in (69): In both cases a nominal is followed by a predicate phrase whose verb agrees with the nominal in voice. Perhaps the two constructions are in fact the same. Under the relative clause analysis of PVCs, a sentence like (71) would be more properly translated ‘The teacher saw the student who was reading the book’.

- (71) Hitan’ ny mpampianatra [ny.....mpianatra namaky boky]
 TT.see Det teacher Det student Pst.AT.read book
 ‘The teacher saw the student reading the book’

The relative clause analysis and the clausal complement analysis make very different claims about constituency. Under the relative clause analysis, the embedded predicate, *namaky boky*, is located inside of the DP containing *mpianatra*. The clausal complement analysis, on the other hand, asserts that *namaky boky* is outside of the DP headed by *mpianatra*. These two alternatives are schematized in (72) (using CP as an abbreviation for a full clause):

- (72) a. [_{DP} ny mpianatra [_{CP (=Rel)} namaky boky]]
 b. [_{CP} [_{DP (=trigger)} ny mpianatra] [_{PreDP} namaky boky]]

How can we test these competing structures? As it happens, Malagasy provides a handy means for detecting the constituent boundaries of a DP: demonstrative determiners, such as *ity* ‘this’, occur as a pair of copies, where the first copy appears at the left edge of the DP and the second copy at the right edge. This is illustrated in (73). Crucially, the second copy of the demonstrative is always DP-final, regardless of how heavy the DP is—in particular, it must follow a relative clause, as shown in (73b,c).

- (73) a. **ity** boky mena **ity**
 this book red this
 ‘this red book’
- b. **ity** boky novakin’ ny mpianatra tany an-tokotany **ity**
 this book Pst.TT.read Det student Pst.there Obl=garden this
 ‘this book which the student was reading in the garden’
- c. * **ity** boky **ity** novakin’ ny mpianatra tany an-tokotany
 this book this Pst.TT.read Det student Pst.there Obl=garden
 ‘this book which the student was reading in the garden’

Returning to the competing analyses in (72): If *namaky boky* were a relative clause modifying *mpianatra* (72a), we would expect the second copy of a framing demonstrative to follow *boky*. On the other hand, if

namaky boky were the predicate of a complement clause, with *ny mpianatra* the trigger of that clause (72b), then the second copy of the demonstrative should come immediately after *mpianatra*.

As it turns out, both possibilities are attested, with the predicted difference in interpretation: In (74a) below, the bracketed string is an individual-denoting DP complement, where *namaky boky* ‘read a book’ delimits the reference of the head noun *mpianatra* ‘student’ (the teacher saw the student, who may or may not have been reading at the time s/he was seen). In (74b), by contrast, the bracketed string denotes an event (the teacher witnessed the action of the student reading). The acceptability of (74b) alongside (74a) shows that PVCs are structurally distinguishable from DPs containing relative clause modifiers, and are apparently not of category DP at all.

- (74) a. Hitan’ ny mpampianatra [ity...mpianatra...namaky.....boky...ity]
 TT.see Det teacher this student Pst.AT.read book this
 ‘The teacher saw this student who was reading a book’
- b. Hitan’ ny mpampianatra [ity...mpianatra...ity namaky boky]
 TT.see Det teacher this student this Pst.AT.read book
 ‘The teacher saw this student read(ing) a book’

Final confirmation that PVCs are clauses and not DPs comes from coordination. Recall that Malagasy has various connectives equivalent to English ‘and’, including *sy* and *ary*. Of these, *ary* is used primarily for conjoining clauses, while *sy* is restricted to constituents other than clauses, including DPs. This is illustrated below, with clausal coordination in (75a) and DP coordination in (75b). As (76) shows, PVCs may be freely coordinated using *ary*, while coordination with *sy* is judged awkward at best. As predicted, PVCs pattern as clauses rather than DPs.

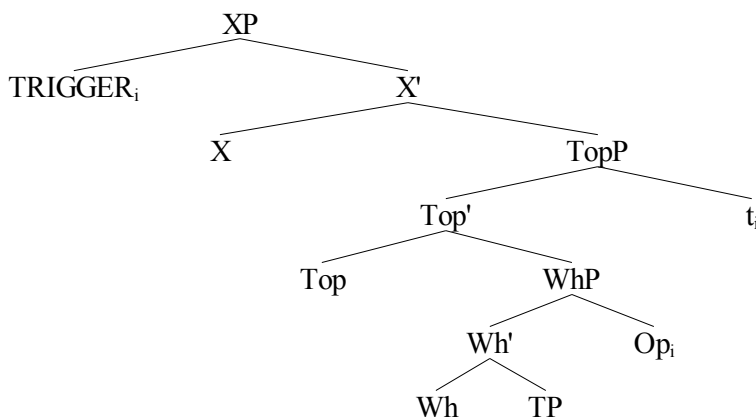
- (75) a. Manoratra taratasy Rajaona { ary / ??sy } mamaky boky Rakoto
 AT.write letter Rajaona and AT.read book Rakoto
 ‘Rajaona is writing letters and Rakoto is reading a book’
- b. Manoratra taratasy Rajaona { sy / ??ary } Rakoto
 AT.write letter Rajaona and Rakoto
 ‘Rajaona and Rakoto are writing letters’
- (76) Hitako [Rajaona manoratra taratasy] { ary / ??sy } [Rakoto mamaky boky]
 TT.see=1s Rajaona AT.write letter and Rakoto AT.read book
 ‘I saw Rajaona writing letters and Rabe reading a book’

Having ruled out the small clause analysis and the complex DP analysis, I conclude that PVCs are full clauses, with the same bipartite structure as ordinary root clauses (trigger plus predicate phrase), but the linear order of the elements reversed, as in (72b).

5.3. Arguments against trigger fronting in PVCs

If PVCs are indeed clauses, the question remains as to whether trigger-initial order results from the absence of predicate fronting, as argued here, or is derived by raising the trigger over the predicate phrase. The latter option is the only one available under the right-specifier analysis. Given such an analysis, we might suppose that word order in PVCs is derived as in (77), where the trigger moves from the right-specifier of TopP to the left-specifier of some higher projection XP:

(77)



What would force the trigger to raise to SpecXP? One possibility is that it must raise in order to be Case-licensed in SpecXP by the higher verb. Initial support for this idea appears to come from the distribution of morphological case in PVC constructions. To see why, it is necessary to say a few things about case marking in Malagasy.

While common noun phrases have the same form regardless of their abstract Case role, pronouns have special nominative, accusative, and genitive forms (the latter being enclitic). Simplifying somewhat, a pronoun is marked accusative when it is a non-trigger object; genitive when it is a non-trigger subject, a possessor, or the complement of a preposition; and nominative elsewhere—e.g., when it acts as the trigger of the clause, is clefted or fronted, or appears in isolation. Proper names like *Rabe* also distinguish nominative and accusative morphologically, where the nominative is unmarked and the accusative takes the proclitic *an-*.¹⁸

Returning to the PVC construction: As the examples in (78) show, when a PVC appears inside the matrix predicate phrase (with the perception predicate in the AT voice) and the trigger is a pronoun or proper name, that pronoun or proper name is marked accusative. This makes the PVC construction look like an ECM or raising-to-object construction, lending plausibility to the idea that the embedded trigger raises over the predicate to some higher licensing position, as in (77).

- (78) a. Nahita [anao namaky boky] ny.....mpampianatra
 Pst.AT.see 2s.Acc Pst.AT.read book Det teacher
 ‘The teacher saw you reading a book’
- b. Nahita [an-dRabe namaky boky] ny.....mpampianatra
 Pst.AT.see Acc=Rabe Pst.AT.read book Det teacher
 ‘The teacher saw Rabe reading a book’

In fact, though, there are good reasons to reject the ECM/raising-to-object analysis of the PVC construction. As discussed earlier, there is considerable evidence that triggers occupy an A'-position, and are licensed clause-internally by binding an operator-variable chain. Hence it is unlikely that the Case requirements of the trigger would motivate it to raise to some higher position. Moreover, recall that the PVC as a whole can act as the trigger of the clause containing it (with the matrix perception predicate in the TT voice). In such cases it is even less likely that the embedded trigger is Case-licensed by some

¹⁸ The proclitic *an-* also functions as an oblique marker (cf. *an-tokotany* ‘in the garden’ in (73b,c)). Note that *n + r* becomes *ndr* (a prenasalized retroflex obstruent) through a regular phonological rule, hence *an- + Rabe > an-dRabe* in (78b). See Keenan (1976), Voskuil (1993), Zribi-Hertz and Mbolatianavalona (1999), and Pearson (2005a) for more on case marking in Malagasy.

element within the higher clause, and yet it still appears in clause-initial position, as (79) shows. Notice that here, the embedded trigger is marked nominative rather than accusative. It seems that the embedded trigger ‘inherits’ its morphological case from the PVC containing it. That is, the embedded trigger takes the nominative form when the PVC appears in a position associated with nominative case (the matrix trigger position), and the accusative when the PVC appears in an accusative position (acting as a predicate-internal complement).

- (79) a. Hitan’ ny mpampianatra [**iana**o namaky boky]
 TT.see Det teacher 2s.Nom Pst.AT.read book
 ‘The teacher saw you reading a book’
- b. Hitan’ ny mpampianatra [**Rabe** namaky boky]
 TT.see Det teacher Rabe Pst.AT.read book
 ‘The teacher saw Rabe reading a book’

How do we account for the variation in morphological case of the embedded trigger if it is uniformly Case-licensed from within the PVC? Here I propose that the PVC as a whole has an abstract Case feature which needs to be checked. When the PVC surfaces inside the predicate (in the canonical object position), this Case feature is checked by the perception predicate and spelled out morphologically as accusative marking (e.g., *an-*) on the embedded trigger. On the other hand, when the PVC is the trigger of the matrix clause, it is Case-licensed by binding an operator-variable chain in the matrix predicate phrase, and its trigger appears in the default nominative form. In other words, the morphological case of the embedded trigger is determined not by its own abstract Case feature, but by the abstract Case feature of the PVC containing it.

As it happens, a closer examination of pronominal case marking patterns provides us with direct evidence against the trigger raising derivation in (77). As mentioned above, pronouns in Malagasy inflect for nominative, accusative, and genitive case. Uniquely, the first person singular pronoun has two distinct nominative forms, *aho* and *izaho*. *Aho* is used only when the pronoun occupies the canonical trigger position. A few speakers also accept *izaho* in the trigger position, though most permit this form only when the pronoun is clefted, fronted, or used in isolation. Crucially, all speakers disallow fronting and clefting of *aho*. The distribution of *aho* and *izaho* is illustrated in (80).¹⁹

- (80) a. Manasa ny lamba { **aho** / % **izaho** }
 AT.wash Det clothes 1s.Nom
 ‘I am washing the clothes’
- b. { **Izaho** / * **aho** } no manasa ny lamba
 1s.Nom Foc AT.wash Det clothes
 ‘It is I who am washing the clothes’
- c. { **Izaho**_i / * **aho**_i } dia manasa ny lamba *e*_i
 1s.Nom Dia AT.wash Det clothes
 ‘As for me, (I) am washing the clothes’

Returning to PVCs: If the trigger is clause-initial because it has raised over the predicate to some higher left-specifier, as in (77), we might expect that *aho* would be disallowed as the trigger of a PVC. However, this turns out not to be the case. As shown in (81), speakers accept *aho* in this position. In addition, the

¹⁹ Whether (80) is acceptable with *izaho* may depend on the speaker’s native dialect. The *aho/izaho* distinction is characteristic of Standard Malagasy, which is based on the Merina dialect. It appears that other varieties of Malagasy lack the *aho* form, and use *izaho* in all positions.

majority of speakers I consulted—crucially, all those who reject *izaho* in sentences like (80)—also reject *izaho* in (81). With regard to the distribution of *aho* and *izaho*, then, clause-initial triggers in PVCs pattern with canonical clause-final triggers in root clauses, rather than behaving as though they have been fronted.

- (81) Hitan' ny mpampianatra [{ **aho** / % **izaho** } namaky boky]
 TT.see Det teacher 1s.Nom Pst.AT.read book
 'The teacher saw me reading the book'

Finally, note that Malagasy does in fact have a productive raising-to-object construction (Keenan 1976, Paul and Rabaovololona 1998), which has very different properties from the PVC construction discussed here. The raising-to-object construction is illustrated in (82b) below. Here a semantic argument of the embedded verb behaves like the structural object of the higher verb: it appears adjacent to the higher verb, separated from the embedded predicate by the particle *ho*, and inflects for accusative case (when a pronoun or proper name). Compare the non-raising construction in (82a), where *Rabe* is the nominative case-marked trigger of the embedded clause, headed by *fa*.²⁰ In Pearson (2005a) I argue that the raised object is generated in the matrix clause and receives its theta role through coindexation with a null operator in the embedded clause; the particle *ho* is a functional head projecting a small clause, which takes the raised object as its specifier and the embedded clause as its complement. (For convenience, I will continue to refer to the object as 'raised', to distinguish it from objects that are θ -marked by the higher verb).

- (82) a. Mihevitra i.....Tenda [fa manaja ny mpampianatra **Rabe**]
 AT.think Det Tenda that AT.respect Det teacher Rabe
 'Tenda thinks that Rabe respects the teacher'
- b. Mihevitra **an-dRabe** [ho manaja ny mpampianatra] i.....Tenda
 AT.think Acc=Rabe Part AT.respect Det teacher Det Tenda
 'Tenda believes Rabe to respect the teacher'
 or 'Tenda thinks (of) Rabe that (he) respects the teacher'

Superficially, the raising-to-object construction in (82b) looks essentially the same as the PVC construction in (83), apart from the presence or absence of the particle *ho*:

- (83) Nahita [**an-dRabe** namaky boky] ny.....mpampianatra
 Pst.AT.see Acc=Rabe Pst.AT.read book Det teacher
 'The teacher saw Rabe reading a book'

However, there is reason to believe that in the PVC construction in (83), *an-dRabe* is the trigger of the embedded clause, whereas in the raising to object construction in (82b), *an-dRabe* is in the matrix clause. For example, in raising-to-object sentences, the raised object may be separated from the embedded predicate phrase by a matrix adverb (84), showing that it is properly outside the embedded clause:²¹

²⁰ Notice that the *fa* clause is extraposed after the trigger. I discuss clause extraposition in section 6. Notice also that the predicate precedes the trigger in *fa* clauses, showing that predicate fronting is compatible with the presence of an overt complementizer. Insofar as predicate fronting in Malagasy is derivationally analogous to T-raising in verb-second languages, as suggested here, the proper analogy is clearly with languages like Icelandic, where V2 can co-occur with an overt complementizer, rather than languages like Dutch and German, where the two are mutually exclusive.

²¹ The example in (84) is somewhat degraded compared with (i) below, where the adverb precedes the raised object. I attribute this to a general preference for definite direct objects to follow manner adverbs, as demonstrated in (ii):

- (84) ? Nilaza an-dRabe tamin-katezerana ho mpangalatra Raso
 Pst.AT.say Acc=Rabe Pst.with-anger Part thief Raso
 ‘Raso said (of) Rabe angrily (that he was) a thief’

By contrast, the trigger of a PVC may not be separated from the embedded predicate phrase by a matrix adverb. Consider the negative polarity adverb *intsony* ‘anymore’. When perception predicates occur in simple transitive (AT) clauses with DP objects, *intsony* generally follows the object, although it may marginally precede the object if the latter is definite. This is shown in (85):

- (85) a. ? Tsy mijery intsony ny namany izy.....ireo
 Neg AT.watch anymore Det friend=3 3.Nom Pl
 ‘They are not watching their friends anymore’
- b. Tsy mijery ny namany intsony izy.....ireo
 Neg AT.watch Det friend=3 anymore 3.Nom Pl
 ‘They are not watching their friends anymore’

When the DP object *ny namany* ‘their friends’ is replaced with the PVC *ny namany miady* ‘their friends fight’, we get the pattern in (86). The preference is for *intsony* to follow *ny namany miady*, although it can marginally precede this string; crucially, however, it is barred from intervening between the DP and the predicate. Compare (86b) with (84), which, though awkward, is grammatical. I take this as further evidence that PVCs are constituents, whereas in raising-to-object sentences the raised object does not form a constituent (of the same sort) with the *ho*-phrase.

- (86) a. ? Tsy mijery intsony ny namany miady izy.....ireo
 Neg AT.watch anymore Det friend=3 AT.fight 3.Nom Pl
 ‘They are not watching their friends fight anymore’
- b. * Tsy mijery ny namany intsony miady izy.....ireo
 Neg AT.watch Det friend=3 anymore AT.fight 3.Nom Pl
 ‘They are not watching their friends fight anymore’
- c. Tsy mijery ny namany miady intsony izy.....ireo
 Neg AT.watch Det friend=3 AT.fight anymore 3.Nom Pl
 ‘They are not watching their friends fight anymore’

In raising-to-object constructions, the raised object, like objects generally, can be promoted to the matrix trigger function by altering the voice of the matrix verb: In (87a) *Raso* is an accusative-marked predicate-internal object, with the matrix verb ‘think’ in the AT voice, while in (87b) *Raso* has been promoted to the trigger function and ‘think’ appears in the TT voice. (That *Raso* is outside the matrix predicate

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- (i) Nilaza tamin-katezerana an-dRabe ho mpangalatra Raso
 Pst.AT.say Pst.with-anger Acc=Rabe Part thief Raso
 ‘Raso said angrily of Rabe that (he was) a thief’
- (ii) a. Namono tamin-katezerana ny voalavo ny...mpamboly
 Pst.AT.kill Pst.with-anger Det rat Det farmer
 ‘The farmer killed the rat angrily’
- b. ? Namono ny voalavo tamin-katezerana ny...mpamboly
 Pst.AT.kill Det rat Pst.with-anger Det farmer
 ‘The farmer angrily killed the rat’

phrase in the latter case is shown by the placement of *ve*.) Note, however, the ungrammaticality of (87c). This shows that while the raised object can be promoted to the matrix trigger function, it is not possible to promote the string consisting of the raised object and the following *ho*-phrase. Here again it appears that the raised object and the *ho*-phrase do not form a surface constituent—or at least, not a constituent capable of acting as the trigger.

- (87) a. Mihevitra an-dRasoā ho namono ny voalavo (ve) ny...zaza
 AT.think Acc=Rasoā Part Pst.AT.kill Det rat Det child
 ‘The child believes Rasoā to have killed the rat’
- b. Heverin’ ny zaza ho namono ny voalavo (ve) Rasoā
 TT.think Det child Part Pst.AT.kill Det rat Rasoā
 ‘Rasoā, the child believes (her) to have killed the rat’
- c. * Heverin’ ny zaza (ve) Rasoā ho namono ny voalavo
 TT.think Det child Rasoā Part Pst.AT.kill Det rat
 ‘Rasoā to have killed the rat, the child believes (it)’

With the PVC construction, the promotion facts are different. When the perception predicate occurs in the TT form, there are two options with regard to which constituent maps to the matrix trigger position: Either the embedded trigger is promoted by itself (88b)/(89b), or the entire PVC is promoted (88c)/(89c). These two options are distinguished by word order, and by the placement of *ve*. The contrast in acceptability between (87c) and (88c)/(89c) reinforces the claim that the PVC construction has a very different constituent structure from the raising-to-object construction:

- (88) a. Nahare an-dRabe niditra tao an-trano (ve) ny...zaza
 Pst.AT.hear Acc=Rabe Pst.AT.enter Pst.there Obl=house Det child
 ‘The child heard Rabe enter the house’
- b. Ren’ ny zaza niditra tao an-trano (ve) Rabe
 TT.hear Det child Pst.AT.enter Pst.there Obl=house Rabe
 ‘Rabe, the child heard (him) enter the house’
- c. Ren’ ny zaza (ve) Rabe niditra tao an-trano
 TT.hear Det child Rabe Pst.AT.enter Pst.there Obl=house
 ‘Rabe entering the house, the child heard (it)’
- (89) a. Nahita an-dRabe namaky boky (ve) ny...mpampianatra
 Pst.AT.see Acc=Rabe Pst.AT.read book Det teacher
 ‘The teacher saw Rabe reading a book’
- b. Hitan’ ny mpampianatra namaky boky (ve) Rabe
 TT.see Det teacher Pst.AT.read book Rabe
 ‘Rabe, the teacher saw (him) reading a book’
- c. Hitan’ ny mpampianatra (ve) Rabe namaky boky
 TT.see Det teacher Rabe Pst.AT.read book
 ‘Rabe reading a book, the teacher saw (it)’

Finally, consider clefting. In the case of the PVC construction, it is possible to cleft either the embedded trigger by itself (90a), or the entire PVC (90b). In the case of the raising-to-object construction, only the

non-thematic object may be clefted (91a); it is not possible to cleft a string consisting of the object and the *ho*-phrase (91b):

- (90) a. Rabe no.....hitan'.....ny.....mpampianatra.....namaky.....boky
 Rabe Foc TT.see Det teacher Pst.AT.read book
 'It was Rabe who the teacher saw reading a book'
- b. Rabe namaky.....boky.....no.....hitan'.....ny.....mpampianatra
 Rabe Pst.AT.read book Foc TT.see Det teacher
 'It was Rabe reading a book that the teacher saw'
- (91) a. Rasoa no.....heverin'.....ny.....zaza.....ho.....namono.....ny.....voalavo
 Rasoa Foc TT.think Det child Part Pst.AT.kill Det rat
 'It is Rasoa who the child believes to have killed the rat'
- b. * Rasoa ho.....namono.....ny.....voalavo.....no.....heverin'.....ny.....zaza
 Rasoa Part Pst.AT.kill Det rat Foc TT.think Det child
 'It is Rasoa to have killed the rat that the child believes'

Summarizing, in PVCs it appears that the left-peripheral DP forms a constituent with the following predicate phrase, and that this constituent has the distribution of a clausal argument: it can be clefted, can function as the trigger of the clause containing it, and may not be broken up by an matrix adverb. By contrast, the raised object in a raising-to-object construction does not form a surface constituent with the following *ho*-phrase—or at least, not a constituent of the same category as a PVC.

I take the data in this section to show that (a) PVCs are trigger-initial clauses which bear a Case feature, and (b) trigger-initial order within the PVC is not the result of trigger raising, but rather the failure of the predicate to adjoin to TopP—in other words, PVCs represent the ‘underlying’ order of trigger and predicate in Malagasy. The existence of this clause type supports the predicate fronting analysis of Pred1 order, while remaining mysterious under the right-specifier analysis.

6. Clause extraposition

I conclude my account of predicate fronting in Malagasy with some tentative remarks on the position of embedded clauses. In 3.4 I noted that temporal and modal adverbs and presuppositional PPs can come at the end of the clause, following the trigger. In addition, complement and adverbial clauses (often introduced by a complementizer such as *fa*) routinely follow the trigger, as illustrated below ((92b,c) are adapted from texts). I refer to this phenomenon descriptively as CLAUSE EXTRAPOSITION.

- (92) a. Manantena ny.....vehivavy [fa.....hamono.....ny.....akoho.....aho]
 AT.hope Det woman that Irr.AT.kill Det chicken 1s.Nom
 'The woman hopes that I will kill the chicken'
- b. Taitra izy.....roalahy [nahare.....izany.....vaovao.....izany]
 surprised 3.Nom two.male Pst.AT.hear that news that
 'The two men were surprised to hear that news'
- c. Tsy maintsy nandalo.....amin'.....ny.....lavabato.....izy [vao.....tonga.....tany.....]
 necessary Pst.AT.pass in Det cave 3.Nom before arrived Pst.there
 'They had to pass through a cave to get there' (lit. '... before arriving there')

To account for clause extraposition in a way which is compatible with the predicate fronting analysis, we might assume that the clause (abbreviated CP) extracts from the predicate phrase and raises to some left-

peripheral position below that of the trigger—perhaps merging as an inner specifier of TopP, much like clause-final adverbials and PPs. Once the CP has moved out, the predicate phrase remnant, containing the trace of CP, raises to adjoin to TopP, yielding the surface order. This derivation is schematized in (93):

- (93) a. [TopP ~~Trigger~~ [Top' CP_i [WhP V ... t_i ...]]]
 b. [TopP [WhP V ... t_i ...] [TopP ~~Trigger~~ [Top' CP_i t_{WhP}]]]

One problem with (93) is that it is unclear what would force the CP to raise out of the predicate phrase, other than the need to derive the correct surface order. Whereas clause-final adverbials and PPs are arguably licensed by the Top head by virtue of their association with the presuppositional content of the sentence, the same cannot be said of embedded clauses, which are typically non-presuppositional. Nevertheless, it is worth noting that the right-specifier analysis fares no better than the predicate raising analysis in this regard: To account for extraposition under the right-specifier analysis, we must assume that the CP undergoes rightward movement over the trigger, as in (94). At least the derivation in (93) has the conceptual advantage of being consistent with linearization algorithm theories which prohibit rightward movement, such as Kayne (1994).

- (94) [TopP [WhP V ... t_i ...] ~~Trigger~~] CP_i

However, we might entertain an alternative approach to extraposition based on the copy theory of movement (Chomsky 1995), according to which ‘extraposed’ clauses actually occupy their base position rather than a dislocated position. Such an approach would favor the predicate fronting analysis, inasmuch as the right-peripheral position of embedded clauses is explained by the fact that the predicate phrase originates to the right of the trigger.

According to the copy theory of movement, the formation of multi-member chains involves merger of non-distinct feature bundles (copies) at different points in the derivation, with deletion of redundant features at PF (perhaps in order to satisfy the LCA, as in Nunes 2004). It is usually assumed that the lower (c-commanded) copy is targeted for deletion. However, Wilder (1995) has proposed that in some cases only a portion of the lower copy is deleted, along with the complementary portion of the higher copy, yielding (the appearance of) discontinuous constituency. Hinterhölzl (2000) applies this idea to the treatment of PP extraposition in German: In accordance with Kayne (1994), Hinterhölzl argues that OV order in German is derived from underlying VO via leftward movement of the object over the verb. To account for sentences like (95a), where object raising strands a PP modifier, he argues that the object DP-chain has undergone discontinuous deletion, as schematized in (95b):

- (95) a. Hans hat **ein Buch** gekauft **über Chomsky**
 Hans has a book bought about Chomsky
 ‘Hans bought a book about Chomsky’
 b. Hans hat [ein Buch ~~über Chomsky~~]_i gekauft [~~ein Buch~~ über Chomsky]_i

Clause extraposition in Malagasy might be accounted for in a similar manner. Consider (92a), repeated below as (96a): Under the predicate raising analysis argued for in this paper, feature checking triggers copying of WhP (containing the embedded clause), with the copy left-adjoined to TopP. Discontinuous deletion might apply to this chain at PF, so that the matrix verb is pronounced in the moved position while its clausal complement is pronounced in situ, as diagrammed in (96b). If this approach is correct, then embedded clauses appear to the right of the trigger because that is where the predicate phrase starts out: clause extraposition is actually clause stranding.

- (96) a. Manantena ny.....vehivavy [fa hamono ny akoho aho]
 AT.hope Det woman that Irr.AT.kill Det chicken 1s.Nom
 ‘The woman hopes that I will kill the chicken’
- b. [manantena ~~fa hamono ny akoho aho~~]_i ny.vehivavy [~~manantena~~ fa hamono ny akoho aho]_i

Of course, this analysis requires PF-deletion to be a much more selective operation—and hence, a much more powerful operation—than is usually assumed. In order to avoid massive overgeneration, we would need to establish principled constraints on discontinuous deletion. How, for example, would we rule out derivations in which a verb and its DP complement are spelled out in separate copies, yielding the ill-formed VSO clause in (97) as a PF-variant of (98)?

- (97) a. * Namangy ny.....vehivavy an-dRasoa
 Pst.AT.visit Det woman Acc=Rasoa
 ‘The woman visited Rasoa’
- b. [namangy ~~an-dRasoa~~]_i ny.vehivavy [~~namangy~~ an-dRasoa]_i
- (98) a. Namangy an-dRasoa ny.....vehivavy
 Pst.AT.visit Acc=Rasoa Det woman
 ‘The woman visited Rasoa’
- b. [namangy an-dRasoa]_i ny.vehivavy [~~namangy an-dRasoa~~]_i

Wilder (1995) suggests that discontinuous deletion may apply only when the undeleted portion of the lower copy can be parsed as a prosodic constituent. Adopting this idea, we might speculate that embedded clauses form prosodic domains of the appropriate sort to the exclusion of the matrix verb, whereas DP dependents do not. An alternative solution is suggested by Chomsky’s (2000, 2001) theory of cyclic spell-out. Suppose we assume that a CP dependent, but not a DP (or PP) dependent, counts as a STRONG PHASE, subject to spell-out once the strong phase which contains it (= ν P) has been constructed. Suppose further that once a strong phase has been spelled out, its PF-interpretable features are removed from the derivation, rendering them unavailable for further copying. If so, then the representation in (96b) should be revised as in (99): Once the verb (*manantena*) merges with its CP complement (*fa hamono ny akoho aho*) and its subject to form ν P, the CP is spelled out, and its PF-interpretable features removed. This takes place prior to predicate fronting; hence only the verb is copied (with subsequent deletion of the lower copy of the verb once the matrix clause is spelled out).²²

- (99) [manantena]_i ny.vehivavy [~~manantena~~ fa hamono ny akoho aho]_i

Obviously this approach raises as many questions as it answers.²³ However, we can safely conclude that the clause extraposition facts are either neutral between the right-specifier analysis and the predicate raising analysis, or favor the latter. If some version of the discontinuous deletion approach goes through, then the right-peripheral placement of embedded clauses merely reflects the base position of the fronted

²² By assumption, the subject of the clause is a null operator coindexed with the trigger *ny vehivavy*. This operator is presumably not copied, since it lacks PF-interpretable features.

²³ For example, in order to rule out DP stranding (97), we must assume that DP does not count as a strong phase, though other authors have argued that DP is a strong phase. Also, since ν P is a strong phase, we would need some way to rule out ν P stranding (which would yield the VSO order in (97) in a somewhat different way). I leave these as questions for future investigation.

predicate (i.e., extraposition is really stranding). If not, then we must assume that extraposed clauses undergo movement, regardless of which approach to Pred1 we adopt.²⁴

7. Summary and further issues: X⁰- versus XP-adjunction

In this paper I discussed predicate-trigger (‘VOS’) order in Malagasy. I argued against an analysis where the trigger occupies a right-specifier, and in favor of an analysis where the trigger occupies a left-specifier and surface order is derived by raising the predicate phrase over the topic: Functional heads at the left periphery of the clause (Wh, Top) attract a tense feature, resulting in the pied-piping of a maximal projection containing the T head. This is analogous to T-to-C raising in V2 languages like German, except that movement takes the form of successive XP-adjunction rather than successive head-adjunction. Insofar as the predicate raising analysis is supported, Malagasy word order is compatible with Kayne (1994), Chomsky (1995), Brody (2000a/b), and other theories of phrase structure which disallow right-specifiers and rightward movement.

After presenting the details of this analysis, I considered some of its consequences for the treatment of contrastive focus constructions, extraction, and other phenomena. I then provided empirical evidence for predicate fronting from two domains. I began by showing that the yes/no question particle *ve* occurs in between the predicate phrase and the trigger, unless the clause contains one or more fronted constituents, in which case *ve* follows the first such constituent. This led Paul (2001a) to identify *ve* as a second position clitic. I showed that by adopting the predicate fronting analysis, we can formulate a uniform structure based rule of clitic placement (*ve* attaches to the right of the highest c-commanding XP in the clause), whereas the right-specifier analysis forces us to posit a more complex, construction-sensitive clitic placement rule. I then turned to order in non-root contexts. I argued that if the trigger occupies a right-specifier position from which it c-commands the predicate phrase, then we predict it will consistently occur at the right periphery of the clause. However, if the trigger occupies a left-specifier and the predicate raises over it, it is possible that under the right conditions predicate raising will fail to occur, causing the trigger to surface to the left of the predicate (I compared this situation with that in some V-raising languages, where the verb fails to raise as high in embedded contexts as in root contexts). I argued that trigger-initial order is in fact attested in certain types of embedded clauses, in particular those selected by perception verbs such as ‘see’ and ‘hear’. I showed that these constituents are full clauses (rather than small clauses or DPs containing modifying relative clauses). I then showed that there is no evidence that the trigger has raised over the predicate in these clauses, and at least some evidence that it has not raised over the predicate, meaning that trigger-initial order must result from the absence of predicate fronting. I concluded with some tentative remarks on the treatment of clause extraposition under a predicate fronting analysis.

My attempt to motivate predicate fronting led me to propose an analogy with T-to-C raising in V2 languages. But this begs the question: Why should Malagasy employ XP-adjunction to satisfy the tense features of Wh and Top whereas V2 languages make use of X⁰-adjunction? While I do not pretend to have an answer to this question, I suspect that the choice might depend on morphological factors. Chomsky (1995) suggests that when movement (copying and remerger) takes place, the smallest constituent necessary for convergence will be copied, in accordance with general principles of economy. Overt movement occurs when PF-interpretable features are copied and remerger along with LF-interpretable and uninterpretable features (generalized pied-piping). It stands to reason that the requirements for PF-convergence—for example, the need to satisfy conditions on morphological well-formedness—will play a crucial role in determining the size of the constituent to be pied-piped: X⁰ versus XP.

Following this line of reasoning, we might turn to morphological differences between Malagasy and the Germanic V2 languages. Note, for instance, that in V2 languages tense morphology is suffixal, where-

²⁴ Yet another approach would be to treat clause extraposition as a ‘post-linearization’ rule, whereby a prosodically heavy constituent (the embedded clause) is reordered after a prosodically lighter constituent (the trigger) in response to parsing pressures, more or less in the spirit of Hawkins (1990). It seems to me that this approach—insofar as it is consistent with the linearization algorithm theories assumed here—is also neutral between the right-specifier analysis and the predicate raising analysis.

as in Malagasy tense is marked by prefixes (e.g., *manoratra* ‘writes’, *nanoratra* ‘wrote’, *hanoratra* ‘will/would write’). It is possible that this morphological difference reflects a syntactic difference between the two types of languages with respect to the hierarchical relation between the tense head and the verb at spell out. The usual assumption for V2 languages is that V (or some larger X^0 constituent containing V) raises to adjoin to T (100a). Suppose that in Malagasy, by contrast, V does not raise all the way to T, but is instead spelled out at the left edge of the complement of T (100b); T and V then undergo some form of morphological merger under adjacency.²⁵ If this is correct, then V+T in Germanic constitutes a syntactic word (X^0 -level unit) as well as a morphological word, whereas T+V in Malagasy constitutes a morphological word but not a syntactic word.

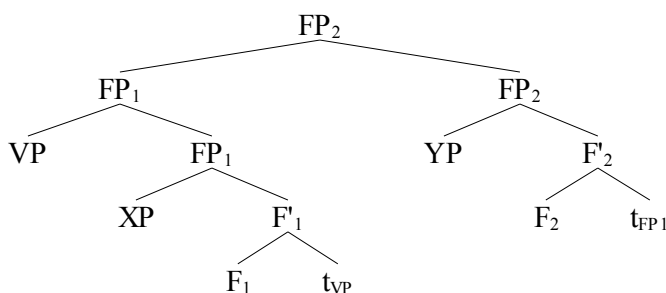
(100) a. [TP ... V_i+T [XP ... t_i ...]]

b. [TP ... T [XP V ...]]

In Malagasy, as in Germanic, tense is a bound morpheme: if the T and V heads failed to undergo morphological merger, the derivation would crash at PF. If morphological well-formedness conditions (e.g., bound morphemes must form a unit with their hosts) act as a filter on the pied-piping of PF-interpretable features, then the choice between predicate fronting and T-to-C movement might follow from the difference in (100). When Wh and Top attract a tense feature in Germanic V2 clauses, pied-piping T⁰ would not prevent the tense morpheme and the verb stem from being spelled out together, since V has incorporated into T in the syntax. Therefore it is T⁰ which is pied-piped, since this is the most economical option. In Malagasy, however, pied-piping T⁰ would strand the verb stem, preventing morphological merger of T and V. The smallest constituent containing the tense feature which can be pied-piped, while still maintaining linear adjacency between T and V at spell out, is the entire TP. Therefore, tense feature checking in Malagasy will involve XP-adjunction.

The consequences of this analysis remain to be worked out. But whatever the ultimate motivation for predicate fronting in Malagasy might turn out to be, it is worth noting that the preference for XP-adjunction over head adjunction is reflective of a general pattern in the language. Rackowski and Travis (2000), Pearson (2000), and Travis (2005) argue that within the Malagasy predicate phrase there is evidence for successive raising of XP remnants containing the verb, in contexts where other languages exhibit verb raising. XP remnant movement results in ROLL-UP structures, where the underlying order of phrases in specifier positions is inverted, as schematized in (101) (cf. Cinque 1996): The verb phrase, selected by some functional head F₁, raises and adjoins to the maximal projection FP₁. FP₁ is then selected by some higher functional head F₂, and raises to adjoin to FP₂, and so on. As a result of these movements, the original order of YP (in the specifier of FP₁) and XP (in the specifier of FP₂) is reversed.

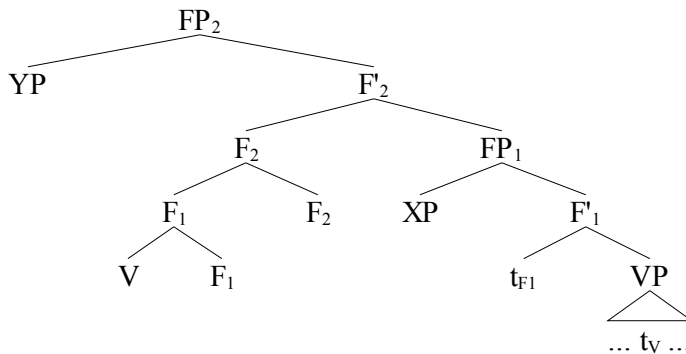
(101)



²⁵ On morphological merger, see Halle and Marantz (1993). Merger might involve lowering of T to V, much as McCloskey (1996) argues that C lowers and left-adjoins to INFL at PF in Irish.

Compare (101) with the head-movement derivation in (102), where V raises out of VP to adjoin to the F₁ head that selects it, after which F₁ (containing V) raises to adjoin to F₂, and so on. Here the underlying order of YP and XP is not disturbed by successive adjunction.

(102)



As evidence of roll-up movement in Malagasy, Rackowski and Travis (2000), Pearson (2000), and Travis (2005) note that the unmarked linear order of deeply embedded verbal dependents (internal arguments, low adverbs, etc.) is generally the inverse of their order in V-movement languages like German, French, and Dutch. For example, consider the relative order of frequency adverbs such as ‘always’ and manner adverbs such as ‘well’: The unmarked pattern in French (103a) and Dutch (103b) is for the frequency adverb to precede the manner adverb. Compare these with Malagasy, where (as noted first by Rackowski 1998) frequency adverbs consistently follow manner adverbs (104). If adverbs occupy specifier positions, and if the specifier that hosts frequency adverbs is higher than the specifier that hosts manner adverbs, as in Cinque (1999), then the inverted order in (104) can be explained as a result of roll-up movement (see Rackowski and Travis 2000, Pearson 2000 for discussion).

(103) a. Jean lave **toujours bien** ses vêtements
 Jean washes always well his clothes
 ‘Jean always washes his clothes well’

b. Jan wast **altijd** zijn kleren **goed**
 Jan washes always his clothes well
 ‘Jan always washes his clothes well’

(104) Manasa **tsara** ny lambany **foana** i.....Ketaka
 AT.wash well Det clothes=3 always Det Ketaka
 ‘Ketaka always washes his clothes well’

Likewise, object-oriented secondary predicates follow the object in Dutch (105), but precede the object in Malagasy (106) (examples taken from Hoekstra 1988 and Paul 1999, respectively). Assuming that such predicates are generated in a deeply embedded position, below the specifier position in which objects are Case-licensed, the Malagasy order can again be explained as the result of a roll-up derivation.

(105) Hij maaide het gras **kort**
 he mowed the grass short
 ‘He mowed the grass short’

(106) Misotro **mangatsiaka** ny kafe **Rasoà**
 AT.drink cold Det coffee Rasoà
 ‘Rasoà drinks coffee cold’

Finally, in Malagasy object shift out of the VP involves rightward displacement, whereas in other languages object shift is to the left. Compare the Dutch sentences in (107) (adapted from Zwart 1997) with the Malagasy sentences in (108): In Dutch, we see that non-specific direct objects are left-adjacent to the verb, following the temporal adverb *gisteren* ‘yesterday’ (107a), whereas specific direct objects can appear in a displaced position preceding the adverb (107b). In Malagasy, we find the mirror image of this: In (108a) the non-specific direct object occurs right-adjacent to the verb, preceding the adverb *haingana* ‘quickly’, while the specific object in (108b) appears in a scrambled position to the right of the adverb. Assuming that object shift targets a specifier above the specifier containing the adverb, the appearance of rightward movement in Malagasy can again be attributed to the roll-up derivation in (101) (see Pearson 2000 for details).

- (107) a. Jan heeft gisteren een meisje gekust
 Jan has yesterday a girl kissed
 ‘Jan kissed a girl yesterday’
- b. Jan heeft een meisje gisteren gekust
 Jan has a girl yesterday kissed
 ‘Jan kissed a [specific] girl yesterday’
- (108) a. Nijinja vary haingana ny...mpamboly
 Pst.ATcut rice quickly Det farmer
 ‘The farmer harvested rice quickly’
- b. Nijinja haingana ny vary ny...mpamboly
 Pst.AT.cut quickly Det rice Det farmer
 ‘The farmer harvested the rice quickly’

Presumably, cross-linguistic comparison with other predicate-initial languages would yield evidence bearing on the questions raised in this section. It remains to be seen, for example, whether the kinds of mirror image orders illustrated in (104), (106), and (108) are a general feature of predicate-initial languages. If so, we might have reason to posit a general parameter determining whether a language will employ X⁰-adjunction or XP-adjunction in the overt checking of T and V features (different versions of such a parameter are suggested by Pearson 2000 and Travis 2005). I leave this as an issue for future research.

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