

## Predicate Raising and Perception Verb Complements in Malagasy

### Abstract

Malagasy clauses have a bipartite structure, consisting of a PREDICATE plus a topic-like constituent, the TRIGGER, which specifies the argument of predication. Normally the predicate precedes the trigger. The question arises as to whether the trigger originates to the right of the predicate, or whether predicate-trigger order is derived through predicate fronting. I argue in favor of predicate fronting based on evidence from clausal complements in sentences denoting direct perception of an event. These complements closely resemble matrix clauses, but exhibit an order where the trigger precedes the predicate. I show that these complements are single constituents which pattern as tensed clauses with regard to binding and other tests. I also present evidence that the trigger in perception verb complements occupies the same position as triggers of predicate-initial clauses. It follows that the word order difference between perception verb complements and predicate-initial clauses reflects a difference in the surface position of the predicate. I propose that predicate-initial clauses include a finiteness (Fin) head in their left periphery which attracts the predicate (= TP) to check tense and EPP features, causing the predicate to raise over the trigger. In perception verb complements, which denote events rather than propositions, the Fin head is absent, and so predicate fronting fails to occur.

*Keywords:* Malagasy, word order, perception verb complement, predicate raising, VOS

### 1. Introduction

Malagasy, an Austronesian language of Madagascar, exhibits predicate-initial clause order. Most clauses have a bipartite structure comprised of a PREDICATE PHRASE followed by a DP or CP denoting the argument of clause-level predication. Following earlier work (Pearson 2005a), I will refer to this DP/CP as the TRIGGER of the clause (see section 2.1 for more on this element). Examples are given in (1) below, where the trigger is underlined. Evidence from coordination and particle placement shows that the predicate phrase forms a constituent to the exclusion of the trigger (Keenan 1976, Dahl 1996). For instance, (1) shows that the yes/no question particle *ve* appears at the right edge of the predicate phrase, immediately preceding the trigger.<sup>1</sup>

- (1) a. Mitomany (ve) ireo zaza ireo  
AT.cry these child these  
'These children are crying'
- b. Niditra tao an-trano (ve) ny vehivavy  
Pst.AT.enter in.there Obl-house Det woman  
'The woman entered the house'
- c. Namaky boky tany an-tokotany (ve) ilay mpianatra  
Pst.AT.read book there Obl-garden that student  
'That student was reading a book in the garden'

The same predicate-initial, trigger-final order found in root contexts also occurs in embedded clauses. This is illustrated by the examples in (2), where the embedded clause (in brackets) is introduced by the complementizer *fa*. In (2a) the embedded clause is extraposed to the right of the matrix trigger, while in (2b) the embedded clause is itself the matrix trigger.

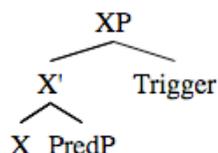
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<sup>1</sup> All data in this paper comes from the Merina dialect, which forms the basis for the standard variety of Malagasy. The following abbreviations are used in the glosses: 1ex: 1st person exclusive, 1in: 1st person inclusive, 1s: 1st person singular, 2s: 2nd person singular, 2p: 2nd person plural, 3: 3rd person (singular/plural), Abs: absolutive, Acc: accusative, AT: actor-trigger voice, Comp: complementizer, CT: circumstantial-trigger voice, Dat: dative, Det: determiner, Erg: ergative, Foc: focus particle, Gen: genitive, Imp: imperative, Irr: irrealis/future, Neg: negative marker, Nom: nominative, Nzn: nominalization, Obl: oblique marker, Part: particle, Pres: present, Prt: participle, Pst: past, Rel: relative marker, Top: topic particle, TT: theme-topic voice.

- (2) a. Mihevitra (ve) ny...vehivavy [ fa mitomany ireo zaza ireo ]  
 AT.think Det woman Comp AT.cry these child these  
 ‘The woman thinks that these children are crying’
- b. Mahagaga ahy (ve) [ fa niditra tao an-trano ny...vehivavy ]  
 AT.surprise 1sAcc Comp Pst.AT.enter in.there Obl-house Det woman  
 ‘It surprises me that the woman entered the house’

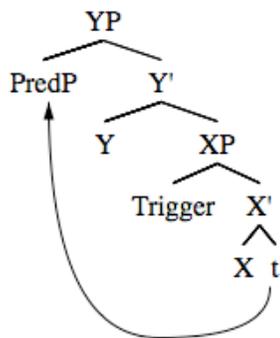
Guilfoyle, Hung and Travis (1992) locate the trigger in the specifier of a functional projection XP (which they identify as IP). To account for the right-peripheral position of the trigger, they propose that the specifier of XP is linearized to the right of X', which contains the predicate phrase, as schematized in (3).

- (3) *Predicate-initial order (right-specifier analysis)*



Pearson (1998, 2001), Rackowski and Travis (2000), and Travis (2006) argue that predicate-trigger order is instead derived through movement. The trigger is linearized to the left of X', while the predicate phrase extracts from X' and raises over the trigger to some higher specifier position, as schematized in (4). I will refer to (3) above as the RIGHT-SPECIFIER analysis and (4) as the PREDICATE-RAISING analysis.

- (4) *Predicate-initial order (predicate-raising analysis)*



Predicate raising, involving the fronting of a VP (remnant) or a larger phrase containing the verb, has been proposed to account for verb-initial and predicate-initial order in a number of languages (see Mas-sam 2000, 2001 on Niuean; Lee 2000 on Zapotec; Aldridge 2004 on Seediq; Cole and Hermon 2008 on Toba Batak; and Coon 2010 on Chol, among others). In the case of Malagasy, whether the right-specifier analysis or the predicate-fronting analysis is correct has consequences for general theories of word order. The predicate-raising analysis, but not the right-specifier analysis, is consistent with minimalist approaches to linearization such as Kayne (1994), Chomsky (1995), Brody (2000), and others, which posit a universal algorithm for mapping hierarchical relations in the narrow syntax onto precedence relations at PF (e.g., Kayne's LINEAR CORRESPONDENCE AXIOM). These theories dispense with directionality parameters, attributing all word order variation to differences in movement operations. A shared feature of these theories is the claim that specifiers are uniformly linearized to the left of the heads whose projections they merge with. The structure in (4) is compatible with this assumption while the one in (3) is not.

In this paper I offer an argument for the predicate-raising analysis based on word order in embedded clauses that have a 'truncated' left periphery. Suppose we assume, consistent with Chomsky's (2000, 2001) approach to movement, that predicate raising in (4) reflects the establishment of an Agree relation between the Y head and PredP, where PredP re-merges as the specifier of YP in order to satisfy an EPP

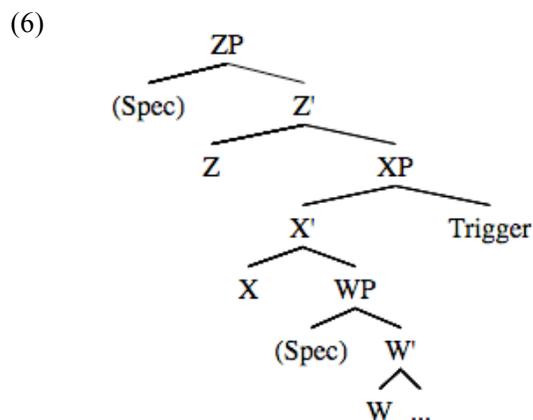
requirement of Y. Suppose further that some clauses in Malagasy have a reduced structure which includes the XP layer that hosts the trigger but lacks the YP layer that attracts PredP. In clauses of this type, the predicate would be spelled out in its base position (sister of X), and would thus follow the trigger when the structure is linearized.

Here I will show that certain types of embedded clauses in Malagasy, which arguably have a truncated left periphery, exhibit the predicted trigger-predicate order. The example I will focus on involves event-denoting complements of perception verbs such as ‘see’ and ‘hear’, as illustrated in (5). Compare the bracketed clauses in these examples with their predicate-initial counterparts in (1)-(2) above.

- (5) a. Mahita [ ireo...zaza ireo mitomany ] (ve) ny...lehilahy  
 AT.see these child these AT.cry Det man  
 ‘The man sees these children crying’
- b. Nahare [ ny...vehivavy niditra tao an-trano ] (ve) Rakoto  
 Pst.AT.hear Det woman Pst.AT.enter in.there Obl-house Rakoto  
 ‘Rakoto heard the woman enter(ing) the house’
- c. Nahita [ ilay mpianatra namaky boky tany an-tokotany ] (ve) aho  
 Pst.AT.see that student Pst.AT.read book there Obl-garden 1sNom  
 ‘I saw that student reading a book in the garden’

The bracketed complements in (5) differ from those in (2) in that they are neither extraposed nor introduced by a complementizer. Nevertheless, I will show that they pattern as embedded clauses with the same bipartite trigger-predicate structure as root clauses and clauses headed by *fa*, and that trigger-predicate order in these clauses is due to the absence of predicate fronting. Since they exhibit the inverse of the usual order of predicate and trigger, I will refer to the bracketed constituents in (5) as INVERSE-ORDER PERCEPTION VERB COMPLEMENTS, or IPVCs. For convenience, I will refer to the trigger of an IPVC as the IPVC-TRIGGER and the predicate phrase within the IPVC as the IPVC-PREDICATE. In (5c), for instance, *ilay mpianatra* is the IPVC-trigger while *namaky boky tany an-tokotany* is the IPVC-predicate.

If my analysis of the construction in (5) is correct, IPVCs provide evidence for the raising approach to predicate-initial order in Malagasy, as in (4), insofar as they exemplify a type of clause where predicate raising has failed to occur. The right-specifier approach in (3), by contrast, would lead to a rather different explanation for the word order difference between IPVCs and other clauses, one which attributes this difference to the spell-out position of the trigger rather than the spell-out position of the predicate. Suppose we follow Guilfoyle et al. (1992) in assuming that categories in Malagasy are parameterized with respect to whether the specifier is spelled out to the left or right of the head (contra Kayne 1994, etc.). We might posit a mixed-branching clause structure like (6) below, where the specifier of XP, spelled out to the right of X’, is the default surface position for the trigger.



To derive the inverted order in IPVCs, we would have to assume either that the IPVC-trigger has raised into some higher left-specifier position, such as SpecZP, or else that the clause is truncated below XP and

the IPVC-trigger surfaces in a lower left-specifier position, such as SpecWP. In arguing for my analysis, then, I need to demonstrate that IPVC-triggers occupy the same position as clause-final triggers. From this it would follow that the word order difference between root clauses and *fa*-clauses on the one hand, and IPVCs on the other, is instead due to the spell-out position of the predicate.

The IPVC construction is discussed briefly in Paul and Ranaivoson (1998), based on earlier unpublished work by Ranaivoson, and in Pearson (1998, 2001), but has otherwise received little attention in the literature. Hence, one of the goals of this paper is to provide additional data on this construction, and to compare IPVCs with other clause types and with perception verb complements in other languages.

The paper is organized as follows: In section 2 I provide some background information on Malagasy clause structure, focusing on voice and case morphology and the position of the trigger. In section 3 I introduce perception verbs in Malagasy and discuss the range of complements they can take, concentrating on the semantic differences between IPVCs and PVCs headed by the complementizer *fa*. I then offer a preliminary account of trigger-predicate order in IPVCs, connecting the absence of predicate raising to the fact that IPVCs denote events rather than propositions and lack an independent tense specification. I propose that in propositional clauses, the head which attracts the predicate (labeled Y in (4) above) is associated with finiteness (Fin). This Fin head probes the [T(ense)] feature of the predicate phrase (= TP), and carries an EPP requirement which causes TP to raise over the trigger and re-merge as the specifier of FinP. In embedded clauses denoting events, by contrast, the Fin head is absent, and so there is no probe for the [T] feature in TP. Thus the predicate fails to raise and remains instead in its base position, spelled out to the right of the trigger. I note that event-denoting clauses with trigger-initial order occur not just in perception complements, but also in certain kinds of temporal clauses and in newspaper headlines.

Sections 4 and 5 provide empirical support for my analysis. In section 4 I give evidence from constituency tests to support the bracketing in (5) above, with the IPVC-trigger and the IPVC-predicate forming a constituent to the exclusion of the perception verb. I show that the position of the trigger is not due to its having moved into the higher clause—in other words, IPVC-triggers do not undergo RAISING TO OBJECT. I also show that IPVCs are clauses denoting events rather than DPs denoting individuals. In section 5, I argue that trigger-predicate order in IPVCs is due to the spell-out position of the predicate rather than the spell-out position of the trigger. In particular, I present evidence that although IPVCs are smaller than root clauses, their triggers occupy the same structural position as the triggers of root clauses. I show that IPVC-triggers and matrix triggers pattern together with respect to reconstruction and the distribution of *wh*-phrases. I then present evidence that the IPVC constitutes the local A-binding domain for its trigger, suggesting that IPVCs include structure above TP and that the IPVC-trigger is not Case-licensed by a head in the higher clause (ECM), in contrast to non-finite PVCs in English and other European languages. I also consider, and reject, the possibility that the IPVC-trigger raises from the canonical trigger position to a higher position at the left edge of the embedded clause (= SpecZP in (6) above). I argue on conceptual grounds that IPVCs are more likely to have a truncated clause structure than an extended clause structure, and present pronoun distribution data to support the claim that IPVC-triggers have not undergone fronting.

Finally, in section 6 I consider a potential challenge to my analysis, having to do with the morphological case form of the IPVC-trigger. This varies according to the position of the IPVC within the larger clause: the IPVC-trigger is realized as accusative when the IPVC is spelled out in complement position, and nominative otherwise (e.g., when the IPVC is pseudo-clefted). I argue against an ECM account of these facts, and propose an alternative which builds on proposals by Pesetsky (2013) and others, to the effect that morphological case (M-CASE) assignment should be dissociated from syntactic licensing of DPs. Specifically, I argue that triggers are dislocated topics which check their Case feature by binding an empty category in the lower predicate. As dislocated nominals whose syntactic role is recoverable from the voice morphology on the verb, triggers normally appear in default m-case (nominative for Malagasy). However, default m-case can be overridden by accusative m-case assigned by a c-commanding verb, just in case the trigger and the verb appear in the same spell-out domain. I show that m-case assignment of this sort involves the same configuration that leads to long-distance agreement between a verb and an embedded topic in the Caucasian language Tsez (Polinsky and Potsdam 2001). I conclude section 6 by not-

ing some suggestive parallels between IPVCs in Malagasy and pseudo-relative PVCs in Romance languages. Section 7 summarizes the paper.

## 2. Background

Malagasy is a head-initial language belonging to the Western Malayo-Polynesian branch of Austronesian and spoken on Madagascar. In this section I present some background information on Malagasy clause structure, focusing on the voice system, the position of the trigger argument, and the distribution of morphological case. More detailed treatments of voice and trigger selection, from various theoretical perspectives, can be found in Keenan (1976, 1995, 2000), Rabenilaina (1998), Paul (2000), and Pearson (2005b). For general information on Malagasy morpho-syntax, see Keenan (1976), Pearson and Paul (1996), Keenan and Polinsky (1998), Paul (1998), Rasoloson and Rubino (2005), and the many references therein.

### 2.1. Voice, Verb Morphology, and the Position of the Trigger

As noted above, clauses in Malagasy are generally comprised of a predicate phrase and a trigger. When the predicate phrase is headed by a verb, the verb carries VOICE morphology to indicate the grammatical role of the trigger (the morphological case of the trigger is invariant; see 2.2). Voice alternations are illustrated in (7) below. In (7a) the verb appears in the ACTOR-TOPIC (AT) voice form, used when the trigger is the highest core argument in the clause—that is, the sole argument of an intransitive verb or the external argument of a transitive verb (I will refer to this argument as the SUBJECT). When the trigger role is assigned to an internal argument of a transitive verb (an OBJECT), as in (7b), the verb takes the THEME-TOPIC (TT) form. Finally, the verb takes appears in the CIRCUMSTANTIAL-TOPIC (CT) form when the trigger bears an oblique role such as instrument, beneficiary, goal, or location (7c). Within the predicate phrase, the order is VSOX (verb > non-trigger subject > non-trigger object > oblique).

- (7) a. Mamono ny akoho amin' ny antsy ny...mpamboly  
 AT.kill Det chicken with Det knife Det farmer  
 'The farmer is killing the chickens with the knife'
- b. Vonoin' ny mpamboly amin' ny antsy ny...akoho  
 TT.kill Det farmer with Det knife Det chicken  
 'The chickens are being killed by the farmer with the knife'
- c. Amonoa' ny mpamboly ny akoho ny...antsy  
 CT.kill Det farmer Det chicken Det knife  
 'The knife is being used by the farmer to kill chickens'

AT voice is formed by adding the prefix *m-* to the verb stem, while CT voice is formed by adding the suffix *-ana*. The stem itself consists of the root plus a stem-forming prefix such as *an-* or *i-* (e.g., AT *mamono* < *m-an-vono*, and CT *amonoan'* < *an-vono-ana*, where *vono* is the root and *an-* is the stem-forming prefix). In TT voice the stem-forming prefix is absent and the root carries the suffix *-ina* or *-ana*, or the prefix *a-*, depending on the verb (e.g., *vonoin'* < *vono-ina*). In addition to voice, verbs inflect for tense. Present tense is unmarked, while past is marked by *n(o)-* and irrealis/future by *h(o)-*. These morphemes prefix to the non-AT form of the verb (e.g., 'TT.kill' is *vonoina* in the present, *novonoina* in the past, *hovonoina* in the irrealis/future). In the AT form, the tense prefixes replace the prefix *m-* (e.g., 'AT.kill' is *mamono* in the present, *namono* in the past, *hamono* in the irrealis/future). See Keenan and Polinsky (1998) and Pearson (2005b) for more detailed discussion of verb morphology.

As shown below, complement clauses pattern as internal arguments when it comes to the voice of the selecting verb. In (8a), the subject of 'think' is the matrix trigger and the verb appears in the AT form. The complement clause is extraposed to the end of the sentence. In (8b) the subject of 'think' is within the

matrix predicate, as shown by its position relative to the question particle *ve*. Here the complement clause itself acts as the matrix trigger and ‘think’ appears in the TT form.<sup>2</sup>

- (8) a. Mihevitra (ve) ny vehivavy [ fa mitomany ireo zaza ireo ]  
 AT.think Det woman Comp AT.cry these child these  
 ‘The woman thinks that these children are crying’
- b. Heverin’ ny vehivavy (ve) [ fa mitomany ireo zaza ireo ]  
 TT.think Det woman Comp AT.cry these child these  
 ‘The woman thinks that these children are crying’

Various factors determine which of the verb’s dependents will be selected as the trigger of the clause. In certain cases trigger selection is syntactically determined: for instance, the relative operator functions as the trigger in a relative clause (Keenan 1976, Pearson 2005a; cf. section 4.2 below). Outside of such contexts, trigger selection is sensitive to information structure. In comparing the variants in (7) above, for example, native speakers report that these sentences are truth-conditionally equivalent but differ with regard to ‘aboutness’ or focus of attention: (7a) is interpreted as predicating a property of the farmer, namely that s/he is killing the chicken with the knife. Likewise, (7b) predicates a property of the chicken, while (7c) predicates a property of the knife. Thus the trigger appears to identify the THEME, or clause-level TOPIC, while the predicate maps to the RHEME/COMMENT.

The trigger position may be occupied by a pronominal, a proper name, or a DP headed by an overt determiner and typically interpreted as definite/specific, generic, or strongly quantificational (in the sense of Milsark 1977). The determiner may not be omitted. Compare the examples below, which show that an indefinite object, taking the form of a bare NP (*akoho*), can appear as the complement of an AT verb (9a) but cannot function as a trigger with the verb in the TT voice (9b).

- (9) a. Mamono *akoho* amin’ ny antsy ny mpamboly  
 AT.kill chicken with Det knife Det farmer  
 ‘A farmer is killing chickens with the knife’
- b. \* Vonoin’ ny mpamboly amin’ ny antsy *akoho*  
 TT.kill Det farmer with Det knife chicken  
 ‘The farmer is killing chickens with the knife’

Linguists and grammarians have generally identified the trigger as the SUBJECT of the clause (Keenan 1976 and much subsequent work). However, in Pearson (2001, 2005a) I argued that the trigger is not the structural subject, but instead a topic-like element which base-merges in a high A'-position from which it binds a null resumptive element within TP. In support of this analysis, I showed that triggers exhibit a number of structural characteristics characteristic of A'-topics—e.g., they exhibit the same binding behavior as topicalized DPs in V2 languages like German and Icelandic.

I adopt the trigger-as-topic analysis here. For the sake of concreteness, I assume the clause structure schematized in (10) below, based on Pearson (2005a) ((10) abstracts away from predicate fronting, to which I return in 3.2). The trigger originates in the specifier of a TOPIC PHRASE (TopP), whose Top head takes the predicate phrase as its complement. I assume that the predicate phrase is of category TP.<sup>3</sup> Within the TP, I assume that non-trigger objects (Obj) are spelled out inside vP, while non-trigger subjects (Subj) raise to the specifier of aspect phrase (AspP). The verb raises to the T head and is thus spelled out at the left edge of the predicate, immediately preceding the subject in non-AT clauses.

<sup>2</sup> Another possibility is that the embedded clause is extraposed in (8b), just as in (8a), and the syntactic trigger position is filled by a null expletive, as suggested by an anonymous reviewer. Either way, the embedded clause in (8b) functions as the matrix trigger in the broad sense that its syntactic role (complement of ‘think’) is what determines the voice of the matrix verb.

<sup>3</sup> Nominal and adjectival predicates in Malagasy are not marked for tense (Malagasy is a zero copula language). Nevertheless I assume that nominal and adjectival predicates include a T head and belong to category TP, since their distribution is essentially the same as that of verbal predicates. (Note that in irrealis/future clauses, nominal and adjectival predicates are preceded by the particle *ho*. I assume that this particle spells out the irrealis/future feature on the T head.) In section 3.2 I suggest that the presence of overt tense inflection is neither necessary nor sufficient for a Malagasy predicate to pattern as finite.

(10) [TopP Trigger<sub>i</sub> Top [TP(=PredP) OP<sub>i</sub> T+V [AspP (Subj) ... [vP ... (Obj) ... ]]]]

As (10) shows, I assume that the predicate phrase contains a null resumptive element, specifically an operator (OP) which originates in an argument position and raises to the specifier of TP. The trigger receives its thematic interpretation (and checks its Case feature) by binding this resumptive element. An alternative possibility is that the trigger itself originates in a TP-internal argument position and raises to SpecTopP. I adopt the structure in (10) in part to maintain consistency with Pearson (2005a), but mostly because we can more straightforwardly account for the morphological case form of the trigger if we assume that it is base-merged in a non-argument position outside TP (see section 6.1.1 for discussion).<sup>4</sup>

Adopting the structure in (10), we may characterize voice morphology as identifying the syntactic role—more precisely, the Case position—of the operator bound by the trigger. In this respect, voice marking in Malagasy functions like WH-AGREEMENT in Chamorro (Chung 1998; see Pearson 2005a for discussion). Different implementations of this idea are offered in Pearson (2001, 2005a/b) and Travis (2006). For reasons of space I will not review these analyses here. The following descriptive generalization will suffice for present purposes (cf. section 6.1.1):<sup>5</sup>

- (11) a. When OP raises to SpecTP from the subject position (SpecAspP in (10)), the verb in T is spelled out with AT morphology.  
 b. When OP raises to SpecTP from the object position (internal to vP), the verb in T is spelled out with TT morphology.

## 2.2. Morphological Case

Since my analysis of IPVCs has consequences for theories of morphological case (M-CASE), an issue I take up in section 6.1, I include here a brief overview of case marking in Malagasy (see also Keenan 1976, Zribi-Hertz and Mbolatianavalona 1999). I also introduce the pseudo-cleft and *dia*-topic constructions, which feature in subsequent discussion, and conclude with some brief remarks on the relationship between m-case and voice.

Common noun phrases, such as DPs headed by the determiner *ny*, do not show m-case distinctions in Malagasy. In (7) above, for example, *ny mpamboly* ‘the farmer’ and *ny akoho* ‘the chicken’ take the same form regardless of whether they function as the trigger, a non-trigger subject, or a non-trigger object. By contrast, proper names such as *Rasoa* take different forms according to their syntactic role. A proper name appears in its morphologically unmarked form when it acts as the trigger of a clause, regardless of the voice of the verb, as shown in (12a,b) below. When the proper name is a non-trigger object, however, it takes the proclitic *an-* (12c). Finally, when the proper name is a non-trigger subject, it is phonologically bound to the verb and the two are written as a single orthographic word (12d).<sup>6</sup>

- (12) a. Mamangy ny mpampianatra Rasoa  
 AT.visit Det teacher Rasoa  
 ‘Rasoa is visiting the teacher’  
 b. Vangian’ ny mpampianatra Rasoa  
 TT.visit Det teacher Rasoa  
 ‘Rasoa is being visited by the teacher’

<sup>4</sup> Travis (2006) also argues that the Malagasy trigger is a dislocated topic-like element which originates in a non-argument position and binds an empty category within the predicate phrase, although she identifies that category as *pro* rather than OP. In support of this analysis, Travis points out a number of structural parallels between the Malagasy trigger-predicate structure and clitic left dislocation structures in Romance

<sup>5</sup> I disregard CT voice here, since it plays no role in the present discussion. See Pearson (2005a,b) for an analysis of CT clauses as applicative constructions where OP originates in the specifier of (a high) ApplP.

<sup>6</sup> Orthographic *d* in *an-dRasoa*, *vangian-dRasoa*, etc., reflects a morpho-phonological change whereby *n* and *r* merge across a morpheme boundary to become a prenasalized apico-alveolar affricate, written *ndr*.

- c. Mamangy *an-dRaso* ny mpampianatra  
 AT.visit Acc-Raso Det teacher  
 ‘The teacher is visiting Raso’
- d. Vangian-*dRaso* ny mpampianatra  
 AT.visit-Raso(Gen) Det teacher  
 ‘The teacher is being visited by Raso’

The unmarked form associated with the trigger function is typically referred to as the NOMINATIVE, while the *an-* form in (12c) is labeled the ACCUSATIVE. The bound form in (12d) is referred to as the GENITIVE, since possessors within DP also take this form: e.g., *ny tranon-dRaso* ‘Raso’s house’. The complements of many prepositions also appear in the genitive: e.g., *amin-dRaso* ‘with Raso’.

Pronouns also make a three-way morphological distinction between nominative, accusative, and genitive. The forms for the pronouns are listed in (13). Note that the genitive forms are enclitics, and are written as a single orthographic word with their hosts.

(13)		<i>Nom</i>	<i>Acc</i>	<i>Gen</i>
	1s	izaho, aho	ahy	-ko
	1ex	izahay	anay	-nay
	1in	isika	antsika	-ntsika
	2s	ianao	anao	-nao
	2p	ianareo	anareo	-nareo
	3	izy	azy	-ny

As with proper names, the nominative form is used for pronouns in trigger function (14a,b), while non-trigger objects appear in the accusative (14c) and non-trigger subjects in the genitive (14d). Pronominal possessors and the complements of prepositions also appear in the genitive: e.g., *ny tranonay* ‘our house’, *aminay* ‘with us’.

- (14) a. Mamangy ny mpampianatra izahay  
 AT.visit Det teacher 1exNom  
 ‘We are visiting the teacher’
- b. Vangian’ ny mpampianatra izahay  
 TT.visit Det teacher 1exNom  
 ‘We are being visited by the teacher’
- c. Mamangy *anay* ny mpampianatra  
 AT.visit 1exAcc Det teacher  
 ‘The teacher is visiting us’
- d. Vangianay ny mpampianatra  
 AT.visit.1exGen Det teacher  
 ‘The teacher is being visited by us’

As I argue in Pearson (2005a), nominative is the DEFAULT m-case in Malagasy (in the sense of Schütze 2001)—a fact which will play an important role in section 6.1. Thus, pronouns and proper names appear in the nominative form when they occur in isolation and when they occupy a non-argument position. For instance, the nominative form is used when a pronoun or proper name is pseudo-clefted, as in (15):

- (15) a. Izahay (ve) no mamangy ny mpampianatra  
 1exNom Foc AT.visit Det teacher  
 ‘It’s us who are visiting the teacher’  
 more lit. ‘(The ones) who are visiting the teacher are *us*’
- b. Izahay (ve) no vangian’ ny mpampianatra  
 1exNom Foc TT.visit Det teacher  
 ‘It’s us who the teacher is visiting’  
 more lit. ‘(The ones) who the teacher is visiting are *us*’

In this construction a contrastively focused phrase appears at the left edge of the clause, followed by the focus particle *no*. This particle forms a constituent (the *NO-PHRASE*) with the following string, corresponding to the presupposed portion of the clause. When the pseudo-clefted constituent is a DP or embedded clause, its grammatical role is indicated by the voice of the verb in the *no*-phrase: e.g., AT voice is required when the subject is pseudo-clefted (15a) while TT voice is required when an object is pseudo-clefted (15b). The yes/no question particle *ve* comes immediately after the focused phrase, suggesting that the pseudo-clefted phrase is itself the matrix predicate while the *no*-phrase is its trigger. If this is correct, then we see that the nominative form is required when the DP functions as a predicate (see Paul 2000, 2001; Potsdam 2006 for evidence that pseudo-clefted constituents are predicates).

Pronouns and proper names also occur in the nominative when they appear in clause-initial position followed by the particle *dia*. I will refer to this construction, illustrated in (16), as the *DIA-TOPIC* construction. Here the referent denoted by the fronted constituent is highlighted as newly discourse-prominent (see Keenan 1976, Paul 2000, Pearson 2001 for discussion of this construction).

- (16) a. *Izahay dia mamangy ny mpampianatra*  
lexNom Top AT.visit Det teacher  
'As for us, (we) are visiting the teacher'
- b. *Izahay dia vangian' ny mpampianatra*  
lexNom Top TT.visit Det teacher  
'As for us, the teacher is visiting (us)'

Finally, there are situations where a non-trigger argument is prevented from appearing in the accusative or genitive m-case and takes the default nominative form instead. For example, genitive pronouns are replaced by their nominative counterparts in environments where clitics are disallowed. Consider how the third person pronoun is realized when it is the non-trigger subject of a TT clause, as in (17) below. Normally the pronoun is realized as the clitic *-ny* (17a) (*vangiana* + *-ny* > *vangiany*). However, when the pronoun combines with a following modifier to form a larger DP, the clitic form is disallowed and the pronoun instead appears in its nominative form *izy* (see Zribi-Hertz and Mbolatianavalona 1999 for discussion). Possible modifiers include the demonstrative *ireo*, used to specify that the pronoun has a plural referent (17b), or a relative clause containing a verb denoting a reciprocal kinship relation (*mivady* 'be spouses', *mirahalaly* 'be brothers', etc.) (17c).

- (17) a. *Vangiany ny...mpampianatra*  
TT.visit.3Gen Det teacher  
'He/she is visiting the teacher' (or 'They are visiting the teacher')
- b. *Vangian' [ izy ireo ] ny...mpampianatra*  
TT.visit 3Nom these Det teacher  
'They are visiting the teacher'
- c. *Vangian' [ izy mirahalaly ] ny...mpampianatra*  
TT.visit 3Nom AT.be:brothers Det teacher  
'They, who are brothers, are visiting the teacher'

In certain contexts nominative also overrides accusative m-case, as in (18) (adapted from Zribi-Hertz and Mbolatianavalona 1999:193-194). Here the non-trigger object position is filled by a coordinate DP consisting of two pronouns or proper names conjoined with *sy* 'and'. In such constructions, only the first conjunct is marked accusative while the second conjunct appears in the nominative. Quite generally, a pronoun or proper name in the second conjunct of a coordinate DP will take the nominative form. While I do not have a specific explanation for this pattern, coordinate structures are a well known environment for the emergence of default m-case cross-linguistically (Schütze 2001).

- (18) a. *Namonjy [ ahy sy { ianao / \*anao } ] io...olona...io*  
Pst.AT.save 1sAcc and 2sNom / 2sAcc that person that  
'That person saved me and you'

- b. Namonjy [ an-dRandria sy (\*an-d)Rasoa ] io...olona...io  
 Pst.AT.save Acc-Randria and (Acc-)Rasoa that person that  
 ‘That person saved Randria and Rasoa’

If Pearson (2005a,b) and Travis (2006) are correct that Malagasy voice identifies the Case role of an A'-element, then the traditional m-case labels are somewhat misleading. In particular, NOMINATIVE is not necessarily an appropriate name for the default m-case, since that term implies that this is the form associated with the subject role. As shown above, surface subjects—that is, DPs spelled out in SpecAspP—normally appear in the genitive form, while nominative DPs occur most often in non-argument positions. Regardless of their appropriateness, I will continue to use the traditional m-case labels below.<sup>7</sup>

I return to the status of m-case and its relationship to voice marking in section 6.1. There I show that in embedded contexts, the m-case of the trigger actually varies according to the size and position of the clause that contains it. I argue that it is the voice morphology on the verb, rather than the m-case marking on the trigger itself, which reflects the structural position in which the trigger checks its abstract Case feature (cf. (11) above). This is couched within an approach to DP licensing according to which Case-checking and m-case realization are governed by independent mechanisms.

### 3. The IPVC Construction

In this section I formally introduce the IPVC construction. In 3.1 I review the morphological and selectional properties of perception verbs in Malagasy, and compare the IPVC construction with a construction where the perception verb selects a clause headed by the complementizer *fa*. In 3.2 I sketch a formal account of predicate raising and its absence in IPVCs.

#### 3.1. Perception Verbs and Their Complements

Examples of perception verbs in Malagasy are given in (19). For each verb I list the root, the AT form, and the TT form (CT forms are omitted since they play no role in the discussion).

(19)	<i>Root</i>	<i>AT</i>	<i>TT</i>	
	hita	mahita	hita	‘see, find’
	re	mahare	re	‘hear, touch, taste/smell’
	heno	mihaino	heno	‘listen to’
	jere	mijery	jerena	‘look at, watch’

Perception verbs take two core arguments, an experiencer and a theme. With respect to voice, the experiencer patterns as the subject argument and the theme as the object. That is, the verb appears in the AT form when the experiencer is the trigger of the clause, as in (20a) and (21a), and in the TT form when the theme is the trigger, as in (20b) and (21b):

- (20) a. Nahita ny alika ny...zazavavy  
 Pst.AT.see Det dog Det girl  
 ‘The girl saw the dog’  
 b. Hitan’ ny zazavavy ny...alika  
 TT.see.Gen Det girl Det dog  
 ‘The girl sees/saw the dog’
- (21) a. Nahare ny tabataba ny...polisy  
 Pst.AT.hear Det noise Det police  
 ‘The police heard the noise’

<sup>7</sup> In Pearson (2005a) I suggest that genitive and nominative are not in fact distinct m-cases, but rather phonologically bound and free realizations of a single m-case. I set aside this possibility here.

- b. Ren' ny polisy ny...tabataba  
 TT.hear.Gen Det police Det noise  
 'The police hear(d) the noise'

Note that *hita* and *re* belong to a class of verbs whose TT form consists of the bare root, without any voice morphology. These root predicates do not inflect for tense, and the clause may receive a present or past interpretation depending on context, as reflected in the sentence glosses for (20b) and (21b). In these examples the root is suffixed with the morpheme *-n'*, typically analyzed as a genitive marker ('Gen'), which plays a role in licensing possessors and non-trigger subjects (see Paul 1996, Keenan 2000, Pearson 2005a/b). That *-n'* is not a voice morpheme is shown by the fact that it is omitted when the non-trigger subject is left implicit: *Hita ny alika* 'The dog is/was seen', *Re ny tabataba* 'The noise is/was heard'.

In the examples above, the theme argument is a DP denoting an individual, but the verbs in (19) can also select an embedded clause denoting a proposition. As shown in (22), propositional complements are introduced by the complementizer *fa*. I will refer to complements of this type as *fa*-PVCs. In (22a), where *hita* is in the AT form, the experiencer subject *ny vehivavy* 'the woman' functions as the matrix trigger and the *fa*-PVC is extraposed to its right. In (22b), with *hita* in the TT form, the subject is inside the predicate phrase and the *fa*-PVC itself acts as the matrix trigger.

- (22) a. Nahita ny...vehivavy [ *fa* namaky boky ny...mpianatra ]  
 Pst.AT.see Det woman Comp Pst.AT.read book Det student  
 'The woman saw that the student was reading a book'
- b. Hitan' ny vehivavy [ *fa* namaky boky ny...mpianatra ]  
 TT.see.Gen Det woman Comp Pst.AT.read book Det student  
 'The woman sees/saw that the student was reading a book'

Finally, perception verbs can select a clause denoting an event, as in (23). This is what I have dubbed the IPVC construction.

- (23) Nahita [ ny...mpianatra namaky boky ] ny...vehivavy  
 Pst.AT.see Det student Pst.AT.read book Det woman  
 'The woman saw the student reading a book'

Unlike *fa*-PVCs, IPVCs are neither extraposed nor introduced by a complementizer. Here I focus on the fact that, whereas *fa*-PVCs look like regular root and dependent clauses in that the trigger follows the predicate, in an IPVC the trigger precedes the predicate. This order is fixed: according to the speakers I consulted, the sentence becomes unacceptable if the IPVC-trigger is placed after the IPVC-predicate:

- (24) a. \*Nahita [ nitomany ny...zaza ] aho  
 Pst.AT.see Pst.AT.cry Det child 1sNom  
 'I saw the child crying'
- b. \*Nahita [ namaky boky iretsy...mpianatra...iretsy ] aho  
 Pst.AT.see Pst.AT.read book those student those 1sNom  
 'I saw those students reading books'

In sections 4 and 5 I provide evidence for the structure indicated by the bracketing and underlining in (23), according to which *ny mpianatra namaky boky* is a single clausal constituent and *ny mpianatra* is its trigger. First I briefly discuss how IPVCs are interpreted. As the sentence glosses in (22) and (23) suggest, the contrast between *fa*-PVCs and IPVCs mirrors the contrast between finite and non-finite complements of perception verbs in English (Declerck 1982, Dik and Hengefeld 1991, Safir 1993, Felser 1999):

- (25) a. The woman saw [ that the student was reading the book ]  
 b. The woman saw [ the student reading the book ]

The IPVC construction in (23) is interpreted much like the so-called ACC-*ing* PVC construction in English (25b), in that both express direct perception of an event: the woman is understood to have witnessed

the reading activity as it was happening. On the other hand, the *fa*-PVC in (22) corresponds closely to the finite CP complement in (25a) in that they both express indirect event perception. In (22) the perception verb is interpreted epistemically: the woman saw something which led her to infer that the student was reading the book, but she may not have witnessed the reading event itself.

As evidence of the semantic difference between (22) and (23), note the contrast below. In the *fa*-PVC construction, the matrix and embedded clauses can receive separate temporal modification (26a), enforcing an interpretation where the reading event and seeing event do not overlap in time. When the *fa*-PVC is replaced by an IPVC, however, the sentence becomes anomalous (26b).

- (26) a. Nahita ny...vehivavy *androany* [ *fa* namaky boky ny...mpianatra *omaly* ]  
 Pst.AT.see Det woman today Comp Pst.AT.read book Det student yesterday  
 ‘Today the woman saw that the student had been reading a book yesterday’  
 b. # Nahita [ ny...mpianatra namaky boky *omaly* ] ny...vehivavy *androany*  
 Pst.AT.see Det student Pst.AT.read book yesterday Det woman today  
 ‘Today the woman saw the student reading a book yesterday’

Unlike their semantic counterparts in English, however, *fa*-PVCs and IPVCs do not differ with respect to morphological finiteness. In both (22) and (23) the embedded verb *namaky* carries the past tense prefix *n-*. However, given that Malagasy verbs lack untensed inflectional forms altogether (e.g., there are no infinitive or participial forms), the presence of tense marking does not necessarily entail that the clause is finite in the sense that it includes an interpretable tense feature. Significantly, there is a difference between *fa*-PVCs and IPVCs with regard to tense marking. In the *fa*-PVC construction, the tense of the embedded clause is independent of the tense of the matrix clause, as illustrated in (27). This is what we expect given that the *fa*-PVC construction expresses indirect perception, with ‘see’ construed epistemically: since the reading event need not be directly perceived, it need not overlap temporally with the perception event.

- (27) a. Mahita ny...vehivavy [ *fa* namaky boky ny...mpianatra ]  
 AT.see Det woman Comp Pst.AT.read book Det student  
 ‘The woman sees that the student was reading a book’  
 b. Mahita ny...vehivavy [ *fa* hamaky boky ny...mpianatra ]  
 AT.see Det woman Comp Irr.AT.read book Det student  
 ‘The woman sees that the student is going to read a book’  
 c. Nahita ny...vehivavy [ *fa* hamaky boky ny...mpianatra ]  
 Pst.AT.see Det woman Comp Irr.AT.read book Det student  
 ‘The woman saw that the student is/was going to read a book’

In the IPVC construction, by contrast, the tense of the embedded verb must match the tense of the perception verb (28)-(29). This makes sense given that the IPVC construction expresses direct perception of an event, which entails that there must be temporal overlap between the reading event and the seeing event.<sup>8</sup>

- (28) a. \* Mahita [ ny...mpianatra namaky boky ] ny...vehivavy  
 AT.see Det student Pst.AT.read book Det woman  
 (‘The woman sees the student having read a book’)

<sup>8</sup> Although every speaker I consulted showed a strong preference for tense matching, one speaker also allowed irrealis marking on the IPVC as a marked option (hence the ?? on (28c) and (29c)). Note that the tense matching pattern found here is not unique to the IPVC construction. Malagasy also has control complements whose tense marking is dependent on the tense of the superordinate clause. Some control verbs (e.g., *manaiky* ‘agree’) select an embedded clause in the irrealis form, but for other control verbs (e.g., *manandrana* ‘try’, *manomboka* ‘begin’) the tense of the embedded clause matches the tense of the control verb. See Paul and Ranaivoson (1998) for an overview of clausal complementation in Malagasy, and Polinsky and Potsdam (2004), Potsdam (2009) for recent discussion of Malagasy control constructions.

Incidentally, (28a) is grammatical under an irrelevant interpretation where the sentence denotes perception of an individual (‘The woman sees the student who was reading a book’) rather than perception of an event. Under this interpretation, the bracketed constituent is not a clause, but rather a DP within which *namaky boky* functions as a relative clause modifying *mpianatra*. The same holds for (28c) and (29b,c). See section 4.2 below for detailed discussion.

- b. Mahita [ ny...mpianatra mamaky boky ] ny...vehivavy  
 AT.see Det student AT.read book Det woman  
 ‘The woman sees the student reading a book’
- c. ?? Mahita [ ny...mpianatra hamaky boky ] ny...vehivavy  
 AT.see Det student Irr.AT.read book Det woman  
 (‘The woman sees the student going to read a book’)
- (29) a. Nahita [ ny...mpianatra namaky boky ] ny...vehivavy  
 Pst.AT.see Det student Pst.AT.read book Det woman  
 ‘The woman saw the student reading a book’
- b. \* Nahita [ ny...mpianatra mamaky boky ] ny...vehivavy  
 Pst.AT.see Det student AT.read book Det woman  
 (‘The woman saw the student reading a book’)
- c. ?? Nahita [ ny...mpianatra hamaky boky ] ny...vehivavy  
 Pst.AT.see Det student Irr.AT.read book Det woman  
 (‘The woman saw the student going to read a book’)

Since the verb in the IPVC-predicate carries tense inflection, I will assume that IPVCs include a TP layer whose T head bears a tense feature and Case-licenses the subject in SpecAspP (cf. the structure in (10) above). Evidence that IPVCs include a TP layer is presented in section 5.1. To account for the tense-matching requirement, I will assume that the [T] feature in the IPVC is uninterpretable, and is valued by entering into a control-type relation with the [T] feature in the higher clause. IPVCs may thus be regarded as ‘syntactically finite’, in that they include a T head which Case-licenses the subject, but ‘semantically non-finite’, in that they lack independent tense specification. In the next section I propose an analysis of word order in IPVCs which links this absence of tense specification to the absence of predicate raising.

### 3.2. Predicate Raising and the Left Periphery

As noted in the introduction, I am arguing here that IPVCs, whose triggers precede the predicate, reflect the underived constituent order in Malagasy. Predicate-initial order in root clauses and clauses headed by *fa* is derived through an operation which raises the predicate phrase to a specifier position above that of the trigger.

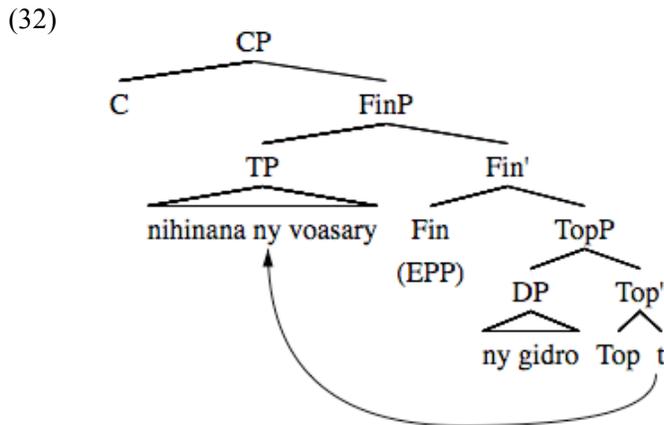
Based on the fact that IPVCs denote events rather than propositions, I adopt the following implementation of this analysis. As discussed in 2.1, I assume that the trigger is spelled out in a left-peripheral position, the specifier of TopP. The Top head selects TP (the predicate phrase, containing a null operator) as its complement, and establishes a predication relation between the entity denoted by the trigger and the property denoted by TP. In propositional clauses, the predicate phrase is spelled out in a position to the left of the trigger and to the right of complementizers such as *fa*. Assuming *fa* is located in the C head, the left periphery must thus include an additional functional layer between CP and TopP. I provisionally associate this layer with (semantic) finiteness, and label the projection FinP. The hierarchy of projections is shown in (30):<sup>9</sup>

- (30) [CP C [FinP Fin [TopP Trigger<sub>i</sub> [Top' Top [TP OP<sub>i</sub> ... ]]]]]

<sup>9</sup> Rizzi (1997), from whom I borrow the Fin category, locates FinP below TopP rather than above it. For Rizzi, SpecTopP is the position of left-dislocated topics in Italian, which precede non-finite complementizers (located in Fin) in embedded contexts. However, although I analyze triggers in Malagasy as dislocated topics, I do not assume that they have the same structural status as dislocated topics in Italian; thus the projection I label TopP is presumably not the same as Rizzi’s TopP. Italian topics are optional and stackable, and can be of various categories, whereas in Malagasy every clause includes one and only one trigger, which must be a DP or embedded clause (suggesting that the Malagasy Top head includes an EPP feature and a [D] feature). In addition, dislocated topics in Italian have a contrastive or scene-setting function, whereas the Malagasy trigger is interpreted as the theme in a theme-rheme structure.

To derive predicate-initial order, I assume that the Fin head probes the [T] feature on the T head, establishing an Agree relation.<sup>10</sup> I further assume that Fin in Malagasy includes an EPP requirement, so that when Fin probes T, this leads TP to re-merge as the specifier of FinP. The tree in (32) below illustrates this derivation for the predicate-initial clause in (31).

- (31) ... (fa) nihinana ny voasary ny...gidro  
 Comp Pst.AT.eat Det orange Det lemur  
 ‘... (that) the lemur was eating the orange’



I claim that it is the absence of TP raising to SpecFinP which leads to trigger-predicate order in IPVCs. But what prevents TP from raising? I propose that IPVCs have a ‘truncated’ left periphery which does not include a FinP projection. Presumably the CP projection is also absent, given that IPVCs are not introduced by a complementizer. IPVCs are thus TopP clauses. In the absence of a Fin head to probe and attract it, TP remains in its initial position as sister to the Top head, resulting in the trigger-predicate order characteristic of this clause type.<sup>11</sup>

I suggest that the absence of FinP (and CP) also results in the IPVC being interpreted as an event rather than a proposition, despite having a tensed Case-checking T head. Perhaps in full clauses the Fin head must value the [T] feature on T in order to temporally anchor the event denoted by TopP relative to the utterance time or other reference time (cf. Chomsky 2008, who proposes that the T head inherits its interpretable tense feature from the higher C-domain). In the absence of a FinP layer, the [T] feature on T is instead valued by entering into a kind of control relation with a [T] feature in the higher clause, resulting in an interpretation where the time of the IPVC event necessarily overlaps the time of the perception event (see Felser 1999 for a similar approach to the interpretation of direct perception constructions in English). This control relation manifests itself in the matching requirement discussed in 3.1, whereby the verb in the IPVC must bear the same tense morphology as the verb in the higher clause.

<sup>10</sup> Possible cross-linguistic evidence for an Agree relation between Fin and T comes from languages like Irish, where finite complementizers inflect for tense in agreement with the tense on the verb (McCloskey 1996). Assuming the hierarchy of projections in (30), inflected complementizers might result from raising of the Fin head to merge with C.

<sup>11</sup> In Pearson (2001) I suggest that TP-raising in Malagasy is essentially the phrasal movement analog of finite V-raising into the left periphery in languages like Icelandic, which exhibits (both root and embedded) verb-second order. Under the analysis espoused here, TP-raising and finite V-raising would be different reflexes of the same probe-goal relation between the T head and the Fin head. See Pearson (2001) and Travis (2006) for different accounts of why Malagasy exhibits phrasal movement into the C-domain where other languages have head movement.

From this perspective, the contrast between semantically finite clauses (with TP raising) and semantically non-finite clauses (with no TP raising) is reminiscent of what we find in many V-movement languages, where the verb surfaces in a lower head position in non-finite clauses than in finite clauses. For instance, Pollock (1989) shows that infinitives in French are spelled out below negation while finite verbs raise to a position above negation. Likewise in Irish, root clauses and finite embedded clauses have VSO order, while non-finite embedded clauses exhibit SOV or SVO order (depending on dialect) due to the lower position of the verb (Bobaljik and Carnie 1996).

Note that trigger-predicate order is not confined to complements of perception verbs, but also occurs in at least one other type of embedded clause which arguably lacks an independent tense specification, namely the clausal complement of the preposition *amin-* ‘with/at’ (past tense form *tamin-*). Among other roles, *amin-* phrases can express temporal location (e.g., *amin’ ny alarobia* ‘on Wednesday’). The selection of a complement clause by *amin-* is illustrated in (33a) (where the *amin-* phrase is extraposed to the right of the matrix trigger); (33b) gives the corresponding root clause for comparison. The complement of *amin-* in (33a) expresses an eventuality which temporally overlaps the eventuality named by the matrix clause. As in the case of IPVCs, I assume that *amin-* selects a TopP clause complement whose event argument is controlled by the event argument of the higher clause. For reasons of space I leave a full consideration of this construction for future research (but see section 6.1, footnote 28).

- (33) a. Mbola tanora Rasoa [ tamin’ [ izy nipetraka tany Antsirabe ] ]  
 still young Rasoa Pst.at 3Nom Pst.AT.live Pst.there Antsirabe  
 ‘Rasoa was still young when she was living in Antsirabe’  
 b. Nipetraka tany Antsirabe izy  
 Pst.AT.live Pst.there Antsirabe 3Nom  
 ‘She was living in Antsirabe’

An additional context for inverted order involves newspaper headlines. Paul (to appear) observes that Malagasy headlines frequently show trigger-initial order (or “SVO order”, as she calls it, using the traditional label SUBJECT to refer to the trigger). One of the examples she cites is given in (34), from *l’Express de Madagascar*. Following work on ‘headlines’ in other languages, Paul proposes that trigger-initial headlines are reduced clauses. In particular, she argues that they are truncated above TP, and thus lack the functional head that probes the predicate and causes it to raise over the trigger. Although our accounts differ in certain respects, Paul’s analysis of headlines parallels my analysis of IPVCs in attributing trigger-predicate order to a reduced clause structure.

- (34) Lehilahy nangalatra bisikileta  
 man Pst.AT.steal bicycle  
 ‘Man stole bicycle’

Having outlined a formal account of predicate raising, and its absence in temporally dependent clauses, I now provide empirical support for my analysis by considering the syntactic properties of the IPVC construction in more detail. In section 4 I lay out the evidence for treating IPVCs as (non-remnant) constituents. I also show that these constituents are complement clauses denoting an event—rather than, say, DPs denoting an individual. In section 5 I provide arguments for locating the IPVC-trigger in the same position (SpecTopP) as the trigger of a predicate-initial clause, rather than in some lower or higher position, leading to the conclusion that trigger-predicate order in IPVCs is due to the absence of predicate raising.

#### 4. IPVCs As Complement Clauses

In this section I offer support for the claim that what I identify as IPVCs are indeed complement clauses selected by the perception verb. In 4.1 I provide evidence that the IPVC is a (non-remnant) constituent, and that the DP which I identify as the IPVC-trigger is contained within this constituent rather than occupying the object position of the higher clause (i.e., the IPVC construction does not involve object control or raising to object). In 4.2 I show that IPVCs are clausal complements rather than DPs.

##### 4.1. Evidence That IPVCs Are Constituents

I noted above that the Malagasy IPVC construction is semantically comparable to the ACC-ing PVC construction in English, illustrated in (35), in that both express direct perception of an event.

- (35) The woman saw the student reading the book

The ACC-*ing* construction has been discussed by Declerck (1982), Dik and Hengefeld (1991), Safir (1993), and Felser (1999), among others, as have similar event perception constructions in other languages (Guasti 1993, Cinque 1995, Felser 1999). As many of these authors have pointed out, sentences like (35) can be several-ways ambiguous. Under one reading, *see* selects a non-finite complement clause of which *the student* is the subject. Under another reading, *see* selects the DP *the student* as its direct object, and *reading a book* functions as an object-controlled participial clause, a kind of temporal modifier or depictive secondary predicate. Under the former reading, (35) might be paraphrased ‘The woman saw the event of the student reading the book’, while under the latter reading it could be paraphrased ‘The woman saw the student while the student was reading the book’. (A third possibility is that *see* selects the DP *the student reading the book*, where *reading the book* is a reduced relative clause modifying *student*. I return to this option in section 4.2.)

There are several possible structures to consider, which differ from one another primarily in the status of the DP *the student*. Under the interpretation where the woman saw the event of the student reading, the perception verb selects a clausal complement of some sort, of which *the student* is the subject. This subject might remain within the embedded clause while checking its Case feature in an Agree relation with a head in the superordinate clause (ECM):

(36) [VP saw [Clause the student reading the book ] ]

Alternatively, the embedded subject might raise into the higher clause in order to check Case, as in (37) (raising to object). For the sake of illustration, I show the embedded subject targeting the specifier of the matrix VP, with subsequent raising of the verb to *v*, though other options are possible (see Postal 1974, Johnson 1991, Lasnik and Saito 1991, and Runner 1998 for different approaches to raising to object).

(37) [<sub>VP</sub> saw<sub>i</sub> [<sub>VP</sub> the student<sub>j</sub> [<sub>V</sub> t<sub>i</sub> [Clause t<sub>j</sub> reading the book ] ] ] ]

Under the reading of (35) where the woman saw the student while the student was reading, *the student* originates as the object of *saw* and controls a PRO subject within the depictive clause. As with the event perception reading, there are various structures we could consider. One possibility is shown in (38). Here the depictive clause merges as the complement of *see*, while the object merges as the specifier of VP, with subsequent movement of V to *v*. Alternatively, *the student* might merge as the complement of *see* while the depictive clause adjoins to VP, *v*P, or some higher projection.

(38) [<sub>VP</sub> saw<sub>i</sub> [<sub>VP</sub> the student<sub>j</sub> [<sub>V</sub> t<sub>i</sub> [Clause PRO<sub>j</sub> reading the book ] ] ] ]

These structures differ from one another with regard to constituency. In (36) the string *the student reading a book* forms a clausal constituent at spell-out. In (37) and (38), by contrast, *the student* and *reading a book* form a VP remnant following V-to-*v* movement. In the latter structures, *the student* is spelled out in the matrix clause and behaves as the object of *saw*, either a derived object which binds a trace in the embedded clause (37) or a thematic object which controls a PRO in the embedded clause (38).

In light of the structural ambiguity of the English ACC-*ing* construction, consider again its semantic counterpart in Malagasy:

(39) Nahita ny mpianatra namaky ny boky ny...vehivavy.  
Pst.AT.see Det student Pst.AT.read Det book Det woman  
‘The woman saw the student reading the book’

So far I have assumed that (39) has a structure along the lines of (36), where *ny mpianatra namaky ny boky* ‘the student reading the book’ is a complement clause selected by the perception verb *hita* ‘see’. However, alternative analyses for (39) are suggested by the structures in (37) and (38). On analogy with (37), we might postulate that the V head *hita* takes a complement clause whose trigger raises into the object position of the higher clause. Alternatively, (39) might have a structure like (38), where *hita* selects the DP *ny mpianatra* ‘the student’ as its object, with *namaky ny boky* ‘reading the book’ acting as a temporal modifier—in which case (39) actually means ‘The woman saw the student while the student was reading the book’. These alternatives are diagrammed in (40a,b):

- (40) a. [ nahita ny mpianatra<sub>i</sub> [Clause namaky ny boky t<sub>i</sub> ] ] ...  
 b. [ nahita ny mpianatra<sub>i</sub> [Clause namaky ny boky PRO<sub>i</sub> ] ] ...

In both of these structures, *ny mpianatra* is the object of the perception verb, and is coindexed with an empty category (trace or PRO) located in the embedded trigger position. If the embedded trigger is an empty category, there is of course no way to know if it precedes or follows the embedded predicate (I show it following the embedded predicate in (40), as predicted by the right-specifier analysis in (3)). In that case, the IPVC construction would fail to provide evidence for the existence of truncated clauses with trigger-initial order, as predicted by the predicate-raising analysis. I must therefore rule out the alternative structures in (40) if I am to argue for the analysis in 3.2.

Initial support for treating *ny mpianatra* in (39) as the (thematic or derived) object of *hita* seems to come from how this constituent is case-marked. Recall from 2.2 that pronouns and proper names have distinct nominative and accusative m-case forms. When *ny mpianatra* in (39) is replaced by a pronoun or proper name, the latter takes the accusative form, as shown in (41), rather than the nominative form we might expect for the trigger of an embedded clause.

- (41) a. Nahita *any* namaky ny boky ny...vehivavy  
 Pst.AT.see 1exAcc Pst.AT.read Det book Det woman  
 ‘The woman saw us reading the book’  
 b. Nahita *an-dRakoto* namaky ny boky ny...vehivavy  
 Pst.AT.see Acc-Rakoto Pst.AT.read Det book Det woman  
 ‘The woman saw Rakoto reading the book’

Suggestive though the m-case data is, I will nevertheless show that a structure along the lines of (40) cannot be the only available option. Instead, there must be a structure for sentences like (39) and (41) where in *ny mpianatra*, *any*, and *an-dRakoto* occupy the embedded trigger position.<sup>12</sup>

- (42) a. Nahita [TopP [Trigger ny mpianatra] namaky ny boky ] ny vehivavy  
 b. Nahita [TopP [Trigger any] namaky ny boky ] ny vehivavy  
 c. Nahita [TopP [Trigger an-dRakoto] namaky ny boky ] ny vehivavy

Note that if (40a) or (40b) were the only possible structure for sentences like (39), then *ny mpianatra* and *namaky ny boky* would either not form a constituent at all, or else form a VP/vP remnant (following verb raising to the T head). However, there is substantial evidence from constituency tests in favor of the structure in (42), where a string like *ny mpianatra namaky ny boky* ‘the student reading the book’ behaves as a single non-remnant constituent. I review this evidence below and in section 5.

Of course, the fact that the IPVC-trigger takes the accusative form in (41) requires an explanation. Section 6.1 presents an account of m-case assignment in Malagasy which I believe captures this in a manner consistent with my analysis of the IPVC construction. In the meantime, I will set this issue aside.

One piece of evidence for the structure in (42) is shown in (43b) and (44b) below. These sentences demonstrate that *ny mpianatra namaky ny boky* can be made into the trigger of the higher clause by placing the perception verb in the TT form. Examples (43a) and (44a) give the AT counterparts for compari-

<sup>12</sup> It is likely that a structure like (40b), where *ny mpianatra* is the thematic object of the perception verb while *namaky ny boky* functions as a depictive modifier, is also available. Consider (i) below, which shows that *ny mpianatra* can act as the matrix trigger of a TT clause while *namaky ny boky* remains inside the predicate phrase (as indicated by the position of the question particle *ve*). Crucially, (i) and sentences like it express perception of an individual and lack an event perception reading.

- (i) Hitan’ ny vehivavy [ namaky ny boky ] (ve) ny...mpianatra  
 TT.see.Gen Det woman Pst.AT.read Det book Det student  
 ‘The student was seen reading the book by the woman’

The construction in (i) does not provide evidence for or against the existence of trigger-initial clauses, and therefore has no bearing on the question of whether predicate-initial order is derived by predicate raising. For reasons of space, I will set this construction aside and focus on cases where strings like *ny mpianatra namaky ny boky* can be shown to behave as constituents.

son. That the IPVC is outside the matrix predicate phrase in (43b) and (44b) is shown by the position of the question particle *ve*.

- (43) a. Nahita [ ny...mpianatra namaky boky ] (ve) ny...vehivavy  
 Pst.AT.see Det student Pst.AT.read book Det woman  
 ‘The woman saw the student reading a book’  
 b. Hitan’ ny vehivavy (ve) [ ny...mpianatra namaky boky ]  
 TT.see.Gen Det woman Det student Pst.AT.read book  
 ‘The woman saw the student reading a book’
- (44) a. Nahare [ ny...vehivavy niditra tao an-trano ] (ve) Rakoto  
 Pst.AT.hear Det woman Pst.AT.enter in.there Obl-house Rakoto  
 ‘Rakoto heard the woman enter the house’  
 b. Ren-dRakoto (ve) [ ny...vehivavy niditra tao an-trano ]  
 TT.hear.Gen-Rakoto Det woman Pst.AT.enter in.there Obl-house  
 ‘Rakoto heard the woman enter the house’

The trigger position must be occupied by a single constituent; hence the acceptability of (43b) and (44b) supports treating the bracketed strings in these sentences as constituents. Moreover, the fact that ‘see’ and ‘hear’ appear in TT voice in these sentences strongly suggests that these constituents are selected as complements of the perception verb.

Further evidence of constituency comes from the examples in (45), which show that an IPVC can be pseudo-clefted. The perception verb is again in the TT voice. Recall from 2.2 that in the pseudo-cleft construction, the focused constituent occurs at the left edge of the clause and functions as the main predicate, while the constituent denoting the presupposition (introduced by the particle *no*) acts as the trigger of the clause. Since only one constituent at a time can be pseudo-clefted, the examples in (45) provide strong support for the claim that IPVCs are single constituents.

- (45) a. [ Ny...mpianatra namaky boky ] (ve) no hitan’..... ny...vehivavy  
 Det student Pst.AT.read book Foc TT.see.Gen Det woman  
 ‘The student reading a book is what the woman saw’  
 b. [ Ny...vehivavy niditra tao an-trano ] (ve) no...ren-dRakoto  
 Det woman Pst.AT.enter in.there Obl-house Foc TT.hear.Gen-Rakoto  
 ‘The woman entering the house is what Rakoto heard’

Further examples where the IPVC is a trigger or pseudo-clefted constituent are given in (46)-(47). Here we see that when the IPVC-trigger is a pronoun or proper name, it appears in the nominative form rather than the accusative (contrast (46)-(47) with (41) above). I return to this fact in section 6.1.

- (46) a. Hitan-dRasoa [ izahay namaky boky ]  
 TT.see.Gen-Rasoa 1exNom Pst.AT.read book  
 ‘Rasoa saw us reading books’  
 b. Hitan-dRasoa [ Rakoto namaky boky ]  
 TT.see.Gen-Rasoa Rakoto(Nom) Pst.AT.read book  
 ‘Rasoa saw Rakoto reading a book’
- (47) a. [ Izahay namaky boky ] no hitan-dRasoa  
 1exNom Pst.AT.read book Foc TT.see.Gen-Rasoa  
 ‘Us reading books is what Rasoa saw’  
 b. [ Rakoto namaky boky ] no hitan-dRasoa  
 Rakoto(Nom) Pst.AT.read book Foc TT.see.Gen-Rasoa  
 ‘Rakoto reading a book is what Rasoa saw’

The data in (43)-(47) not only show that the IPVC is a constituent, but also provide clues as to its category. Earlier I noted that only DPs and embedded clauses can be triggers. Likewise, Paul (2000) and others have shown that DPs and embedded clauses, along with certain classes of adverbs and PP adjuncts, are

the only categories of constituents that can undergo pseudo-clefting.<sup>13</sup> This suggests that IPVCs are either complement clauses or DP constituents (I compare these possibilities in 4.2 below). It does not appear that VP/vP remnant constituents can be pseudo-clefted or act as the trigger of a clause.<sup>14</sup>

For comparison, consider the so-called RAISING TO OBJECT construction discussed by Keenan (1976), Paul and Rabaovololona (1998), and others, and illustrated in (48a) below. Here the italicized DP is interpreted as a thematic argument of the embedded predicate (introduced by the particle *ho*), but patterns like the structural object of the higher verb—e.g., it acts as the trigger when the higher verb is in the TT voice, and is thus separated from the embedded predicate (48b). As shown in (48c), the string consisting of the derived object and the embedded predicate cannot be the trigger of the higher clause. Likewise, it is not possible to pseudo-cleft the derived object together with the embedded predicate (48d). (Compare (48c,d) with the grammatical IPVC examples in (43)-(47) above.)

- (48) a. Mihevitra *an-dRaso*a ho namono ny voalavo (ve) *ny...zaza*  
 AT.think Acc-Raso Part Pst.AT.kill Det rat Det child  
 ‘The child believes Raso to have killed the rat’
- b. Heverin’ ny *zaza* ho namono ny voalavo (ve) *Raso*a  
 TT.think Det child Part Pst.AT.kill Det rat Raso  
 ‘Raso is believed by the child to have killed the rat’
- c. \* Heverin’ ny *zaza* (ve) [ *Raso*a ho namono ny voalavo ]  
 TT.think Det child Raso Part Pst.AT.kill Det rat  
 ‘Raso to have killed the rat is believed by the child’
- d. \* [ (*An-d*)*Raso*a ho namono ny voalavo ] *no...heverin’ ny...zaza*  
 (Acc-)Raso Part Pst.AT.kill Det rat Foc TT.think Det child  
 ‘What the child believes is Raso to have killed the rat’

Additional evidence for the constituency of IPVCs comes from coordination. The examples below show that a string consisting of two IPVCs coordinated with *ary* ‘and’ can be the predicate-internal complement of the perception verb (49a), act as the trigger of the higher clause (49b), or be pseudo-clefted (49c):

- (49) a. Nahita [ *ny...mpianatra* namaky boky ] ary [ *ny...zaza* natory ] *aho*  
 Pst.TT.see Det student Pst.AT.read book and Det child Pst.AT.sleep 1sNom  
 ‘I saw the student reading a book and the child sleeping’
- b. Hitako [ *ny...mpianatra* namaky boky ] ary [ *ny...zaza* natory ]  
 TT.see.1sGen Det student Pst.AT.read book and Det child Pst.AT.sleep  
 ‘I saw the student reading a book and the child sleeping’
- c. [ *Ny...mpianatra* namaky boky ] ary [ *ny...zaza* natory ] *no...hitako*  
 Det student Pst.AT.read book and Det child Pst.AT.sleep Foc TT.see.1sGen  
 ‘What I saw is the student reading a book and the child sleeping’

There is also evidence from adverb placement for treating IPVCs as constituents. Consider the negative polarity item *intsony* ‘any more’. The preferred position for *intsony* is at the right edge of the negated predicate phrase. However, it may also precede the direct object if the latter is a definite DP (50a). *Intsony*

<sup>13</sup> Paul (2000:105) notes that subject and complement clauses headed by *fa* cannot be pseudo-clefted. It is unclear why this should be. However, pseudo-clefting is possible for other kinds of embedded clauses. Paul (2000:106) gives the following example featuring a pseudo-clefted purpose clause (being an adjunct, it triggers CT voice on the verb in the *no*-phrase):

(i) [ Mba hahazo karama be ] *no...ianarako...mafy*  
 in.order Irr.AT.get salary big Foc CT.study.1sGen hard  
 ‘It’s in order to get a big salary that I am studying hard’

<sup>14</sup> This is difficult to verify conclusively, given that there are no agreed-upon tests for VP or vP (remnant) constituents in Malagasy. We might note that while either internal argument of a ditransitive verb can be pseudo-clefted, it is not possible to pseudo-cleft a string consisting of both internal arguments. Likewise either internal argument can act as the trigger of the clause (if it is a DP), but the trigger cannot be a string comprised of both arguments. Such a string would plausibly constitute a VP or vP remnant, assuming a structure for ditransitive predicates along the lines of Larson (1988).

can also precede or follow an indirect object (50b) or the embedded predicate in the raising to object construction (50c):<sup>15</sup>

- (50) a. Tsy mijery <intsony> an-dRabe sy Rakoto <intsony> aho  
 Neg AT.watch any.more Acc-Rabe and Rakoto any.more 1sNom  
 ‘I am not watching Rabe and Rakoto any more’
- b. Tsy manome voninkazo <intsony> ho an-dRabe <intsony> aho  
 Neg AT.give flower any.more to Acc-Rabe any.more 1sNom  
 ‘I am not giving flowers to Rabe any more’
- c. Tsy mihevitra an-dRasoana <intsony> ho tsara tarehy <intsony> Rabe  
 Neg AT.think Acc-Rasoana any.more Part good appearance any.more Rabe  
 ‘Rabe no longer believes Rasoana to be pretty’

In (51) below, where *mijery* ‘watch’ selects an IPVC as its complement, we see that the DP I identify as the IPVC-trigger may not be separated from the following predicate by a matrix adverb (51b). Instead, the preference is for *intsony* to come after the IPVC (51c), although it can also come right after the matrix verb (51a).<sup>16</sup> Example (51b) contrasts with (50b,c), which show that *intsony* can intervene between a derived/thematic object DP and another VP-internal constituent. This contrast supports my claim that *an-dRabe sy Rakoto* in (51) neither originates as the object of the perception verb nor raises into the object position.

- (51) a. ? Tsy mijery intsony [ an-dRabe sy Rakoto milalao baolina ] aho  
 Neg AT.watch any.more Acc-Rabe and Rakoto AT.play ball 1sNom  
 ‘I am not watching Rabe and Rakoto playing ball any more’
- b. \* Tsy mijery [ an-dRabe sy Rakoto ] intsony [ milalao baolina ] aho  
 Neg AT.watch Acc-Rabe and Rakoto any.more AT.play ball 1sNom  
 ‘I am not watching Rabe and Rakoto playing ball any more’
- c. Tsy mijery [ an-dRabe sy Rakoto milalao baolina ] intsony aho  
 Neg AT.watch Acc-Rabe and Rakoto AT.play ball any.more 1sNom  
 ‘I am not watching Rabe and Rakoto playing ball any more’

Further evidence against the structures in (40) is presented in section 5. There I show that: (i) unlike objects, IPVC-triggers cannot be locally A-bound by a higher subject, and (ii) IPVC-triggers pattern with matrix triggers rather than objects with regard to the distribution of in-situ wh-elements. Taken together, these facts show that the IPVC-trigger is not the direct object of the perception verb at any point in the derivation; instead, its highest position is internal to the embedded clause.

Having demonstrated that the IPVC is a single constituent selected by the perception verb, I now consider in more detail what its category is. As I noted above, the fact that IPVCs can be pseudo-clefted and function as triggers suggests that they are either embedded clauses or DPs. In the next section I show that, under the relevant event perception construal, they pattern as clauses and not as DPs.

#### 4.2. IPVCs Are Clauses, Not DPs

Consider again our example of the English ACC-*ing* construction, repeated below:

- (52) The woman saw the student reading the book

As Declerck (1982) and Felser (1999) note, even if we restrict our attention to structures where *the student reading the book* acts as a (non-remnant) constituent, (52) is still ambiguous between a reading where the sentence expresses perception of an event and a reading where it expresses perception of an individual. Under the former interpretation, *see* selects a non-finite complement clause with *the student* as

<sup>15</sup> Thanks to an anonymous reviewer for providing the examples in (50b,c).

<sup>16</sup> Some speakers I consulted allow (51b) if *intsony* is preceded and followed by a pause, in which case it presumably acts as a parenthetical element. Absent this intonation, speakers agreed that (51b) is noticeably worse than (51a) or (51c).

its subject (53a). Under the latter interpretation, *see* selects a DP within which *reading the book* is a reduced relative clause modifying *student* (53b).

- (53) a. The woman saw [<sub>Clause</sub> the student reading the book ] (event reading)  
 b. The woman saw [<sub>DP</sub> the student [<sub>Rel</sub> reading the book ] ] (individual reading)

As in English, relative clauses in Malagasy follow the noun they modify, and do not require a complementizer or overt marker of relativization. Moreover, the verb in the relative clause inflects for voice according to the grammatical function of the relativized noun: if the subject is relativized, the verb carries AT marking; if the object is relativized, the verb carries TT marking, and so on (Keenan 1976). The following sentences include examples of DPs containing relative clauses:

- (54) a. Fantan-dRabe [<sub>DP</sub> ny mpianatra [<sub>Rel</sub> namaky ny boky ] ]  
 TT.know.Gen-Rabe Det student Pst.AT.read Det book  
 ‘Rabe knows the student who was reading the book’  
 b. Eo ambonin’ ny latabatra [<sub>DP</sub> ny boky [<sub>Rel</sub> novakin’ ny mpianatra ] ]  
 there on.top.Gen Det table Det book Pst.TT.read Det student  
 ‘The book that the student was reading is on the table’

The DPs in (54) look identical to strings such as the one bracketed in (55a) below. In both cases a nominal is followed by a predicate whose verb inflects for voice according to the syntactic role that the nominal bears with respect to that predicate. Perhaps, then, IPVCs should not be analyzed as trigger-initial TopP clauses (55b), but instead as DPs containing a relative clause (55c). Under the latter analysis, (55a) really means ‘Rabe saw the student who was reading the book’. Crucially, if (55c) were the only possible structure for sentences like (55a), then IPVCs would not be trigger-initial clauses, and would therefore have no bearing on the question of whether predicate-initial order in root and *fa* clauses is derived through predicate raising.

- (55) a. Hitan-dRabe [ ny mpianatra namaky ny boky ]  
 TT.see.Gen-Rabe Det student Pst.AT.read Det book  
 ‘Rabe saw the student reading the book’  
 b. Hitan-dRabe [<sub>TopP</sub> [<sub>Trigger</sub> ny mpianatra ] [<sub>TP</sub> namaky ny boky ] ]  
 c. Hitan-dRabe [<sub>DP</sub> ny mpianatra [<sub>Rel</sub> namaky ny boky ] ]

In fact, there is substantial data showing that the structures in (55b) and (55c) are both available. In other words, (55a) exhibits essentially the same ambiguity as its English counterpart in (52)/(53). Although the bracketed constituent in (55a) can be shown to behave as a DP in certain cases, this cannot be the only structure available, since in other cases it demonstrably patterns as a clause.

To begin with, note that if (55c) were the only possible structure, the sentence would necessarily denote perception of an individual involved in an event rather than perception of the event itself. However, there is good evidence that the bracketed string in (55a) can indeed refer to an event. Consider the pronominal/demonstrative element *izany* ‘that’. *Izany* generally picks out an abstract referent: e.g., it can refer back to a previously mentioned event, proposition, or utterance. However, it cannot have a human referent. In this respect *izany* contrasts with the third person pronoun *azy*. Thus (56a) is acceptable, whereas (56b), with *izany* taking *ny zaza* ‘the child’ as its discourse antecedent, is anomalous:

- (56) a. Nahita ny zaza<sub>i</sub> aho, ary nahita azy<sub>i</sub> koa Rabe  
 Pst.AT.see Det child 1sNom and Pst.AT.see 3Acc also Rabe  
 ‘I saw the child, and Rabe saw her/him too’  
 b. # Nahita ny zaza<sub>i</sub> aho, ary nahita izany<sub>i</sub> koa Rabe  
 Pst.AT.see Det child 1sNom and Pst.AT.see that also Rabe  
 ‘I saw the child, and Rabe saw that too’

The examples below show that if *ny zaza* in (56) is replaced with *ny zaza nitomany*, the latter can act as antecedent for either *azy* or *izany*. In the former case *ny zaza nitomany* refers to the child, while in the

latter case it refers to the event of the child crying, as the sentence glosses in (57a,b) indicate. I claim that *ny zaza nitomany* is a DP in (57a), while in (57b) it is an embedded clause of category TopP: an IPVC.

- (57) a. Nahita [ ny zaza nitomany ]<sub>i</sub> aho, ary nahita azy<sub>i</sub> koa Rabe  
 Pst.AT.see Det child Pst.AT.cry 1sNom and Pst.AT.see 3Acc also Rabe  
 ‘I saw the crying child, and Rabe saw her/him too’
- b. Nahita [ ny zaza nitomany ]<sub>i</sub> aho, ary nahita izany<sub>i</sub> koa Rabe  
 Pst.AT.see Det child Pst.AT.cry 1sNom and Pst.AT.see that also Rabe  
 ‘I saw the child crying, and Rabe saw that (event) too’

In the case of (57a), according to my consultants, Rabe need not have witnessed the crying event, since here *nitomany* ‘cried’ functions as a relative clause modifying *zaza* ‘child’ and has an independent tense specification. On the other hand, (57b) entails that Rabe witnessed the crying event as it was happening. One consequence of this difference is that the tense matching requirement discussed in 3.1 does not apply when *ny zaza nitomany* is a DP: sentences like (58a,b) are grammatical, but can only denote perception of an individual, not perception of an event.

- (58) a. Nahita [ ny zaza mitomany ] aho  
 Pst.AT.see Det child AT.cry 1sNom  
 ‘I saw the child who is (now) crying’
- b. Mahita [ ny zaza nitomany ] aho  
 AT.see Det child Pst.AT.cry 1sNom  
 ‘I see the child who was crying’

There is substantial evidence showing that IPVCs pattern differently from DPs in their syntactic properties. For example, while an IPVC can have a proper name as its trigger, a proper name cannot be modified by a (restrictive) relative clause. Compare the sentences below: (59a) is acceptable because the bracketed constituent can be interpreted as a clause denoting an event. In (59b), the choice of matrix verb (‘visit’) rules out an event interpretation for the bracketed constituent, and the sentence is marginal at best.

- (59) a. Hitan’ ny zaza [ Rabe namaky boky ]  
 TT.see.Gen Det child Rabe Pst.AT.read book  
 ‘The child saw Rabe reading a book’
- b. ?\*Novangian’ ny zaza [ Rabe namaky boky ]  
 Pst.TT.visit Det child Rabe Pst.AT.read book  
 ‘The child visited Rabe (who was) reading a book’

Additional evidence that IPVCs are distinct from DPs comes from coordination. Malagasy has various connectives for expressing conjunction (‘and’), among which are *ary* and *sy*. Some speakers appear to use *sy* and *ary* interchangeably, but for most the choice is dictated by the category of the conjuncts: *ary* is used primarily for conjoining clauses (60) while *sy* is used only for conjoining constituents other than clauses (61). In (61a) *sy* conjoins two predicate phrases which share a trigger, while in (61b) two DPs are conjoined with *sy*. *Ary* is strongly dispreferred for conjoining predicates and DPs.

- (60) Mamaky boky Raso<sub>a</sub> { *ary* / \**sy* } misotro dite Rakoto  
 AT.read book Raso<sub>a</sub> and AT.drink tea Rakoto  
 ‘Raso<sub>a</sub> is reading a book and Rakoto is drinking tea’
- (61) a. Mamaky boky { *sy* / ?\**ary* } misotro dite Rakoto  
 AT.read book and AT.drink tea Rakoto  
 ‘Rakoto is reading a book and drinking tea’
- b. Manoratra taratasy Raso<sub>a</sub> { *sy* / ?\**ary* } Rakoto  
 AT.write letter Raso<sub>a</sub> and Rakoto  
 ‘Raso<sub>a</sub> and Rakoto are writing letters’

When two IPVCs are conjoined, the speakers I consulted expressed a strong preference for *ary* over *sy*, as shown in (62) (constituents beginning with proper names were chosen in order to force the event perception reading associated with the IPVC construction: cf. (59) above). With regard to coordination, then, IPVCs clearly pattern with clauses (60) rather than with DPs (61b).

- (62) Hitako [ Rasoa mamaky boky ] { *ary* / ??*sy* } [ Rakoto misotro dite ]  
 TT.see.1sGen Rasoa AT.read book and Rakoto AT.drink tea  
 ‘I see Raso reading a book and Rakoto drinking tea’

Compare (62) with (63) below, where the choice of matrix verb (‘know’ rather than ‘see’) precludes interpreting the bracketed constituents as IPVCs; instead they must be DPs containing relative clauses. *Sy* is the preferred coordinator in (63), just as in (61b) above. The contrast between (62) and (63) shows that the preference for *ary* in (62) is not an effect of, say, the length or internal complexity of the conjoined constituents. Rather, the choice of connective is strictly a matter of the category of the conjoined constituents: clause versus DP.

- (63) Fantatro [ ny vehivavy mamaky boky ] { *sy* / ??*ary* } [ ny zaza misotro dite ]  
 TT.know.1sGen Det woman AT.read book and Det child AT.drink tea  
 ‘I know the woman (who is) reading a book and the child (who is) drinking tea’

More evidence for differentiating IPVCs from DPs comes from determiner placement. Demonstrative determiners in Malagasy such as *io* ‘this’, *ireo* ‘these’, and *iretsy* ‘those’ are normally repeated before and after the noun: e.g., *iretsy boky iretsy* ‘those books’ (lit. ‘those book those’). This is the so-called FRAMING DEMONSTRATIVE construction. Crucially for our purposes, the second copy of the demonstrative always appears at the right edge of the DP, regardless of how prosodically heavy that DP is. In particular, the second copy must follow a (restrictive) relative clause. Compare:

- (64) a. *iretsy* boky [<sub>Rel</sub> novakin’ ny mpianatra tany an-tokotany ] *iretsy*  
 those book Pst.TT.read Det student there Obl-garden those  
 ‘those books that the students were reading in the garden’  
 b. \* *iretsy* boky *iretsy* [<sub>Rel</sub> novakin’ ny mpianatra tany an-tokotany ]  
 those book those Pst.TT.read Det student there Obl-garden  
 ‘those books that the students were reading in the garden’

Consider, then, the bracketed constituent in (65a) below. If this is a nominal constituent in which *namaky boky* is a relative clause modifying *mpianatra*, as diagrammed in (65b), then *namaky boky* is inside the DP headed by the determiner *ny*. On the other hand, if the bracketed constituent is an IPVC—that is, if *namaky boky* is the TP predicate of a TopP clause taking *ny mpianatra* as its trigger, as in (65c)—then *namaky boky* is outside the DP headed by *ny*. In other words, the structures differ in where the right edge of the DP is: after *boky* in (65b) and after *mpianatra* in (65c).

- (65) a. Hitan-dRabe [ ny mpianatra namaky boky ]  
 TT.see.Gen-Rabe Det student Pst.AT.read book  
 ‘Rabe saw the student reading a book’  
 b. [<sub>DP</sub> ny mpianatra [<sub>Rel</sub> namaky boky ] ]  
 c. [<sub>TopP</sub> [<sub>DP</sub> ny mpianatra ] [<sub>TP</sub> namaky boky ] ]

Suppose that (65b) were the only available structure for the bracketed constituent in (65a): we would predict that if *ny* were replaced by a framing demonstrative, the second copy of the demonstrative would necessarily come after *namaky boky*. On the other hand, if the clausal structure in (65c) is also available, there should be an alternate order where the second copy of the demonstrative precedes *namaky boky*. The examples below show that the latter prediction is borne out: the demonstrative can occur in either position. As expected, the position of the demonstrative correlates with how the sentence is interpreted: (66a) means that Rabe saw a group of individuals, those students, who may or may not have been reading at the time when he saw them, whereas (66b) can only mean that Rabe witnessed the reading event itself.

- (66) a. Hitan-dRabe [DP *iretsy mpianatra namaky* ..... *boky iretsy* ]  
 TT.see.Gen-Rabe those student Pst.AT.read book those  
 ‘Rabe saw those students who were reading books’
- b. Hitan-dRabe [TopP *iretsy mpianatra iretsy namaky boky* ]  
 TT.see.Gen-Rabe those student those Pst.AT.read book  
 ‘Rabe saw (the event of) those students reading books’

It can be shown that the bracketed string in (66b) behaves as a constituent with respect to the various tests discussed in 4.1. For instance, it can be pseudo-clefted (67). Likewise, (68) shows that *iretsy ankizy iretsy* ‘those children’ cannot be separated from the following predicate by the matrix adverb *intsony*.

- (67) [ *Iretsy mpianatra iretsy namaky boky* ] *no hitan-dRabe*  
 those student those Pst.AT.read book Foc TT.see.Gen-Rabe  
 ‘What Rabe is saw is (the event of) those students reading books’
- (68) a. ? Tsy mijery *intsony* [ *iretsy ankizy iretsy milalao baolina* ] *aho*  
 Neg AT.watch any.more those children those AT.play ball 1sNom  
 ‘I am not watching those children play ball any more’
- b. ?\*Tsy mijery [ *iretsy ankizy iretsy* ] *intsony* [ *milalao baolina* ] *aho*  
 Neg AT.watch those children those any.more AT.play ball 1sNom  
 ‘I am not watching those children play ball any more’
- c. Tsy mijery [ *iretsy ankizy iretsy milalao baolina* ] *intsony aho*  
 Neg AT.watch those children those AT.play ball any.more 1sNom  
 ‘I am not watching those children play ball any more’

If the bracketed constituent in (66a) is a DP denoting a set of individuals, we predict that it cannot be the antecedent for *izany* ‘that’, which can only have a non-human referent. This is confirmed by (69a) below, which is semantically anomalous (the sentence becomes acceptable if *izany* is replaced with *azy ireo* ‘them’, which can have a plural human referent). In (66b), by contrast, the bracketed constituent denotes an event rather than a group of individuals, and is thus a permissible antecedent for *izany* (69b).

- (69) a. # Nahita [DP *iretsy mpianatra namaky boky iretsy* ]<sub>i</sub> *aho*, ary nahita  
 Pst.AT.see those student Pst.AT.read book those 1sNom and Pst.AT.see  
*izany<sub>i</sub> koa Rabe*  
 that also Rabe  
 ‘I saw those students who were reading books, and Rabe saw that too’
- b. Nahita [TopP *iretsy mpianatra iretsy namaky boky* ]<sub>i</sub> *aho*, ary nahita  
 Pst.AT.see those student those Pst.AT.read book 1sNom and Pst.AT.see  
*izany<sub>i</sub> koa Rabe*  
 that also Rabe  
 ‘I saw (the event of) those students reading books, and Rabe saw that (event) too’

Consider also the examples below, where the question in (70a) asks the addressee to identify one or more children. The sentence in (70b) is a felicitous answer to this question, since the bracketed constituent denotes a group of children. By contrast, (70c) is not a felicitous answer, since here the bracketed constituent denotes an event, as shown by the placement of the framing demonstrative. On the other hand, (70c) would be acceptable as an answer to the question *Inona no hitanao?* ‘What did you see?’

- (70) a. Zaza iza *no hitanao?*  
 child which Foc TT.see.2sGen  
 ‘Which child(ren) did you see?’
- b. [DP *Iretsy zaza nitomany iretsy* ] *no hitako*  
 those child Pst.AT.cry those Foc TT.see.1sGen  
 ‘I saw those crying children’ (ok as an answer to (70a))

- c. [<sub>TopP</sub> *Iretsy zaza iretsy nitomany* ] *no hitako*  
 those child those Pst.AT.cry Foc TT.see.1sGen  
 ‘I saw those children crying’ (# as an answer to (70a))

A final piece of evidence showing that the position of the framing demonstrative correlates with the category of the constituent—DP versus TopP (IPVC)—is given below. At the beginning of this section I noted that relative clauses in Malagasy do not require special marking, and often look superficially like bare predicates following the noun that they modify. However, another option is for the relative clause to be introduced by the operator *izay*. Thus (71) is acceptable as an alternative to (54a) above:

- (71) Fantan-dRabe [<sub>DP</sub> *ny mpianatra [ izay namaky ny boky ]* ]  
 TT.know.Gen-Rabe Det student Rel Pst.AT.read Det book  
 ‘Rabe knows the student who was reading the book’

In light of this, consider again the minimal pair in (66) above. If the bracketed string in (66a) is a DP, within which *namaky boky* is a relative clause modifying *mpianatra*, we predict that inserting *izay* before *namaky boky* should result in a grammatical sentence. By contrast, assuming that (66b) is a TopP clause wherein *namaky boky* is a TP predicated of the trigger *iretsy mpianatra iretsy*, insertion of *izay* before *namaky boky* should be impossible. This prediction is borne out by the contrast between (72) and (73) below, distinguished by the placement of the framing demonstrative *io ... io*. In (72) *namaky boky* is inside the DP containing *mpianatra*, and the interpretation is that Rabe saw this student, who may or may not have been reading a book at the time. Here, including the relative operator *izay* is acceptable. In (73), by contrast, *namaky boky* is outside the DP containing *mpianatra*, and it is understood that Rabe saw the reading event. When *izay* is inserted before *namaky boky* in these sentences, speakers find the resulting sentences to be unacceptable.<sup>17</sup>

- (72) a. Hitan-dRabe [ *io mpianatra ( izay ) namaky boky io* ]  
 TT.see.Gen-Rabe this student Rel Pst.AT.read book this  
 ‘Rabe sees/saw this student (who was) reading a book’  
 b. Nahita [ *io mpianatra ( izay ) namaky boky io* ] *Rabe*  
 Pst.AT.see this student Rel Pst.AT.read book this Rabe  
 ‘Rabe saw this student (who was) reading a book’  
 (73) a. Hitan-dRabe [ *io mpianatra io (?\*izay) namaky boky* ]  
 TT.see.Gen-Rabe this student this Rel Pst.AT.read book  
 ‘Rabe saw this student reading a book’

<sup>17</sup> The facts regarding the distribution of *izay* are not entirely straightforward, however. In apparent contradiction to the judgements in (73), two of the speakers I consulted found sentence (i) below to be fully acceptable. Crucially, though, this sentence does not seem to express direct perception of an event: one speaker who accepted (i) asserted that the children were not necessarily crying when the speaker saw them. I therefore assume that *iretsy zaza iretsy izay nitomany* is a DP and not an IPVC.

- (i) Nahita [ *iretsy zaza iretsy [ izay nitomany ]* ] *aho*  
 Pst.AT.see these child these Rel Pst.AT.cry 1sNom  
 ‘I saw these children (who were) crying’

Substantive work remains to be done on the differences between *izay* relatives and bare relatives. But as far as I have been able to determine, *izay* relatives can function either as restrictive modifiers, which delimit the referent of the noun, or as appositive modifiers, which merely provide additional information about that referent. Relatives without *izay*, by contrast, always seem to be restrictive. It is plausible that appositive relatives in Malagasy merge higher than restrictive relatives—e.g., adjoined to DP rather than inside the complement of D—and that (i) contains an example of an appositive relative. Interestingly, whereas proper names in Malagasy cannot be modified by a bare relative (see (59b) above), they can take an *izay* relative modifier (ii). The contrast between (59b) and (ii) parallels what we find in English and other languages, where proper names can be modified by an appositive relative but not a restrictive relative.

- (ii) Novangian' ny zaza [ *Rabe [ izay namaky boky ]* ]  
 Pst.TT.visit Det child Rabe Rel Pst.AT.read book  
 ‘The child visited Rabe, who was reading a book’

- b. Nahita [ io...mpianatra io (?? izay) namaky boky ] Rabe  
 Pst.AT.see this student this Rel Pst.AT.read book Rabe  
 ‘Rabe saw this student reading a book’

I conclude that while IPVCs look superficially like DPs containing relative clauses, there is substantial evidence for distinguishing the two structures both syntactically and semantically.

Summarizing the results of section 4, I have demonstrated that perception verbs in Malagasy such as *hita* ‘see’ and *re* ‘hear’ can select complements which denote events. These complements show the syntactic behavior of clauses rather than DPs or VP/*v*P remnant constituents. In the next section I consider more closely the internal structure of these clausal complements.

## 5. The Size of the IPVC Clause

Having established that IPVCs are clauses consisting of a trigger and a predicate, I consider the possibility that trigger-initial order is due to the IPVC-trigger occupying a position higher or lower than the trigger of a predicate-initial clause (recall the discussion of tree (6) in section 1). I reject this possibility, concluding that trigger-initial order is instead due to the absence of predicate raising, as proposed in 3.2.

In 5.1 I argue that although IPVCs have a truncated left periphery, they are nevertheless large enough to include the specifier position that hosts the trigger in root clauses: SpecTopP. For instance, I show that although IPVCs look superficially like ECM complements, IPVC-triggers cannot be locally bound by an argument in the higher clause. In this respect IPVCs contrast sharply with ACC-*ing* PVCs in English and their counterparts in related languages. If we define binding domains in terms of Chomsky’s (2001) notion of phase domains, as in much recent work, then the binding facts suggest that IPVCs constitute phases while ACC-*ing* PVCs do not.

In 5.2 I consider the possibility that the IPVC-trigger raises from the canonical trigger position to some higher position at the left periphery of the clause. I argue against this option on conceptual grounds, and present some evidence from pronoun morphology which suggests that IPVC-triggers do not behave like contrastively fronted topics.

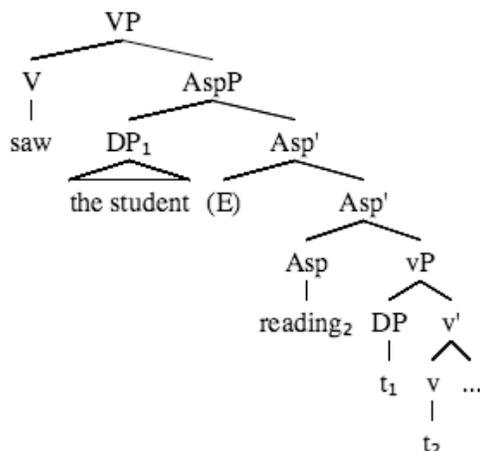
### 5.1. IPVCs Are Larger Than TP/AspP

Consider once more the ACC-*ing* PVC construction in English, where the perception verb takes a non-finite event-denoting clause as its complement:

- (74) The woman saw [<sub>Clause</sub> the student reading the book ]

There is good evidence that clauses of this type are smaller than CP. In one of the most detailed studies of PVCs in English, Felser (1999) proposes that non-finite PVCs are AspP complements, where Asp selects *v*P and introduces a null event argument (E) in its specifier. The embedded verb raises as high as Asp, while the embedded subject raises to become a second specifier of AspP, checking its Case feature by entering into an Agree relation with the *v* head of the higher clause. An abbreviated version of Felser’s structure is given in (75) below. Felser also considers non-finite perception verb complements in other European languages. Based on evidence from Guasti (1993), she argues that infinitive PVCs in Italian, Spanish, and Portuguese have slightly more structure than ACC-*ing* PVCs in English, projecting a TP layer on top of AspP. But like ACC-*ing* PVCs, infinitive PVCs are truncated below CP.

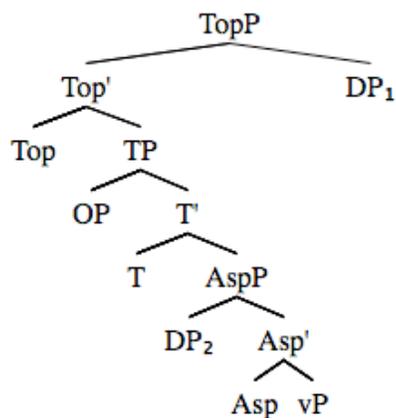
(75)



Suppose we were to extend Felser's analysis to Malagasy and treat IPVCs as AspP or TP complements. Significantly, if IPVCs were as small as AspP or TP, thus lacking a TopP projection, the IPVC-trigger would have to be in a lower position than the triggers of root clauses and *fa*-clauses. Under an AspP/TP analysis, trigger-predicate order in IPVCs could result in part from the lower position of the trigger, rather than being due solely to the absence of predicate raising, as I am arguing here.

For example, suppose we adopt the clause structure in (76) below. This structure is in the spirit of Guilfoyle, Hung and Travis (1992), who assume that the specifier position for the trigger is spelled out to the right of its sister. Guilfoyle et al. suggest that directionality parameters may be set differently for different categories, resulting in structures where some projections have the order <Spec,Head> while others have the order <Head,Spec>. The tree in (76) exemplifies this, with Top projecting its specifier on the right, while T and Asp project their specifiers on the left.

(76)



Adopting a structure like (76), the linear position of the trigger (clause-final versus clause-initial) would fall out automatically from the size of the clause—i.e., from how much functional structure is present above vP. Suppose that root clauses are of category TopP or larger, with the trigger in SpecTopP (the position of DP<sub>1</sub>) and the verb raising to T. On analogy with Felser's analysis of ACC-*ing* PVCs in English, we might postulate that IPVCs are AspP complements, with the IPVC-trigger in SpecAspP (the position of DP<sub>2</sub>) and the verb raising only as high as the Asp head. Alternatively, we might analyze IPVCs as TP complements, with the IPVC-trigger occupying the position where I locate the null operator OP in root clauses. Either way, the word order difference between IPVCs and root clauses would follow from whether the trigger is spelled out in a right-specifier (SpecTopP) or a left-specifier (SpecTP/SpecAspP), and there would be no need to posit a predicate raising operation to derive predicate-initial order.

Despite the initial plausibility of this alternative analysis, I believe there is significant evidence that IPVC clauses are larger than AspP or TP—and are therefore larger than their non-finite PVC counterparts in European languages, if Felser’s analysis of the latter is correct. I review this evidence below. In 5.1.1 I discuss a number of formal properties that IPVC-triggers share with the triggers of root clauses, providing evidence that IPVC-triggers and root triggers are spelled out in the same specifier position. In 5.1.2 I show that IPVCs behave like ‘full’ tensed clauses with regard to A-binding from the higher clause, corroborating my claim that IPVCs include structure above TP (viz., the TopP layer that hosts the trigger).

### 5.1.1. IPVC-Triggers and Root Triggers Occupy the Same Position

One reason to believe that IPVCs include structure above AspP and TP comes from the fact that verbs in IPVC-predicates exhibit the full array of voice forms found in root clauses. In all of the examples presented thus far, the IPVC-predicate was in the AT voice, as in (77a). However, the TT and CT voices are also possible, as illustrated in (77b,c) (compare these with the sentences in (7)). In section 2.1 I proposed that voice morphology specifies the syntactic role of an A'-operator—specifically, a null OP bound by the trigger (Pearson 2001, 2005a,b; cf. Chung 1998 on wh-agreement in Chamorro). If this analysis is correct, then (77) shows that an IPVC must be large enough to include A'-specifier positions for OP and the trigger that binds it.

- (77) a. Ren-dRasoa [ ny...mpamboly namono akoho tamin' ny antsy ]  
 TT.hear.Gen-Rasoa Det farmer Pst.AT.kill chicken with Det knife  
 ‘Rasoa heard the farmer killing chickens with a knife’
- b. Ren-dRasoa [ ny...akoho novonoin' ny mpamboly tamin' ny antsy ]  
 TT.hear.Gen-Rasoa Det chicken Pst.TT.kill Det farmer with Det knife  
 ‘Rasoa heard the chickens being killed by farmer with a knife’
- c. Ren-dRasoa [ ny...antsy namonoan' ny mpamboly akoho ]  
 TT.hear.Gen-Rasoa Det knife Pst.CT.kill Det farmer chicken  
 ‘Rasoa heard the knife being used by the farmer to kill chickens’

Quite generally, IPVC-predicates do not look any different from predicates of root clauses with respect to their morphology or internal word order. Notice, for instance, that the non-trigger agent in (77b,c), *ny mpamboly*, occupies the same immediately postverbal position as in non-AT root clauses, which I have argued to be the subject position in Malagasy (Pearson 2005a). Supposing that the verb raises to T in root clauses while postverbal subjects raise to SpecAspP, as proposed in 2.1, we see no evidence to suggest that these elements occupy lower positions in IPVCs.

Recall that sentences like (77a) are structurally ambiguous: the bracketed constituent could be a clause (an IPVC), or it could be a DP containing a relative clause, as discussed at length in 4.2. What about the bracketed constituents in (77b,c), where the verb is in the TT or CT voice? Perhaps only the DP structure is available here, in which case (77b,c) are not instances of the IPVC construction at all. Evidence against this possibility comes from (78) below, where the embedded verb (*novakin'*) takes the TT form. Here the placement of the framing demonstrative *iretsy ... iretsy* rules out treating the bracketed constituent as a DP. Note also that the bracketed constituent is interpreted as the antecedent for *izany*, which, being a singular demonstrative, cannot refer to the books and must instead refer to the reading event. Sentences like this provide clear confirmation that non-AT voices can occur in IPVC-predicates.

- (78) Hitako [ iretsy boky iretsy novakin' ny mpianatra ],i, ary hitan-dRabe  
 TT.see.1sGen these book these Pst.TT.read Det student and TT.see.Gen-Rabe  
 koa izany<sub>i</sub>  
 also that  
 ‘I saw (the event of) these books being read by the students, and Rabe saw that too’

More direct support for my claim that IPVC-triggers are spelled out in the same position as triggers of root clauses (namely SpecTopP) comes from the distribution of *wh*-phrases.<sup>18</sup> Malagasy allows *wh*-in-situ, but as Sabel (2003), Potsdam (2006), and others have discussed, there is an important restriction on where *wh*-elements can occur. In-situ *wh*-phrases can appear anywhere within the predicate phrase, including object position (79a) and subject position (79b). However, a *wh*-element cannot be the trigger of a clause (79c). To express ‘Who laughed?’, *iza* ‘who’ must be pseudo-clefted, making it the matrix predicate: *Iza no nihomehy?* (lit. ‘[The one who] laughed [is] who?’). Based on the clause structure assumed here, the ungrammaticality of (79c) might follow from a formal constraint against base-merging a *wh*-phrase in a topic position. Another possibility is that *wh*-triggers are ruled out on semantic or pragmatic grounds: if the trigger is interpreted as the theme in a theme-rheme structure, (79c) might violate a condition prohibiting *wh*-operators from mapping to the theme role.

- (79) a. Nividy *inona ianao?*  
Pst.AT.buy what 2sNom  
‘What did you buy?’  
b. Novidin’ *iza ny...omby?*  
Pst.TT.buy who Det cow  
‘Who bought the cow?’  
c. \* Nihomehy *iza?*  
Pst.AT.laugh who  
‘Who laughed?’

As shown in (80) below, the initial DP in an IPVC cannot be a *wh*-phrase. In this respect, it patterns with the trigger of a matrix clause (79c) rather than behaving like a non-trigger subject or object (79a,b). If we suppose that IPVC-triggers and clause-final triggers occupied different positions in the clausal hierarchy—say, SpecAspP and SpecTopP, respectively—it would be difficult to explain why these two positions pattern together in disallowing in-situ *wh* as distinct from all other DP positions in the clause.<sup>19</sup>

- (80) a. \* Nahare [ *ny...vehivavy...iza* niditra tao an-trano ] *Rasoa?*  
Pst.AT.hear Det woman who Pst.AT.enter in.there Obl-house Rasoa  
‘Rasoa heard which woman entering the house?’  
b. \* Ren-dRasoa [ *ny...vehivavy...iza* niditra tao an-trano ]?  
TT.hear.Gen-Rasoa Det woman who Pst.AT.enter in.there Obl-house  
‘Rasoa heard which woman entering the house?’

Besides disallowing *wh*-phrases, the IPVC-trigger position patterns with the trigger position in root clauses with regard to reconstruction effects. Consider the examples in (81) below (from Pearson 2005a:424). In (81a), the subject trigger *ny mpianatra tsirairay* ‘each student’ binds the genitive clitic pronoun *-ny* within the object *ny rainy* ‘his/her father’, yielding a variable interpretation for *-ny*. As (81b) shows, a

<sup>18</sup> Thanks to Eric Potsdam for suggesting this test to me, and for providing the data in (80).

<sup>19</sup> An anonymous reviewer speculates that (80a,b) might be ungrammatical not because the *wh*-phrase occupies a trigger position, but because it is inside an island. Perhaps the *wh*-phrase must undergo LF-movement to a scopal position in the matrix C-domain but is blocked from doing so because the IPVC that contains it is opaque for A'-extraction. While this is a plausible suggestion, the evidence weighs against such an account. The example in (i) below, from Sabel (2003:233), shows that a *wh*-phrase with matrix scope can surface inside an embedded clause (provided it occupies a non-trigger position within that clause). Paul and Potsdam (2008) explicitly claim that in-situ *wh*-phrases in Malagasy do not undergo covert movement and may occur inside islands. In support of this they cite the example in (ii), which is grammatical and receives a matrix question interpretation despite the fact that the *wh*-phrase is inside a relative clause.

- (i) Heverin-dRabe [ *fa nividy inona Rakoto* ]?  
TT.think.Gen-Rabe Comp Pst.AT.buy what Rakoto  
‘What does Rabe believe that Rakoto has bought?’  
(ii) Namangy [ *ny lehilahy [ izay nanasa inona ] ] i...Be?*  
Pst.AT.meet Det man Rel Pst.AT.wash what Det Be  
‘What did Be meet [ the man who washed \_ ]?’ (lit. ‘Be met the man who washed what?’)

variable interpretation is also available when the object is the trigger and the subject is inside the predicate. Hence, a trigger may reconstruct into the scopal domain of a predicate-internal argument.<sup>20</sup> As I discuss in Pearson (2005a), this ability to reconstruct is typical of A'-topics cross-linguistically.

- (81) a. Namangy ny rainy<sub>i</sub> ny mpianatra tsirairay<sub>i</sub>  
 Pst.AT.visit Det father.3Gen Det student each  
 'Each student<sub>i</sub> visited his/her<sub>i</sub> father'
- b. Novangian' ny mpianatra tsirairay<sub>i</sub> ny rainy<sub>i</sub>  
 Pst.TT.visit Det student each Det father.3Gen  
 'Each student<sub>i</sub> visited his/her<sub>i</sub> father'

If IPVC-triggers occupy the same A'-position as the triggers of root clauses (SpecTopP), we predict that when the IPVC-predicate is in the TT voice, its trigger should be able to reconstruct into the scopal domain of a predicate-internal subject for purposes of pronoun binding by a quantifier. This prediction is supported by examples such as those in (82). Speakers I consulted accepted these sentences under an interpretation where the third person genitive *-ny*, contained in the IPVC-trigger, is bound by the postverbal subject within the IPVC-predicate.<sup>21</sup>

- (82) a. Reko [ ny zanany<sub>i</sub> samy nantsoin' ny vehivavy tsirairay<sub>i</sub> ]  
 TT.hear.1sGen Det child.3Gen each Pst.TT.call.Gen Det woman each  
 'I heard each woman<sub>i</sub> calling her<sub>i</sub> child'  
 more lit. 'I heard (the event where) her<sub>i</sub> child, each woman<sub>i</sub> called'
- b. Hitako [ ny reniny<sub>i</sub> samy notoloran' ny ankizy tsirairay<sub>i</sub>  
 TT.see.1sGen Det mother.3Gen each Pst.TT.offer.Gen Det child each  
 fanomezana ]  
 present  
 'I saw each child<sub>i</sub> offering his/her<sub>i</sub> mother a present'  
 more lit. 'I saw (the event where) his/her<sub>i</sub> mother, each child<sub>i</sub> offered a present'

The reconstruction data are consistent with my contention that IPVCs must be large enough to include an A'-topic position for the IPVC-trigger. In the next section I present additional binding data which argues against treating IPVCs as TP or AspP complements. Specifically, I show that the IPVC-trigger may not be locally A-bound by a DP in the superordinate clause. In this respect, the IPVC-trigger patterns with the subjects of tensed CP complements in other languages, rather than with ECM subjects, strongly suggesting that IPVCs include structure above TP.

### 5.1.2. IPVCs As Binding Domains

It is well known that the subject of an ACC-*ing* PVC in English takes the superordinate clause as its binding domain (83a). When the subject of the PVC is an anaphor bound by the subject of the matrix clause, the sentence is grammatical (Principle A is respected); replacing the anaphor with a bound pronoun renders the sentence ungrammatical (Principle B is violated). Compare (83a) with (83b), where the perception verb instead takes a tensed clause complement. In (83b) the finite PVC itself constitutes the local binding domain for its subject: hence we get the opposite judgements with respect to anaphor and pronoun binding by the matrix subject. As (84) shows, infinitival TP complements pattern with AspP complements with regard to binding.

- (83) a. Looking in the mirror, Daniel<sub>i</sub> saw [<sub>AspP</sub> { himself<sub>i</sub> / \*him<sub>i</sub> } trembling ]

<sup>20</sup> Here I use RECONSTRUCTION as a term of convenience. I do not assume that the trigger in (81b) lowers into the scopal domain of the non-trigger subject at LF. A lowering operation of this type is not needed under a derivational approach to binding such as the one I adopt in 5.1.2 below, where binding relations are established at the point where the antecedent first merges with the term containing the bound DP.

<sup>21</sup> In (82) the IPVC-predicate is introduced by the adverbial *samy* 'each' (constituency tests confirm that *samy* is part of the predicate and not the IPVC-trigger). *Samy* often co-occurs with a universal quantifier like *tsirairay* to enforce a distributive reading.

- b. Looking in the mirror, Daniel<sub>i</sub> saw [<sub>CP</sub> that { he<sub>i</sub> / \*himself<sub>i</sub> } was trembling ]  
 (84) Daniel<sub>i</sub> believes [<sub>TP</sub> { himself<sub>i</sub> / \*him<sub>i</sub> } to be a genius ]

This difference in binding possibilities is generally taken to reflect a difference in the size of the complement clause, and with it the head which is responsible for Case-licensing the embedded subject. In (83b) *saw* selects a full CP whose subject is Case-licensed clause-internally by the embedded T head. In (83a) and (84) the verb selects a smaller clausal complement (AspP, non-finite TP) whose subject is Case-licensed by the *v* head in the higher clause (ECM or raising to object).

To capture this contrast, the definition of BINDING DOMAIN must be such that a CP complement constitutes the binding domain for its subject whereas an AspP or TP complement does not. There are various ways to implement this. For the sake of concreteness, I will follow a number of recent authors (Canac-Marquis 2005, Quicoli 2008, Lee-Schoenfeld 2008) who argue that locality for binding should be understood in terms of Chomsky's (2001, 2006) theory of cyclic spell-out. Chomsky proposes that bottom-up derivations proceed in cycles called PHASES. When a phase of category XP is constructed, the YP complement of the phase head X is sent to the PF- and LF-interfaces (spelled out), rendering the terms of YP inaccessible to further syntactic operations (Chomsky's PHASE IMPENETRABILITY CONDITION). YP is referred to as the SPELL-OUT DOMAIN established by the XP phase. Although Chomsky introduces phases and spell-out domains primarily to account for cyclicity in movement/Agree operations, the authors cited above propose that Principles A and B make reference to these same domains. Although their proposals differ somewhat, (85) captures the essence of a phase-based binding theory. The idea here is that binding possibilities are determined derivationally: an anaphor must be bound—and a pronoun cannot be bound—at the point in the derivation where its (highest) A-position is spelled out.<sup>22</sup>

- (85) a. The BINDING DOMAIN (BD) for  $\alpha$  is the smallest phase XP whose spell-out domain YP contains every A-position of  $\alpha$ .  
 b. Principle A: An anaphor must be bound within its BD.  
 Principle B: A pronoun must be free within its BD.

While the exact inventory of phase categories is a matter of debate, there is widespread consensus that CP and *v*P constitute phases, whereas TP and AspP do not. This is crucial for capturing the contrast between (83a)/(84) and (83b). In (83b) the smallest phase whose spell-out domain contains the embedded subject (*he*, *himself*) is the CP complement; hence, the matrix subject (*Daniel*) lies outside the binding domain for the embedded subject. In (83a) and (84), however, the smallest phase whose spell-out domain contains the embedded subject is the matrix *v*P. The matrix subject is base-merged in the specifier of this *v*P, enabling it to enter into a local binding relation with the embedded subject.<sup>23</sup>

With this background, let us return to the IPVC construction. Here the cross-clausal binding possibilities are quite different from what we find for the ACC-*ing* PVC construction. Like English, Malagasy shows robust Principle B effects: a pronoun cannot be bound by a co-argument, and hence (86a) is ungrammatical under the reading where the pronominal object *azy* is coindexed with *Rakoto* (the sentence is acceptable if *Rakoto* and *azy* are contra-indexed). However, when the matrix verb selects an IPVC with a pronominal trigger, as in (86b), the pronoun may be coindexed with the matrix subject without violating Principle B. Example (86c) is likewise acceptable, with both the matrix clause and the IPVC taking a first person singular pronominal trigger.

<sup>22</sup> The definition in (85a) is worded in such a way that if  $\alpha$  occupies an A-position at the edge of an XP phase (e.g., the specifier of XP) it can be locally bound by a DP in the next-higher phase, as when the subject of a *v*P small clause complement is bound by the subject of the higher clause. This is allowed because, in Chomsky's (2001, 2006) model, the edge of a phase is not spelled out until the next-higher phase has been created.

<sup>23</sup> The matrix subject subsequently raises out of the *v*P to the specifier of TP to satisfy the EPP feature on T. We must therefore interpret the binding principles such that a pronoun/anaphor  $\alpha$  is locally bound by  $\beta$  if (a)  $\alpha$  is bound by  $\beta$ , and (b)  $\beta$  is base-merged within the BD for  $\alpha$ . This entails that  $\beta$  enters into a binding relation with  $\alpha$  as soon as  $\beta$  merges with a term containing  $\alpha$ , which happens prior to the point in the derivation where the YP containing  $\alpha$  is spelled out (YP is not spelled out until the maximal XP has been created).

- (86) a. \* Nahita azy<sub>i</sub> Rakoto<sub>i</sub>  
 Pst.AT.see 3Acc Rakoto  
 ‘Rakoto<sub>i</sub> saw him<sub>i</sub>’  
 b. Nahita [ azy<sub>i</sub> nangovitra ] Rakoto<sub>i</sub>  
 Pst.AT.see 3Acc Pst.AT.tremble Rakoto  
 ‘Rakoto<sub>i</sub> saw him<sub>i</sub> trembling’ (i.e., Rakoto saw himself trembling)  
 c. Nahita [ ahy<sub>i</sub> nangovitra ] ahō<sub>i</sub>  
 Pst.AT.see 1sAcc Pst.AT.tremble 1sNom  
 ‘I saw me trembling’

As shown in (87) below, this pattern is replicated when the perception verb is in the TT form and the pronoun is (contained within) the matrix trigger. Example (87a) shows that the pronominal trigger *izy* cannot be coindexed with the non-trigger subject *Rakoto*. If the trigger is interpreted within the c-command domain of the non-trigger subject for purposes of binding (cf. the reconstruction example in (81b)), then (87a) violates Principle B, with *izy* locally A-bound by its co-argument *Rakoto*.<sup>24</sup> However, (87b) shows that coindexation is possible when *izy* is contained within an IPVC (*izy* functions as the IPVC-trigger and the IPVC in turn acts as the matrix trigger). If *izy nangovitra* is interpreted in the c-command domain of *Rakoto* in (87b), then *Rakoto* must lie outside the local binding domain for *izy* in order to avoid a Principle B violation.

- (87) a. \* Hitan-dRakoto<sub>i</sub> izy<sub>i</sub>  
 TT.see-Rakoto 3Nom  
 ‘Rakoto saw him(self)’  
 b. Hitan-dRakoto<sub>i</sub> [ izy<sub>i</sub> nangovitra ]  
 TT.see-Rakoto 3Nom Pst.AT.tremble  
 ‘Rakoto saw him(self) trembling’

The fact that coindexation is licit in (86b,c) and (87b) shows that the IPVC constitutes the binding domain for its own trigger, with arguments of the higher clause lying outside that domain. In this respect the IPVC construction patterns with the English finite PVC construction in (83b) rather than with the ACC-*ing* construction in (83a)—despite the fact that the IPVC construction, like the ACC-*ing* construction, expresses direct perception of an event. I take this as evidence that IPVCs include more functional structure than AspP or TP complements do, which is consistent with my assertion that they are of category TopP. To account for the grammaticality of (88b,c) and (89b), I will assume that, like CP (and unlike AspP and TP), TopP constitutes a phase domain.<sup>25</sup>

Note that in order for this analysis to go through in accordance with (85), it must be the case that every A-position of the IPVC-trigger is contained within TP, where TP is the spell-out domain established by the TopP phase. If the trigger originates inside TP and undergoes A'-movement to the specifier of TopP, this requirement is straightforwardly met. However, if the trigger is instead base-merged in SpecTopP as a dislocated topic and binds a null operator within TP, as I have provisionally assumed here (cf. (88) below), then we face a potential problem, since the trigger does not occupy an A-position at any

<sup>24</sup> If *izy* in (87a) is instead interpreted in its spell-out position, then *izy* binds *Rakoto* and the sentence violates Principle C.

<sup>25</sup> Cf. Kratzer and Selkirk (2007), who argue that the TopP projection in German (which they locate between CP and TP, following Jäger 2001) is a phase. Kratzer and Selkirk suggest that the defining property of phase categories might be that they can “introduce (‘externally merge’) new material to their specifier positions”, rather than simply providing landing sites for movement (2007:114). If the Malagasy trigger is base-merged in the specifier of TopP, as I assume here, then TopP in Malagasy would count as a phase by this definition.

Note that if TopP is a phase, it follows that the TP complement of Top (i.e., the predicate phrase) is spelled out as soon as TopP is created. We might therefore wonder how it is that TP is able to raise subsequently to the specifier of FinP, as required by the predicate-raising analysis adopted here. To allow for this, I will assume that the Phase Impenetrability Condition prohibits sub-extraction from a spell-out domain but does not prohibit the spell-out domain itself from re-merging at a later step in the derivation. Cf. the version of cyclic spell-out proposed by Fox and Pesetsky (2005), where spelling out a YP imposes a linear order on the terminals of YP but does not remove YP from the derivation. Under an approach of this type, there is nothing to prevent YP from undergoing further movement as long as its terminals are not reordered.

point in the derivation. To address this, I propose that the trigger forms a composed A'-chain with OP, so that the highest A-position of OP is what counts for determining the binding domain of the trigger. Since the highest A-position of OP is within TP, it follows that the TopP phase is the binding domain for the trigger (see section 6.1 below, where I suggest that chain formation is how the trigger is Case-licensed).

(88)  $[_{TopP} \text{Trigger}_i [_{Top} \text{Top} [_{TP} \mathbf{OP}_i \dots t_i \dots ] ] ]$

Whether or not one adopts a phase-based approach to binding domains, the fact that a pronominal IPVC-trigger can be bound by the subject of the perception verb (89a), whereas the pronominal subject of an ACC-*ing* complement cannot be (89b), strongly suggests that Felser's AspP structure for ACC-*ing* complements cannot be extended to IPVCs in Malagasy. Nor can we analyze IPVCs as TP complements, which pattern with ACC-*ing* complements with respect to binding. If IPVCs were of category AspP or TP, we would be forced to conclude that binding domains are determined in a fundamentally different way for English and Malagasy, at least with regard to cross-clausal A-binding. On the other hand, if IPVCs are bigger than AspP or TP—i.e., if they are TopP complements, which constitute phases—this would explain why they pattern like 'full' tensed clauses with respect to binding.

- (89) a. Nahita [ azy<sub>i</sub> nangovitra ] Rakoto<sub>i</sub>  
 Pst.AT.see 3Acc Pst.AT.tremble Rakoto  
 'Rakoto<sub>i</sub> saw him(self)<sub>i</sub> trembling'  
 b. \* Daniel<sub>i</sub> saw [ him<sub>i</sub> trembling ]

Interestingly, when the IPVC-trigger is coindexed with the subject of the perception verb, it can also take the form of a reflexive. However, far from contradicting the pronoun binding facts presented above, examples with reflexives actually provide additional support for the claim that the IPVC is the local binding domain for its trigger. First of all, note that reflexives in Malagasy can either be simple (monomorphemic) or complex. The simple reflexive consists of the bare noun *tena* 'self/body', while complex reflexives have the form of a DP in which *tena* takes a genitive enclitic and is preceded by the determiner *ny*. The simple form is preferred when the reflexive is a non-trigger object bound by a trigger subject (90a), though the complex form is also more-or-less acceptable in this position (90b).<sup>26</sup> By contrast, only a complex reflexive can act as an IPVC-trigger bound by a higher argument, as shown in (91).

- (90) a. Nahita *tena* aho  
 Pst.AT.see self 1sNom  
 'I saw myself'  
 b. ? Nahita *ny tenako* aho  
 Pst.AT.see Det self.1sGen 1sNom  
 'I saw myself'  
 (91) a. \* Nahita [ tena nangovitra ] aho  
 Pst.AT.see self Pst.AT.tremble 1sNom  
 'I saw myself trembling'  
 b. Nahita [ *ny...tenako* nangovitra ] aho  
 Pst.AT.see Det self.1sGen Pst.AT.tremble 1sNom  
 'I saw myself trembling'

What accounts for the contrast in (91a,b) (versus (90a,b))? Paul (2004) has shown that whereas *tena* is an English-type anaphor, subject to Principle A, complex reflexives are capable of taking non-local and discourse antecedents. This is illustrated below (examples taken from Paul 2004). Since *tena* must be locally bound, (92a) is unambiguous: *Rabe* is the only possible antecedent. By contrast, (92b) is ambiguous, as

<sup>26</sup> An anonymous reviewer points out that if the predicate-raising analysis is correct, the anaphor is not c-commanded by *aho* in its spell-out position. However, if the structure in (88) is on the right track, then the anaphor is c-commanded by the null operator in SpecTP with which *aho* is co-indexed. Even if there is no operator, sentences like (90a,b) are unproblematic under the derivational binding theory summarized in (85), according to which the binding relation between the anaphor and its antecedent is established when the antecedent base-merges with the constituent containing the anaphor, before predicate raising takes place.

*ny tenany* may be bound either locally by *Ranaivo* or non-locally by *Rabe*. The examples in (93) illustrate a complex reflexive taking its referent from the larger discourse context.

- (92) a. Nilaza Raso<sub>i</sub> [ fa hamono *tena*<sub>j/\*i</sub> Rabe<sub>j</sub> ]  
 Pst.AT.say Raso Comp Irr.AT.kill self Rabe  
 ‘Raso<sub>i</sub> said that Rabe<sub>j</sub> is going to kill himself<sub>j/\*i</sub>’  
 b. Nilaza Rabe<sub>i</sub> [ fa namitaka *ny tenany*<sub>i/j</sub> Ranaivo<sub>j</sub> ]  
 Pst.AT.say Rabe Comp Pst.AT.trick Det self.3Gen Ranaivo  
 ‘Rabe<sub>i</sub> said that Ranaivo<sub>j</sub> tricked him(self)<sub>i/j</sub>’
- (93) a. Sambatra Rabe<sub>i</sub>: notoloran-dRakoto valim-pahaizana *ny...tenany*<sub>i</sub>  
 happy Rabe Pst.TT.offer.Gen-Rakoto prize Det self.3Gen  
 ‘Rabe<sub>i</sub> is happy: Rakoto offered him<sub>i</sub> a prize’ (lit. ‘... offered himself a prize’)  
 b. Manaja *ny tenako* Rabe  
 AT.respect Det self.1sGen Rabe  
 ‘Rabe respects me’ (lit. ‘Rabe respects myself’)

In light of this difference between simple and complex reflexives, we see that the contrast between (91a) and (91b) corroborates the Principle B data discussed earlier. Only a complex reflexive, capable of taking a non-local antecedent, may function as an IPVC-trigger coindexed with a higher argument. This is consistent with saying that the IPVC constitutes the binding domain for its trigger, meaning that the IPVC-trigger cannot be locally bound by an argument in the higher clause.<sup>27</sup>

<sup>27</sup> It is interesting to compare binding in the IPVC construction with binding in the so-called RAISING TO OBJECT (RTO) construction, mentioned in section 4.1, where a thematic argument of an embedded clause appears to act as the derived object of the higher verb, separated from the embedded predicate by the particle *ho* (Keenan 1976, Paul and Rabaovolonona 1998). Example (48a) is repeated in (i) below with the derived object italicized. The RTO construction resembles the IPVC construction in terms of word order, though in 4.1 I noted that they pattern differently with regard to constituency tests. Note also that the embedded verb in an RTO construction is not subject to a tense-matching requirement, but is instead independent of the tense of the higher verb (i.e., the embedded predicate is ‘semantically finite’).

- (i) Mihevitra *an-Raso*<sub>i</sub> ho namono *ny voalavo* (ve) *ny zaza*  
 AT.think Acc-Raso Part Pst.AT.kill Det rat Det child  
 ‘The child believes Raso to have killed the rat’ (or: ‘The child believes [of] Raso [that she] killed the rat’)

Despite the label RAISING TO OBJECT, it is not clear that the ‘derived object’ has undergone A-movement from the embedded clause into the higher clause. In Pearson (2005a) I argue against a raising analysis. Following Paul and Rabaovolonona (1998), I suggest that *ho* realizes the predication head Pr proposed by Bowers (1993), and that Pr projects a PrP small clause selected by the higher verb. The ‘derived object’ base-merges as the specifier of PrP, while the embedded predicate merges as the complement of Pr. This structure is shown in (ii), where the embedded predicate is analyzed as a TP with a null operator in its specifier. To derive the correct interpretation for the sentence, I assume that the DP in SpecPrP binds the null operator.

- (ii) Mihevitra [<sub>PrP</sub> *an-Raso*<sub>i</sub> [<sub>Pr</sub> ho [<sub>TP</sub> OP<sub>i</sub> namono ny voalavo ] ] ] *ny zaza*

The RTO construction shows apparently contradictory behavior when it comes to binding. The ‘derived object’ can be a simple reflexive bound by the matrix trigger (iii), suggesting that it takes the larger clause as its binding domain. In this respect the RTO construction contrasts sharply with the IPVC construction (cf. (91a)). Paradoxically, however, the ‘derived object’ can also take the form of a pronoun bound by the matrix trigger (iv), implying that its binding domain is the embedded clause. In the latter case the ‘derived object’ seems to pattern with IPVC-triggers. (Examples (iii) and (iv) are taken from Paul and Rabaovolonona 1998; note *mihevitra* + *tena* becomes *mihevi-tena* due to a process of pseudo-incorporation where the verb combines with a following bare NP to form a phonological unit.)

- (iii) Mihevi-*tena*<sub>i</sub> ho olo-marina *izy*<sub>i</sub>  
 AT.think-self Part person-true 3Nom  
 ‘He<sub>i</sub> thinks himself<sub>i</sub> to be the right person’  
 (iv) Mihevitra *azy*<sub>i</sub> ho manaja an’ i Bakoly Rakoto<sub>i</sub>  
 AT.think 3Acc Part AT.respect Acc Det Bakoly Rakoto  
 ‘Rakoto<sub>i</sub> thinks him(self)<sub>i</sub> to respect Bakoly’

The binding pattern in (iv) can be accounted for in terms of the structure in (ii) if we assume that PrP complements, like TopP complements, are phases (note that the PrP constituent satisfies the criteria for phaseness proposed by Kratzer and Selkirk 2007; cf. footnote 25). Perhaps the ‘derived object’ receives its semantic role (and is Case-licensed) by forming a chain with the null

Summarizing section 5.1: On the basis of data from binding and *wh*-in-situ constructions, I have argued that the IPVC-trigger is spelled out in the same high A'-position (SpecTopP) as the trigger of a predicate-initial clause. It follows that IPVCs are larger than their semantic counterparts in other languages. Non-finite PVCs in English and related languages are of category AspP or TP (according to Felser 1999), while IPVCs are of category TopP. In support of this, I showed that the IPVC-trigger cannot be locally bound by the subject of the higher clause, but can reconstruct into a lower position within the IPVC-predicate. In this respect, IPVC-triggers contrast sharply with the subjects of non-finite PVCs in English, and ECM subjects generally. Insofar as there is no evidence for locating IPVC-triggers in a lower position than clause-final triggers, a non-predicate-raising analysis of IPVC order based on the structure in (76) fails to receive support.

## 5.2. Against Trigger Fronting in IPVCs

Even if we accept that IPVCs are large enough to include the TopP projection, as argued above, there is another option for explaining trigger-initial order that we must consider, namely that the IPVC-trigger has raised from the specifier of TopP to an even higher position at the left edge of the clause, the specifier of some functional head *Z*. This analysis is sketched in (94b) for the IPVC in (94a). Crucially, if the IPVC-trigger obligatorily raises out of SpecTopP, leaving a trace behind, there is no way to tell whether SpecTopP precedes or follows Top'—in which case the word order in IPVCs is compatible with either the right-specifier approach or the predicate-raising approach. In (94b) I depict the trace as following Top', consistent with the right-specifier approach (cf. the tree in (6)).

- (94) a. Hitan-dRabe [ *io*...*mpianatra io* namaky boky ]  
 TT.see.Gen-Rabe this student this Pst.AT.read book  
 'Rabe saw this student reading a book'
- b. [<sub>ZP</sub> [<sub>DP</sub> *io mpianatra io* ]<sub>i</sub> *Z* [<sub>TopP</sub> [<sub>Top'</sub> namaky boky ] *t<sub>i</sub>* ] ]

The analysis in (94b) is problematic on conceptual grounds, however. It is unclear what sort of position SpecZP would be, or why the IPVC-trigger—but not the trigger of a root clause or a *fa*-clause—would need to move there. Massam (1985) argues that in Niuean and a number of other languages, the subjects of ECM complements raise into an A'-position at the left edge of the clause in order to be Case-licensed in a government configuration—in Minimalist terms, an Agree configuration—with the verb in the higher clause (Massam calls this NON-VACUOUS ECM MOVEMENT). But it seems unlikely that the trigger of an IPVC would need to undergo Case-driven movement of this sort. In section 6.1 below I argue that the trigger checks its Case within TopP by binding the null operator inside the predicate; thus the trigger does not need to enter into a Case-licensing configuration with a head outside the clause. This is supported by the data in 5.1.2, which showed that the IPVC-trigger does not behave like an ECM subject with respect to binding.

Likewise, there seems little reason to believe that the IPVC-trigger raises for interpretive reasons—e.g., to be interpreted as a focused constituent. Arguably Malagasy does have constructions where the trigger raises from SpecTopP to a higher position and is spelled out to the left of the predicate. However, the interpretation of such constructions is quite different from that of IPVCs. Consider (95), taken from Paul (2000:11), which illustrates what I will refer to as CONTRASTIVE TRIGGER FRONTING. This construction is discussed briefly by Keenan (1976), who notes that the trigger can appear at the left edge of its

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operator. If so, this would make the specifier of PrP an A'-position. As an A'-element base-merged at a phase edge, the 'derived object' would be expected to pattern with embedded triggers with respect to binding (as well as m-case assignment; see 6.1).

It is less clear how to account for (iii), where the 'derived object' appears to be locally bound by the matrix trigger. One possibility is that the 'derived object' is optionally introduced as an argument of the higher verb (*mihevitra*) which controls a null pronominal in SpecPrP:

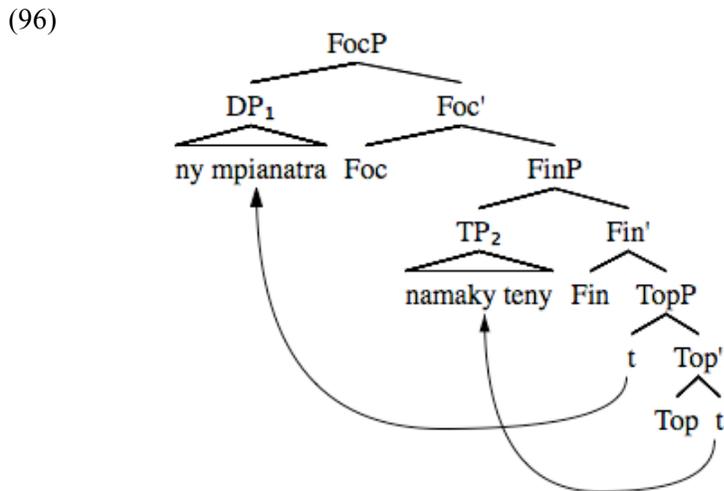
- (v) Mihevi-*tena*<sub>i</sub> [<sub>PrP</sub> PRO<sub>i</sub> [<sub>Pr'</sub> ho [<sub>TP</sub> OP<sub>i</sub> olo-marina ] ] ] *iZY*

Clearly more work needs to be done on the structure of RTO clauses before we can determine whether they pose a problem for the theory of cross-clausal A-binding presented here. I leave this as a task for future research.

clause when its referent is being contrasted with another referent in the discourse. In (95) two clauses with contrastively fronted triggers are juxtaposed.

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

Unlike IPVCs, however, clauses with contrastive trigger fronting denote propositions and occur in root contexts. Moreover, contrastively fronted triggers receive a focus interpretation. While I have not investigated contrastive trigger fronting in detail, I tentatively propose that TP raises to SpecFinP in (95), just as it does in predicate-initial clauses, but the effect of this movement on linear order is undone by subsequent raising of the trigger to the specifier of a focus-type projection located above FinP:



There is no evidence to suggest that IPVC-triggers receive a focus interpretation. Unlike contrastively fronted triggers, an IPVC-trigger need not occur in a discourse context where its referent is being compared explicitly or implicitly with other potential referents. Consequently, there seems to be little motivation for extending the structure in (96) to account for word order in IPVCs.

With regard to interpretation, it is not the properties of the trigger which distinguish IPVCs from predicate-initial clauses, but rather the properties of the predicate: IPVCs pick out events and lack an independent tense specification, whereas predicate-initial clauses include a tense specification and denote propositions. It seems much more plausible that this semantic difference would be reflected in the spell-out position of the predicate rather than the spell-out position of the trigger (cf. footnote 11 on the relationship between finiteness and the position of the verb in French and Irish).

Although there appears to be no conceptual motivation for positing trigger fronting in IPVC clauses, one would ideally want empirical support for the claim that IPVC-triggers do not occupy a higher position than triggers of predicate-initial clauses. Relevant evidence is not easy to come by, since it is difficult to know how we might formally distinguish the SpecTopP position from the hypothetical SpecZP position in (94b). However, I will note here one fact which seems to suggest that the IPVC-trigger has not raised out of SpecTopP, having to do with the nominative forms of the first person singular pronoun.

In 2.2 I observed that a pronoun appears in the nominative when it is the trigger of a clause, when it acts as a predicate (e.g., the focus in a pseudo-cleft), when it functions as a *dia*-topic (discourse topic), and in environments that call for default m-case. Uniquely, the first person singular pronoun has two nominative forms, *izaho* and *aho*. These do not alternate freely. When the pronoun is in the normal trigger position, *aho* is preferred, although some speakers also accept *izaho*. This is illustrated in (97a,b) below, where the pronoun appears in root and embedded trigger position, respectively.

- (97) a. Namangy ny ankizy { *aho* / %*izaho* }  
 Pst.AT.visit Det children 1sNom  
 ‘I visited the children’  
 b. Heverin’ ny vehivavy [ fa namangy ny ankizy { *aho* / %*izaho* } ]  
 TT.think Det woman Comp Pst.AT.visit Det children 1sNom  
 ‘The woman thinks that I visited the children’

*Izaho* is required in all other environments that call for nominative m-case. When the pronoun is pseudo-clefted, for instance, only the *izaho* form is accepted; *aho* is ungrammatical for all speakers (98a). Likewise, *izaho* appears in contexts where default nominative overrides accusative or genitive m-case, such as when the pronoun is the second conjunct in a coordinate structure (98b). *Izaho* is also the required form when the pronoun functions as a *dia*-topic (99a), or undergoes contrastive fronting (99b) (the latter example is adapted from a sentence in a written text: Ravololomanga 1996:40).

- (98) a. { *Izaho* / \**aho* } no namangy ny ankizy  
 1sNom Foc Pst.AT.visit Det children  
 ‘It is I who visited the children’  
 b. Nahita anao sy { *izaho* / \**aho* } Rabe  
 Pst.AT.see 2sAcc and 1sNom Rabe  
 ‘Rabe saw you and me’  
 (99) a. { *Izaho* / \**aho* } dia namangy ny ankizy  
 1sNom Top Pst.AT.visit Det children  
 ‘As for me, I visited the children’  
 b. Andeha ianareo, fa { *izaho* / \**aho* } miandry aty aoriana  
 go.on.Imp 2pNom but 1sNom AT.wait here after  
 ‘You go on ahead, whereas I (will) wait behind’

Based on (97)-(99), it seems that the *aho* form occurs only when the pronoun occupies the canonical trigger position, while *izaho* is required elsewhere, including when the pronoun is fronted or otherwise displaced from the trigger position. Turning to the IPVC construction, if the trigger precedes the predicate because it has raised over the predicate, as in (94b), then we expect *aho* to be disallowed in the IPVC-trigger position (cf. (99)). However, (100) shows that this expectation is not borne out: *aho* may indeed occur as the trigger of an IPVC. In fact, most speakers I consulted reject the sentence if *izaho* is used in place of *aho*.

- (100) Hitan-dRabe [ { *aho* / %*izaho* } namaky boky ]  
 TT.see.Gen-Rabe 1sNom Pst.AT.read book  
 ‘Rabe saw me reading a book’

As far as I have been able to determine, speakers accept *izaho* in (100) only if they also accept *izaho* in (97). Thus we see that, with respect to nominative pronoun distribution, the IPVC-trigger patterns with clause-final triggers rather than behaving as though it has undergone fronting. This is consistent with my contention that it is the absence of predicate raising, and not fronting of the trigger, which accounts for trigger-initial order in IPVCs.

## 6. Additional Issues

I conclude this paper by considering some outstanding issues in the analysis of the IPVC construction. In 6.1 I return to the question of how the morphological form of the IPVC-trigger is determined. In 6.2 I compare the IPVC construction with the PSEUDO-RELATIVE PVC construction found in many Romance languages, and briefly consider whether they should receive the same analysis.

### 6.1. Case Marking on Triggers

In sections 4 and 5 I argued that the linear position of the IPVC-trigger cannot be attributed to Case-driven movement: it does not move into the higher clause (raising to object), nor does it raise to the left edge of the embedded clause to check Case in an ECM configuration. However, this claim appears to be at odds with the morphological case form (m-case) of the IPVC-trigger. Recall from section 2.2 that while pronouns and proper names appear in the nominative m-case when they function as the trigger of a root clause or an embedded clause headed by *fa* (101a), the trigger of an IPVC instead takes the accusative form (101b).

- (101) a. Nahita Rasoa [ *fa* namaky boky *isika* ]  
 Pst.AT.see Rasoa Comp Pst.AT.read book 1inNom  
 ‘Rasoa saw that we were reading books’
- b. Nahita [ *antsika* namaky boky ] Rasoa  
 Pst.AT.see 1inAcc Pst.AT.read book Rasoa  
 ‘Rasoa saw us reading books’

In this respect the IPVC certainly looks like a type of ECM complement. The paradox is that IPVC-triggers do not behave like ECM subjects with respect to binding, as discussed in 5.1.2. The examples below (repeated from (86c) and (91a)) show that when the IPVC-trigger is A-bound by the subject of the perception verb, it can take the form of a pronoun but not the locally-bound reflexive *tena*. Insofar as A-binding domains coincide with domains for Case-licensing, the fact that (102a) is grammatical while (102b) is not suggests that the IPVC-trigger has its Case checked by a probe within the IPVC itself. If the IPVC-trigger were Case-licensed by the matrix *v*, then its local binding domain should be the matrix *vP*, in which case (102a) would violate Principle B and (102b) would respect Principle A, contrary to fact.

- (102) a. Nahita [ *ahy<sub>i</sub>* nangovitra ] *aho<sub>i</sub>*  
 Pst.AT.see 1sAcc Pst.AT.tremble 1sNom  
 ‘I<sub>i</sub> saw me<sub>i</sub> trembling’
- b. \* Nahita [ *tena<sub>i</sub>* nangovitra ] *aho<sub>i</sub>*  
 Pst.AT.see self Pst.AT.tremble 1sNom  
 ‘I<sub>i</sub> saw myself<sub>i</sub> trembling’

There are further reasons to believe that the resemblance between IPVCs and ECM complements is only superficial. As I observed in 4.1, the m-case of the IPVC-trigger actually varies according to the position of the IPVC within the superordinate clause. The IPVC-trigger is realized as accusative only if the IPVC is spelled out inside the higher predicate as the complement of the perception verb, as in (101b). If the IPVC instead acts as the trigger of the superordinate clause, with the perception verb in TT voice, the IPVC-trigger takes the nominative form (103a). The IPVC-trigger is likewise nominative when the IPVC is pseudo-clefted (103b).

- (103) a. Hitan-dRasoa [ *isika* namaky boky ]  
 TT.see.Gen-Rasoa 1inNom Pst.AT.read book  
 ‘Rasoa saw us reading books’
- b. [ *Isika* namaky boky ] no hitan-dRasoa  
 1inNom Pst.AT.read book Foc TT.see.Gen-Rasoa  
 ‘What Rasoa saw is (the event of) us reading books’

Pronouns appear in the nominative when they are pseudo-clefted or function as matrix triggers, and in the accusative when they are non-trigger objects of verbs (see section 2.2). Thus it appears that the morphological form of the IPVC-trigger is determined by the syntactic position of the IPVC that contains it: if the IPVC occupies a position where accusative m-case is assigned (e.g., complement of V), its own trigger will appear in the accusative, and if the IPVC occupies a nominative m-case position, its trigger will take the nominative form. This is summarized in (104):

- (104) If a TopP clausal dependent is spelled out in a position where m-case K would be assigned to a DP, then the trigger of that TopP clause will be realized in m-case K.

Interesting support for this generalization comes from the data in (105)-(106) below. Recall from section 2.2 that when a DP in object position consists of two proper names or pronouns conjoined with *sy* ‘and’, only the first conjunct takes the accusative form while the second conjunct appears in the default nominative form (105). In parallel fashion, if two predicate-internal IPVCs are conjoined, only the trigger of the first IPVC takes the accusative form when it is a pronoun or proper name, while the trigger of the second IPVC appears in the nominative (106). It is not clear what accounts for this pattern; however, the parallel between (105) and (106) supports my claim that the IPVC-trigger appears in whichever m-case is associated with the position of the IPVC containing it.<sup>28</sup>

<sup>28</sup> The generalization in (104) may well extend beyond the IPVC construction. Recall from section 3.2 that the preposition *amin-* ‘with/at’ (*tamin-* in the past tense) can combine with a trigger-initial clause to form a temporal adjunct (cf. example (33a)). Extending my analysis of IPVCs to this construction, I assume that *amin-* takes an event-denoting TopP clause as its complement. As discussed in 2.2, a proper name like *Rasoa* appears in the genitive (bound) form when selected as a DP complement of *amin-*: *amin-dRasoa* ‘with Rasoa’. It turns out that when *amin-* selects a TopP clause whose trigger is a proper name, that trigger occurs in this same bound form, as shown in (i) below. It thus appears that in the temporal clause construction, as in the IPVC construction, the position of a TopP clause determines the m-case of its trigger, in accordance with (104).

- (i) *tamin-* [ *-dRasoa* mbola nipetraka tany Antsirabe ]  
 Pst.with -Rasoa(Gen) still Pst.AT.live Pst.there Antsirabe  
 ‘while Rasoa was still living in Antsirabe’

When the trigger of the complement clause is a pronoun, however, the facts are more complex. If the trigger is the first person singular pronoun or the third person pronoun, the genitive forms (*-ko* and *-ny*, respectively) are disallowed; instead, the default nominative forms *izaho* and *izy* must be used (recall from 5.2 that the first person pronoun takes the form *izaho* rather than *aho* in contexts that call for default m-case):

- (ii) *tamin'* [ { *izaho* / \**-ko* } mbola nipetraka tany Antsirabe ]  
 Pst.with 1sNom / 1sGen still Pst.AT.live Pst.there Antsirabe  
 ‘while I was still living in Antsirabe’

I assume that genitive *-ko* and *-ny* are disallowed here because they are unstressed enclitics. Note that when *amin-* selects a first person singular or third person pronoun as its DP complement, the latter will normally take the form of a genitive clitic (*ami-ko*/\**amin'izaho* ‘with me’, *amin-ny*/\**amin'izy*, ‘with him/her’). However, as noted in 2.2, these pronouns can combine with a modifier to form a larger constituent, in which case the clitic form is disallowed and the pronoun instead appears in the nominative (iii). Plausibly, the clitic forms *-ko* and *-ny* are licensed only when the pronoun is sister to the P head. If so, then default nominative overrides genitive in (ii) and (iii) because the P head merges with a larger XP complement which properly contains the pronoun, meaning that the P head and the pronoun do not form a constituent: *amin'* [<sub>XP</sub> *izy/izaho* ... ].

- (iii) a. *amin'* [ *izy ireo* ] ‘with them’ (\* *amin-ny ireo*)  
 b. *amin'* [ *izy mirahalahy* ] ‘with the brothers’ (\* *amin-ny mirahalahy*)

In the case of other pronouns, the genitive form attaches phonologically to the preceding word, but nevertheless behaves as a stress-bearing element (e.g., first person inclusive *-ntsika* combines with *amin-* to form *aminintsika* ‘with us’). When one of these pronouns acts as the trigger of the complement clause selected by *amin-*, it appears that either the nominative or the genitive form may occur (iv). Speakers I consulted gave genitive forms, but an anonymous reviewer points out that other speakers strongly prefer the nominative in such examples, and internet searches suggest that the nominative forms occur more often in spontaneous usage. For speakers who require *isika* in (iv), it could be that the restriction against *-ko* and *-ny* extends to all bound pronouns: hence *-ntsika* is blocked from attaching to *amin-* by the intervening TopP clause boundary, triggering use of default nominative. For speakers who allow the genitive form in (iv), perhaps bound stressed pronouns (and bound proper names) combine with their hosts post-syntactically, such that *tamin-* and *-ntsika* need not form a constituent but must simply be linearly adjacent.

- (iv) *tamin'* [ { *isika* / ?*-ntsika* } mbola nipetraka tany Antsirabe ]  
 Pst.with 1inNom / 1inGen still Pst.AT.live Pst.there Antsirabe  
 ‘while we were still living in Antsirabe’

In the discussion in 6.1.1, I will leave this issue open and concentrate on the distribution of nominative vs. accusative m-case. If it turns out that a P head can license genitive m-case on a following clause-initial trigger, my account of accusative IPVC-triggers can easily be extended to cover genitive triggers in temporal clauses.

- (105) a. Mahita *an-dRakoto* sy (\**an-d*)*Rabe aho*  
 AT.see Acc-Rakoto and (Acc-)Rabe 1sNom  
 ‘I see Rakoto and Rabe’
- b. Nahita *anao* sy { *izaho* / ??*ahy* } *Rabe*  
 Pst.AT.see 2sAcc and 1sNom 1sAcc Rabe  
 ‘Rabe saw you and me’
- (106) a. Mahita [ *an-dRakoto* matory ] ary [ (\**an-d*)*Rabe misakafo* ] *aho*  
 AT.see Acc-Rakoto AT.sleep and (Acc-)Rabe AT.eat:meal 1sNom  
 ‘I see Rakoto sleeping and Rabe eating a meal’
- b. Nahita [ *anao* nitomany ] ary [ { *izaho* / ??*ahy* } natory ] *Rabe*  
 Pst.AT.see 2sAcc Pst.AT.cry and 1sNom 1sAcc Pst.AT.sleep Rabe  
 ‘Rabe saw you crying and me sleeping’

Below I offer an account for the generalization in (104). Here I follow a number of recent proposals according to which the m-case assigned to a DP is not a direct reflex of how that DP’s abstract Case feature is checked/valued in the syntax, but is instead determined by separate mechanisms.

### 6.1.1. Dissociating M-Case From Abstract Case

In recent Minimalist approaches, m-case assignment and abstract Case-licensing are taken to belong to distinct domains of grammar. Case-licensing is part of the narrow syntax, and is characterized as the deletion—and/or valuation—of an uninterpretable feature on the D head ([uCase]) via an Agree (probe-goal) relation between the DP and a functional head. By contrast, m-case assignment (in languages which have m-case) is ‘post-syntactic’, a matter of specifying how the DP is realized in the PF/morphology. Given that abstract Case and m-case belong to different domains, it should perhaps be unsurprising that the m-case assigned to a DP does not always directly reflect the syntactic position in which that DP is Case-licensed. The quirky case construction in Icelandic, where nominative m-case is dissociated from the subject Case position, is a well-known example of this. Phenomena implicating a many-to-many relationship between Case positions and m-cases have led a number of authors (Harley 1995, Marantz 2000, Schütze 2001, McFadden 2004, Pesetsky 2013, and others) to propose that m-case is not a direct morphological realization of [uCase] checking/valuation, but is instead the result of (partially) independent mechanisms operating at the syntax-morphology interface.<sup>29</sup>

In the spirit of these proposals, I would like to suggest that the m-case assigned to the Malagasy trigger is an artifact of the broader structural environment in which this DP appears, and is unrelated to how it is Case-licensed. In brief, I propose that triggers have their [uCase] feature checked ‘from below’ by a functional head within the lower TP; however, an embedded trigger can have its m-case determined ‘from above’ by a c-commanding head—just in case the trigger is in a local structural relation to that head, as can happen in the IPVC construction. This captures the generalization in (104), whereby the position of a TopP clause within the larger structure dictates the m-case of the DP trigger in its specifier.

Let us begin with how the trigger checks its [uCase] feature. If the trigger is a kind of dislocated topic, as I assume here, then it occupies a non-Case position at every point in the derivation and thus cannot check its [uCase] feature directly. However, I have proposed that the trigger forms a composed A'-chain with a null operator OP, which originates in an A-position and has its [uCase] feature checked when probed by a functional head within TP (see below for details). Since the [uCase] feature on OP is checked, I will assume that the [uCase] feature on the trigger DP is also checked when the trigger merges and forms a chain with OP. A mechanism of this sort is needed to handle Case-licensing of dislocated DPs generally. For instance, consider the dislocation construction in German, illustrated in (107) (exam-

<sup>29</sup> McFadden (2004) and others have taken this idea further by proposing that abstract Case should be eliminated from the theory completely, with the syntactic distribution of DPs captured by appealing to EPP features and other mechanisms. Since my analysis of Malagasy m-case does not bear directly on this question, I will continue to characterize DP licensing in the syntax in terms of the need to check a [uCase] feature.

ple from Schütze 2001). Presumably the DP *den Hans* has its [uCase] feature checked by virtue of forming a chain with the resumptive element *den*:

- (107) Den.....Hans<sub>i</sub>, den<sub>i</sub> mag ich nicht  
 the.Acc Hans him.Acc like I not  
 ‘Hans, I don’t like him’

The structural configuration in which the Malagasy trigger-OP chain checks its [uCase] feature can be determined, albeit indirectly, by looking at the voice morphology on the verb. Adopting the clause structure in (10) (section 2.1), I will assume that the T head probes the subject DP in SpecAspP, checking its [uCase], while *v* probes and checks [uCase] on an object DP. Accordingly, the presence of AT voice morphology on the verb indicates that OP has been probed by T, while TT morphology indicates that OP has been probed by *v* (see Pearson 2005a,b for a more detailed proposal along these lines). The relevant structures are diagrammed in (108a,b), respectively. Here the probe and goal that enter into a [uCase]-checking relation are boldfaced, while underlining indicates the links in the trigger-OP chain whose [uCase] feature is checked by the probe, and <OP> indicates the Case-position of the operator (‘Subj’ in (108b) marks the position of a non-trigger subject; recall also that the verb raises to T).

- (108) a. AT: [TopP Trigger<sub>[uCase]</sub> Top [TP OP<sub>[uCase]</sub> T [AspP <OP><sub>[uCase]</sub> Asp ... ] ] ]  
 b. TT: [TopP Trigger<sub>[uCase]</sub> Top [TP OP<sub>[uCase]</sub> T [AspP (Subj) Asp [<sub>VP</sub> **v** <OP><sub>[uCase]</sub> ... ] ] ] ]

I now turn to the m-case realization of the trigger. In some languages with dislocated topic constructions, the m-case of the topic matches the m-case of the (null or overt) resumptive element with which it forms a chain. This is what we find in (107) above, where *den Hans* is realized as accusative because it forms a chain with accusative *den*. In other situations, however, the dislocated topic appears in default m-case. Schütze (2001) gives examples from a number of languages, including the Greek example in (109) (from Johannessen 1998). Here the dislocated topic is in the default nominative form even though it forms a chain with an accusative resumptive clitic.

- (109) O.....paraksenos.....anthropos<sub>i</sub>, dhen ton<sub>i</sub> idhame  
 the.Nom strange.Nom person.Nom Neg him.Acc we.saw  
 ‘The strange person, we didn’t see him’

Malagasy triggers generally follow this latter pattern. Except under special circumstances, discussed below, the trigger is assigned m-case according to the spell-out rule in (110) (this same rule also accounts for the presence of nominative on *dia*-topics and pseudo-clefted DPs). The fact that the trigger is spelled out with default m-case does not present interpretive problems, since the syntactic role of the trigger (subject, object, etc.) can be recovered from the voice morphology on the verb, as outlined above.

- (110) A DP which is base-merged in an A'-position is realized in its default form (nominative).

Returning to the generalization in (104): We saw that when an IPVC functions as a trigger or is pseudo-clefted (103), the IPVC-trigger is spelled out as nominative, as schematized in (111a) below. This reflects the unmarked situation, I claim, and follows from (110). However, when the IPVC is spelled out as the complement of the perception verb, its trigger appears in the accusative form instead of the nominative (101b). To account for this, I propose that V assigns accusative m-case to its TopP complement, and this m-case gets expressed morphologically on the trigger DP in the specifier of TopP. Since a DP in Malagasy may bear at most one m-case, accusative m-case assigned by V overrides the default nominative which the trigger would otherwise receive. This is schematized in (111b) ([X] → [Y] is read as ‘[X] is overridden by [Y]’).<sup>30</sup>

- (111) a. [ ... [TopP DP<sub>[NOM]</sub> [Top' Top [TP ... ] ] ] ]  
 b. [<sub>VP</sub> **V** [TopP DP<sub>[NOM]</sub> →<sub>[ACC]</sub> [Top' Top [TP ... ] ] ] ]

<sup>30</sup> See McFadden (2004) for a similar view of m-case in German. McFadden argues that marked m-case (accusative, dative, genitive) overrides default nominative just in case the DP receiving m-case appears in the relevant structural configuration(s).

Why should the accusative m-case which V assigns to its TopP complement surface on the trigger DP in SpecTopP, overriding default nominative? To capture this, I will adopt a slightly simplified version of Pesetsky's (2013) theory of m-case assignment. Pesetsky treats m-case as a morphological reflex of categorial feature copying in the syntax, where feature copying occurs when a head (or a projection of a head) merges with a dependent. When a head  $\alpha$  selects a complement  $\beta$  to form  $[_\alpha \alpha \beta]$ , for example, the lexical category feature of  $\alpha$  is copied onto all the terms of  $\beta$ . If  $\beta$  is a DP, or contains a DP, the feature copied from  $\alpha$  may be realized on that DP—i.e., expressed through insertion of a particular m-case form when  $\beta$  is spelled out—subject to language-specific morphological rules. For instance, Pesetsky argues that accusative m-case in Russian is the realization of a V feature copied when a verb merges with its complement. Under this theory, the mechanisms of feature copying and realization are separate from those involved in the checking/valuation of [uCase] features on DP: hence there is no reason to expect that the m-case of a DP will directly reflect how that DP is Case-licensed.<sup>31</sup>

In accordance with Pesetsky's approach, merger of V with TopP in (111b) causes V's categorial feature to be copied onto every term of TopP, including the trigger in SpecTopP. Since the trigger is a DP, it will realize this categorial feature in the form of m-case. Based on the discussion of m-case in 2.2, I assume that a categorial feature copied from a V head will be realized as accusative in Malagasy (provided the DP that realizes that feature is a pronoun or proper name). Hence, the presence of a V categorial feature on the trigger in (111b) leads to insertion of the accusative form when the trigger is spelled out. On the other hand, if TopP does not merge with V or another selecting lexical head—as when an IPVC is pseudo-clefted or acts as the trigger of the higher clause—no categorial feature is copied onto TopP and its trigger. In the absence of a copied feature, the trigger is realized in its default nominative form (111a).

Of course, when V selects a TopP complement and copies its categorial feature onto the terms of TopP, not just any DP within TopP will realize that feature: merger of V with TopP results in accusative marking on the trigger in SpecTopP, but has no effect on the m-case of DPs more deeply embedded within TopP (i.e., DPs inside the TP). In phrase-structure terms, the categorial feature of V will be realized on a DP only if V locally c-commands that DP. To capture this fact, I follow Pesetsky (2013) in suggesting that m-case realization is constrained by cyclic spell-out.

As noted in 5.1.2, Chomsky (2001, 2006) has proposed that when an XP phase is formed in the derivation, the YP complement of the phase head X is spelled out (YP is the spell-out domain established by the XP phase). The m-case of a DP is presumably determined when that DP is spelled out, after which it can no longer be overridden by another m-case. I therefore suggest that the m-case of a DP will realize the categorial feature of a c-commanding head  $\alpha$  only if that DP has not yet been spelled out at the point in the derivation where feature copying from  $\alpha$  takes place (see Pesetsky 2013:87-89). In other words, the m-case of a DP may be determined by feature copying from  $\alpha$  only if the DP is in the same spell-out domain as  $\alpha$ . Consider the schematic structure in (112), where XP is the complement of the V head and A and B represent successively larger spell-out domains. The V feature which gets copied onto XP will be realized as accusative on DP<sub>1</sub> but not on DP<sub>2</sub>. This is because DP<sub>2</sub> has already been spelled out (as part of A) at the point in the derivation where V merges with XP, whereas DP<sub>1</sub> has not. DP<sub>1</sub> does not get spelled out until later in the derivation, when B is sent to the PF-interface.<sup>32</sup>

(112)  $[_B \dots V [_{XP} \dots DP_1 \dots [_A \dots DP_2 \dots ]]]$

<sup>31</sup> M-case realization is not entirely divorced from [uCase] checking, however. Pesetsky assumes that a categorial feature may be copied onto a DP only in the position where that DP is Case-licensed (2013:73). This ensures that if a DP undergoes EPP-driven movement, its m-case realization will be determined by its derived position rather than its base position. For instance, the subject of an English passive or unaccusative predicate will not be realized as accusative by virtue of being selected by a V head, because its [uCase] feature is not checked until it raises out of the complement of V to a higher position. As for the Malagasy trigger, its [uCase] feature is checked when it base-merges with Top' to form TopP, as discussed above. We therefore expect that SpecTopP is the position in which the trigger's m-case realization is determined, which is what I assume here.

<sup>32</sup> In differentiating phases from spell-out domains, I am following the model of cyclic spell-out in Chomsky (2001). Pesetsky (2013) adopts a slightly different approach: he assumes that the entire XP phase (rather than the complement of the phase head X) is a spell-out domain, and that XP is spelled out immediately after the point in the derivation where it merges with a head and feature copying takes place.

As noted in 5.1.2, I am assuming that TopP is a phase category in Malagasy. Once a TopP phase is created, the TP complement of Top is spelled out, at which point any DPs within that TP will have their m-case fixed and thus become unavailable for realizing a feature copied at a later step in the derivation. Hence, when V merges with TopP and its categorial feature is copied onto the terms of TopP, that feature will determine the m-case realization of the trigger DP, located at the edge of the phase (in SpecTopP), but it will not override the m-case of any DPs located inside TP due to the fact that TP has already been spelled out. Consider (113) below, for example. Merger of *nahare* with its TopP complement results in the IPVC-trigger being realized as accusative (*azy*), but has no effect on the form of the non-trigger DP *Rabe*, contained within the IPVC-predicate. This is because *Rabe* is fixed as genitive when the TP containing it is spelled out, immediately following the completion of the TopP phase. Since *Rabe* has been spelled out, its m-case cannot be overridden by accusative when *nahare* subsequently merges with TopP.

- (113) Nahare [TopP *azy* [TP nantsoin-*dRabe* ] ] *ahõ*  
 Pst.AT.hear 3Acc Pst.TT.call-Rabe(Gen) 1sNom  
 ‘I heard him/her being called by Rabe’

The mechanisms which govern m-case assignment in Malagasy are summarized in (114). Note that (114a,b) are assumed to be universal, while (114c) (which subsumes (110) above) is language-specific.<sup>33</sup>

- (114) a. *Feature copying*: When  $\alpha$  merges with  $\beta$  to form [ $\alpha$   $\beta$ ], the categorial feature of  $\alpha$  is copied onto the terms of  $\beta$  and realized as the corresponding m-case on any accessible DP within  $\beta$ .  
 b. *Accessibility*: A DP is accessible for realization of a categorial feature if (i) its [uCase] feature has been checked, and (ii) it has not already been spelled out.  
 c. *M-case realization at Spell-out (Malagasy-specific)*: A DP which receives a categorial feature from V is realized as accusative. A DP which fails to receive a categorial feature is realized as nominative.

If the IPVC-trigger is realized as accusative due to V feature copying when the IPVC merges with the perception verb, this raises the question of why other types of embedded triggers are not also realized as accusative. As illustrated in (101a), repeated below as (115), the trigger of an embedded clause headed by the complementizer *fa* is always realized as nominative. Assuming the embedded clause merges with the verb, causing a V feature to be copied onto the terms of the embedded clause, why is nominative m-case on the embedded trigger not overridden by accusative? This follows straightforwardly from the definition of accessibility in (114b) above. In (115) *nahita* selects a CP complement, which constitutes a phase. The embedded trigger *isika* is properly contained within the spell-out domain established by this CP phase, namely FinP. Since *isika* is not at the edge of the CP, but rather inside FinP, it has already been spelled out at the point where CP merges with *nahita*, which renders it inaccessible for realizing a feature copied from *nahita*. Since no other categorial feature has been copied onto the embedded trigger prior to spell-out, it is realized in the default nominative form, just like the trigger of a root clause.

- (115) Nahita *Rasoã* [CP *fa* [FinP *namaky boky isika* ] ]  
 Pst.AT.see Rasoã Comp Pst.AT.read book 1inNom  
 ‘Rasoã saw that we were reading books’

In short, an embedded trigger will realize accusative m-case from a higher V head only if it is at the edge of the phase that merges with V. This situation obtains in TopP complements, but not in full CP comple-

<sup>33</sup> The wording in (114a) is modeled closely on Pesetsky (2013:88). I have simplified the formulation by omitting certain technical details which Pesetsky introduces to handle morphological complexities in Russian that have no counterpart in Malagasy. Another difference is that Pesetsky treats that condition in (114b.i) as a restriction on feature copying, rather than incorporating it into the definition of accessibility. Note also that the statement in (114c) is incomplete, since it fails to mention genitive m-case. As discussed in 2.2, possessors, complements of prepositions, and non-trigger subjects normally take the genitive form, suggesting that genitive realizes the categorial feature of various heads—e.g., the P head, or the T head in the case of a subject sitting in SpecAspP (cf. the bracketed structure in (108b)).

ments. Hence, my assertion that IPVCs lack a CP or FinP layer, which explains the absence of predicate raising in these clauses, simultaneously accounts for the variability in the m-case of the IPVC-trigger.

### 6.1.2. A Note on IPVC-Triggers and Definiteness

In the previous section I offered an account of the generalization in (104), repeated below as (116):

- (116) If a TopP clausal dependent is spelled out in a position where m-case K would be assigned to a DP, then the trigger of that TopP clause will be realized in m-case K.

It is possible that (116) can be subsumed under a broader generalization regarding the surface realization of IPVC-triggers. Recall from section 2.1 that when a direct object nominal appears inside the predicate, it can take the form of a DP headed by a determiner such as *ny* and interpreted as definite, or it can take the form of a bare NP, which lacks an overt determiner and is interpreted as indefinite (117a). By contrast, the trigger of the clause cannot be a bare NP (117b) but must instead be a full DP. Keenan (1976) and others have characterized this as a semantic restriction: triggers must be definite. Such a restriction might be expected if the trigger is a kind of topic and must pick out a discourse-accessible referent.

- (117) a. Nahita *mpianatra* Rakoto  
 Pst.AT.see student Rakoto  
 ‘Rakoto saw a student’  
 b. \* Hitan-dRakoto *mpianatra*  
 TT.see.Gen-Rakoto student  
 ‘Rakoto saw a student’

Now consider the data in (118). Here we see that when an IPVC acts as the trigger of the higher clause, with the perception verb in the TT form, the IPVC-trigger cannot be a bare NP (118a). This is what we expect based on (117b). However, a bare NP is permitted in this position when the IPVC is inside the predicate with the perception verb in the AT form (118b). As indicated by the gloss, the IPVC-trigger in (118b) is interpreted as indefinite. It seems that, unlike the trigger of a matrix clause (or a *fa*-clause), an IPVC-trigger can be a bare NP—but only if the IPVC itself occupies a position where a bare NP object is permitted (cf. (117a)). This is reminiscent of the generalization in (116): the position of TopP clause determines not only the m-case of its trigger, but also whether that trigger needs an overt determiner or not.

- (118) a. \* Hitan-dRakoto [ *mpianatra* namaky boky ]  
 TT.see-Rakoto student Pst.AT.read book  
 ‘Rakoto saw a student reading a book’  
 b. Nahita [ *mpianatra* namaky boky ] Rakoto  
 Pst.AT.see student Pst.AT.read book Rakoto  
 ‘Rakoto saw a student reading a book’

How do we know that the bracketed string in (118b) is in fact an IPVC and not a bare NP containing a relative clause modifier (meaning ‘a student who was reading a book’)? Evidence for this comes from (119), where *mpianatra miasa* acts as the antecedent for the demonstrative *izany* (see 4.2). The speakers I consulted confirmed that in (119), *mpianatra miasa* denotes an event of working rather than a student.

- (119) Mahita [ *mpianatra* miasa ]<sub>i</sub> aho, ary mahita *izany*<sub>i</sub> koa Rabe  
 AT.see student AT.work 1sNom and AT.see that also Rabe  
 ‘I see (the event of) a student working, and Rabe sees that (event) too’

Sentences like (118b) and (119) present a challenge for my claim that IPVCs are clauses whose initial nominal occupies the embedded trigger position. If triggers must be definite, then why would the indefinite NP *mpianatra* be allowed as the trigger of an IPVC (just in case the IPVC is spelled out as the complement of the perception verb)?

It has generally been assumed that the presence or absence of an overt determiner correlates straightforwardly with semantic definiteness in Malagasy: DPs are interpreted as definite while NPs are interpreted as indefinite. However, recent work has called this assumption into question. Paul (2009) shows that in fact the NP/DP distinction correlates with definiteness only in positions where either an NP or a DP is licensed syntactically, such as when the nominal is the non-trigger object of a verb. In positions where only DPs are licensed, such as the matrix trigger position, the correlation does not hold. While there is a strong tendency for trigger DPs to be definite, sentences with indefinite triggers are possible. Keenan (2008) provides a number of elicited and textual examples, and concludes that Malagasy does not impose a strict definiteness requirement on triggers. Examples where a trigger DP is interpreted as indefinite are given in (120a) (based on Keenan 2008:252) and (120b) (Fugier 1999:17, cited in Paul 2009):

- (120) a. Nanatrika ny lanonana ny mpianatra maro  
 Pst.AT.attend Det celebration Det student many  
 ‘Many students attended the celebration’
- b. Ka nandositra sady nokapohiko ny hazo ...  
 then Pst.AT.flee and Pst.TT.hit.1sGen Det tree  
 ‘Then I ran away and hit a tree...’

The sentence in (120a) is licit in a discourse context where students are being mentioned for the first time, even though *ny mpianatra maro* includes the determiner *ny* (omitting *ny* would render the sentence ungrammatical). Similarly for (120b): the referent of *ny hazo* need not be discourse-familiar, unique, or otherwise identifiable from the context; hence the trigger in (120b) is semantically non-specific as well as indefinite.

Triggers thus differ from topicalized nominals in some other languages, which must be definite/specific. The acceptability of sentences like (120) is understandable if the referent of the trigger is not necessarily interpreted as a discourse topic, but instead as the theme in a theme-rheme structure—that is, as the argument of clause-level predication. Although there may be a strong pragmatic tendency for themes to be discourse-familiar, this is by no means a requirement. Based on examples like (120b), it appears that the trigger DP may simultaneously introduce a new referent into the discourse and attribute to that referent the property named by the predicate.

Since triggers need not be definite, the fact that *mpianatra* ‘student’ is interpreted as indefinite in (118b) and (119) does not, in and of itself, argue against identifying *mpianatra* as a trigger. But why should an IPVC-trigger be allowed to take the form of a bare NP, whereas the trigger of a matrix clause must include an overt D head even when interpreted as indefinite? Following Paul (2009), I propose that NP arguments are actually DPs containing a phonologically empty D head ( $\emptyset_D$ ). In contexts where either  $\emptyset_D$  or an overt determiner may occur—e.g., complement of V—the choice of the null determiner signals that the DP is semantically indefinite. However,  $\emptyset_D$  is subject to a syntactic licensing requirement, and in contexts where this requirement is not met, both definite and indefinite DPs must include an overt determiner such as *ny*. Suppose, for example, that  $\emptyset_D$  must be licensed by entering into a local c-command relation with a V head (cf. Massam 2001 on bare NP arguments in Niuean, which must be adjacent to the verb). If so, this would explain why a DP can be headed by  $\emptyset_D$  only when it occurs either as the complement of V (117a), or as the specifier of the complement of V (118b). In other words, the same configurations in which a DP is realized as accusative also license the occurrence of  $\emptyset_D$  just in case that DP is interpreted as indefinite.

### 6.1.3. A Parallel Case: Long-Distance Agreement in Tsez

In section 6.1.1 I argued that when the perception verb merges with an IPVC (= TopP) complement, the categorial features of the verb are copied onto the terms of TopP and realized as accusative on any DP within TopP which has not yet been spelled out—namely, the trigger in SpecTopP, which is located outside the TP spell-out domain established by the TopP phase. As a result, even though the trigger is Case-licensed within the IPVC (by forming a chain with a null operator in TP), feature copying creates a mor-

phological dependency between the trigger and the verb in the higher clause. This is schematized below, where the matching [MF] subscripts on V and DP indicate morphological feature sharing. In 6.1.2 I speculated that this same configuration enables V to license a null D head on DP when the latter is indefinite.

(121) [VP ... V<sub>[MF]</sub> [TopP DP<sub>[MF]</sub> [Top' ... ] ] ]

It is interesting to note that feature sharing involving the configuration in (121) is not restricted to Malagasy. I am aware of at least one other, unrelated language where an embedded topic DP (Case-licensed in its own clause) enters into a morphological dependency with the verb in the higher clause, but only when the higher verb and the embedded DP are in a local c-command relation—i.e., only when the verb selects a TopP complement with the DP in its specifier. The example in question involves cross-clausal agreement in Tsez, a Nakh-Daghestanian language of the Caucasus, as analyzed by Polinsky and Potsdam (2001) (P&P). The Tsez and Malagasy cases involve distinct morphological operations: in Malagasy we are dealing with dependent marking (a verb determining the m-case of a DP), whereas the Tsez construction involves head marking (a verb indexing the  $\phi$ -features of a DP). Nevertheless, as I will show, the structural configuration is the same in both instances.

Complex sentences in Tsez are illustrated in (122) below, where the verb *iy-* ‘know’ selects an embedded clause headed by a nominalized participial verb (P&P 2001:609). Tsez is an OV language with an ergative m-case alignment and four noun classes (I-IV). Verbs agree in number and noun class with their absolutive arguments: thus in (122) the embedded verb *āc* ‘eat’ takes the class III singular prefix *b-* to mark agreement with its class III absolutive object *magalu* ‘bread’. With regard to the matrix verb *iy-*, there are two different agreement possibilities. In (122a) we see the default option, where *iy-* agrees with its complement clause. Participial clauses formed with the nominalizer *-li* belong to class IV, and so *iy-* is marked with the class IV agreement prefix *r-*. However, under the right circumstances the matrix verb can instead agree with the absolutive argument in the embedded clause: this is shown in (122b), where *iy-* carries the class III marker *b-* to mark agreement with *magalu*. P&P refer to this latter pattern as LONG-DISTANCE AGREEMENT, since the verb indexes not its own complement, but rather a sub-constituent of that complement.<sup>34</sup>

- (122) a. Eni-r [ už-ā magalu b-āc'-ru-li ] r-iy-xo  
 mother-Dat boy-Erg bread.III.Abs III-eat-PstPrt-Nzn.IV IV-know-Pres  
 ‘Mother knows [ the boy ate the bread ]’  
 b. Eni-r [ už-ā magalu b-āc'-ru-li ] b-iy-xo  
 mother-Dat boy-Erg bread.III.Abs III-eat-PstPrt-Nzn.IV III-know-Pres  
 ‘Mother knows [ the boy ate the bread<sub>Topic</sub> ]’

Crucially, local agreement and long-distance agreement do not alternate freely. In (122b) *magalu* is interpreted as the topic of the embedded clause while in (122a) it is interpreted as a non-topic. The availability of long-distance agreement is thus sensitive to information structure as well as m-case: the matrix verb will agree with an embedded argument only if that argument is an absolutive topic. Indeed, when this condition is met, long-distance agreement appears to be obligatory: (123) shows that when the embedded absolutive argument is morphologically marked as a topic, here with the contrastive topic suffix *-gon*, local agreement—i.e., class IV agreement with the complement clause—is not possible (P&P 2001:610).

- (123) Eni-r [ už-ā magalu-gon b-āc'-ru-li ] { *b-* / \**r-* } iy-xo  
 mother-Dat boy-Erg bread.III.Abs-Top III-eat-PstPrt-Nzn.IV III- / IV- know-Pres  
 ‘Mother knows [ the boy ate the bread<sub>Topic</sub> ]’

On the basis of island effects and other evidence, P&P argue that topics in Tsez undergo A'-movement, either overtly or covertly, to a position at the left periphery of the clause, SpecTopP (124). They conclude

<sup>34</sup> Cf. Bruening (2001) on a similar long-distance agreement construction in the Algonquian language Passamaquoddy. P&P cite additional examples of cross-clausal agreement in a number of genetically unrelated languages, including Hindi/Urdu, Chukchi, and Hungarian (though they do not assume that a single analysis will necessarily apply to all these constructions).

that an absolutive DP must be at the edge of the embedded clause in order to enter into an agreement relation with the verb in the higher clause.

(124)  $[_{TopP} \text{magalu}(-gon)_i [_{Top'} \text{Top} [_{IP} \text{u}\check{z}\bar{a} \text{t}_i \text{b}\bar{a}c'ru\bar{f}i ] ] ]$

Crucially, the embedded clause must be the complement of the verb in order for long-distance agreement to take place: P&P show that the verb may not agree with the absolutive topic in an adjunct clause. It seems, then, that the V head must c-command the embedded topic in order to agree with it. Moreover, the c-command relationship must be local: hence, long-distance agreement is blocked if a CP projection intervenes between the V head and the DP in SpecTopP. Examples such as (125) (P&P 2001:635) demonstrate this locality restriction. In (125a) we see that *iy-* cannot agree with *magalu*—even if *magalu* is interpreted as a topic—when the embedded clause includes the suffixed complementizer *-tlin*, which P&P locate in the C head. Similarly, (125b) shows that long-distance agreement with *micxir* ‘money’ is blocked when the embedded clause contains a wh-phrase, which P&P assume undergoes movement to the specifier of CP. P&P conclude that the verb can agree with the embedded topic only if, at some point in the derivation, the embedded topic occupies the highest specifier c-commanded by the verb—that is, only if the verb selects a TopP complement rather than a CP complement.

(125) a. \* Eni-r  $[_{CP} [_{TopP} \text{u}\check{z}\bar{a} \text{magalu} \text{b}\bar{a}c'\text{-si} ] \text{-tlin} ] \text{b-iy-xo}$   
 mother-Dat boy-Erg bread.III.Abs III-eat-Pst -Comp III-know-Pres  
 ‘Mother knows the boy ate the bread’  
 b. Eni-r  $[_{CP} \text{neti} [_{TopP} \text{c'ohor}\bar{a} \text{micxir} \text{b-ok'ak'-ru-li} ] ] \{r-/*b-\} \text{iy-xo}$   
 mother-Dat when thief-Erg money.III.Abs III-steal-PstPrt-Nzn IV-/III- know-Pres  
 ‘Mother knows when the thief stole the money’

In short, long-distance agreement in Tsez obtains in precisely the configuration shown in (121) above (abstracting away from the linear order of V and TopP). It seems plausible, then, that this long-distance agreement results from the same mechanisms that lead to accusative m-case on the IPVC-trigger in Malagasy. In both cases a V and DP enter into a local c-command relationship, resulting in the establishment of a ‘long-distance’ morphological dependency (feature sharing across a clause boundary). The only difference is that in Malagasy, this relationship manifests itself in the m-case realization of the DP, while in Tsez it manifests itself as  $\phi$ -feature agreement on V.<sup>35</sup>

## 6.2. IPVCs and Pseudo-Relative PVCs

In many Romance languages, direct perception of an event may be expressed using what is referred to as the PSEUDO-RELATIVE construction, discussed by Guasti (1993), Cinque (1995), Felser (1999), and others. I conclude this paper by noting some interesting structural similarities between pseudo-relative PVCs and IPVCs, though I leave it to future research to determine whether the two constructions should receive the same analysis.

Pseudo-relative PVCs are illustrated in (126a) for Italian and (126b) for French (Cinque 1995:244, with glosses added). Here the perception verb selects a constituent consisting of a DP (*Mario*) followed by what appears to be a finite relative clause denoting a property predicated of the DP. For convenience I will refer to the DP as the PSEUDO-RELATIVE SUBJECT (PR-SUBJECT), and underline it in the examples.

(126) a. Ho visto [ Mario che correva a tutta velocità ]  
 I.have seen Mario that was.running to all speed  
 ‘I saw Mario running at full speed’

<sup>35</sup> In sentences like (122b) and (123), topic movement is covert—that is, the embedded topic *magalu(-gon)* is spelled out in the canonical object position, within TP, rather than in SpecTopP. However, given cyclic spell-out, I must assume that the embedded topic DP is in the same spell-out domain as the higher verb in order for the  $\phi$ -features of DP to be realized on that verb. I must therefore assume that an unpronounced copy of the embedded topic merges in the specifier of TopP before the TP is spelled out, and it is this unpronounced copy whose  $\phi$ -features are copied onto the verb when V subsequently merges with TopP.

- b. J'ai vu [ Mario qui courait à toute vitesse ]  
 I.have seen Mario who was.running to all speed  
 'I saw Mario running at full speed'

Guasti (1993) and Cinque (1995) show that, under the relevant event perception reading, pseudo-relatives pattern as clausal complements, just as I have argued for IPVCs. For example, they can be clefted, focus-fronted, or coordinated with another pseudo-relative. Moreover, Guasti notes that pseudo-relatives obey the same tense-matching constraint that I have observed for IPVCs: the tense of the embedded verb must match the tense of the perception verb, showing that the pseudo-relative clause lacks an independent tense specification despite being morphologically finite. Given how trigger-predicate clauses resemble relative clause constructions in Malagasy (cf. the discussion in section 4.2), we might wonder whether IPVCs and pseudo-relative PVCs instantiate the same structure.

I already noted in 4.2 one potential piece of evidence against a pseudo-relative structure for IPVCs, namely that the predicate within the IPVC cannot be introduced by the relative operator *izay* (see example (73)). Nevertheless, there are numerous parallels between the structure I assume for IPVCs and the structures which Guasti (1993) and Cinque (1995) propose for pseudo-relative PVCs. Guasti, for instance, identifies the complementizer *che* as the head of the pseudo-relative. She analyzes *che* as the spell-out of a functional head which she calls AgrC (since it is associated with agreement features), located above TP and below the highest C head in the clausal hierarchy—i.e., in roughly the same position where I locate the Top head. The AgrC head *che* selects a sentential complement (e.g., *correva a tutta velocità* in (126a)) containing a *pro* subject. This complement stands in a predication relation with a DP in SpecAgrCP, the PR-subject, which binds *pro*. A version of Guasti's structure is given in (127a).<sup>36</sup> This is very similar to the structure I adopt for IPVCs (127b). The major differences between the two structures are: (i) The head which establishes the predication relation between the DP and TP is null (Top) in Malagasy but overt (*che*) in Italian. (ii) I assume that the empty category in TP is an operator rather than *pro*.

- (127) a. [<sub>AgrCP</sub> Mario<sub>i</sub> **che** [<sub>TP</sub> *pro*<sub>i</sub> correva a tutta velocità ] ] (Guasti's PR structure, updated)  
 b. [<sub>TopP</sub> io mpianatra io<sub>i</sub> **Top** [<sub>TP</sub> *OP*<sub>i</sub> namaky boky ] ] (my structure for IPVCs)

Interestingly, pseudo-relative PVCs pattern with IPVCs with respect to A-binding. As Cinque (1995) notes, the PR-subject can be a pronoun coindexed with the higher subject but cannot be a locally-bound reflexive. This is illustrated in (128) (Cinque 1995:267, with glosses and brackets added). Thus, a pseudo-relative PVC constitutes the local binding domain for the PR-subject, just as an IPVC constitutes the local binding domain for its trigger.

- (128) Nel filmato, Maria<sub>i</sub> vide [ Gianni che scappava ] e [ { lei<sub>i</sub> / \*se stesso<sub>i</sub> }  
 in.the film Maria saw Gianni that was.fleeing and she / herself  
 che lo rincorreva ]  
 that him was.chasing  
 'In the film, Maria<sub>i</sub> saw Gianni running away and her(self)<sub>i</sub> chasing him'

Finally, m-case realization on PR-subjects follows a pattern reminiscent of what we find for IPVC-triggers. A pronominal PR-subject normally appears in the accusative form when the pseudo-relative is in complement position, as in (129) (Cinque 1995:266). To reconcile this with the binding facts in (128), Cinque proposes that the verb does not assign accusative directly to the PR-subject—that is, pseudo-relatives are not ECM complements. Instead, the verb assigns accusative to the pseudo-relative complement as a whole, after which the accusative feature percolates down to the PR-subject, giving the appearance of ECM. This is very similar to what I have proposed for accusative m-case realization on IPVC-triggers.

<sup>36</sup> I have updated this structure slightly: Guasti assumes that subject agreement is located in an AgrS head, and thus labels the complement of *che* AgrSP rather than TP.

- (129) Ha visto [ *me* che fumavo per strada ]  
 s/he.has seen me.Acc that was.smoking for street  
 ‘S/he saw me smoking in the street’

Cinque (1995:266-267) observes that when the pseudo-relative occurs in a position where accusative assignment is blocked—for instance, when it is the subject of the higher clause (130a), or coordinated with another pseudo-relative (130b)—the PR-subject instead appears in the nominative form (compare (130b) with the Malagasy example in (106b)). The m-case of the PR-subject is thus dependent on the structural position of the pseudo-relative clause that contains it, parallel to what we find with IPVCs. Cinque concludes that the PR-subject is Case-licensed internal to the pseudo-relative, and gets realized as nominative in situations where accusative feature percolation from a higher verb fails to occur.

- (130) a. [ { *io* / \**me* } che fumavo per strada ] è uno spettacolo che non raccomando  
 I me that was.smoking for street is a sight that not I.recommend  
 a nessuno  
 to no-one  
 ‘Me smoking in the street is a sight that I cannot recommend to anyone’
- b. Se vedi [ *Maria* che scappa ] e [ { *io* / \**me* } che la inseguo ], non farci caso  
 if you.see Maria that flees and I me that her chase don’t bother  
 ‘If you see Maria running away and me chasing her, don’t bother’

Given the formal and semantic parallels between IPVCs and pseudo-relatives, it might be possible to extend my analysis of the former to account for the latter. Perhaps pseudo-relatives are also TopP clauses, with *che* spelling out the Top head and the PR-subject located in the specifier of TopP, from which position it binds a null resumptive element (*e*) inside TP:<sup>37</sup>

- (131) [ <sub>TopP</sub> <sub>DP<sub>i</sub></sub> [ <sub>Top</sub> Top [ <sub>TP</sub> ... e<sub>i</sub> ... ] ] ]

It is worth noting, however, that pseudo-relatives look quite different from simple root clauses in Romance. By contrast, I have argued that IPVCs resemble root clauses in Malagasy quite closely, differing from them mainly in the absence of predicate raising (TP-movement over the trigger). This might argue against pursuing a unified analysis for pseudo-relatives and IPVCs. On the other hand, we might simply attribute this discrepancy to a difference in how root clauses are constructed in the two types of languages. Perhaps both Malagasy and the Romance languages allow an event to be expressed by a TopP whose DP specifier enters into a predication relation with the TP complement of Top, as in (131). The difference is that in the Romance languages, this TopP structure appears only in embedded contexts—e.g., the complements of certain verbs, such as perception verbs—whereas in Malagasy an eventive TopP forms the core for all clause types, whether selected by a perception verb, or combining with a Fin head (followed by TP raising to SpecFinP) to form a propositional clause. In the interests of space, I leave a full consideration of this possibility for future research.

## 7. Summary

In this paper I considered the construction in (132a) below, involving direct perception of an event. The bracketed string in (132a) closely resembles the unmarked root clause in (132b), except that the trigger *ny gidro* precedes the predicate phrase *mihinana ny voasary* rather than following it. I argued that this word order difference is due to a difference in the spell-out position of the predicate phrase rather than a difference in the position of the trigger. In consequence of this, the construction in (132a) provides indirect evidence that predicate-initial order in Malagasy is the result of a predicate-raising operation (Pearson 1998, 2001; Rackowski and Travis 2000; Travis 2006). In root clauses, as well as embedded clauses denoting a proposition, the predicate phrase moves leftward over the trigger to satisfy an EPP feature in the left pe-

<sup>37</sup> This would presumably be a different TopP category from the one proposed by Rizzi (1997) (see footnote 9).

riphery. However, predicate raising is blocked in event-denoting complements of perception verbs, resulting in a surface order where the trigger precedes the predicate phrase.

- (132) a. Mijery [ ny...gidro mihinana ny voasary ] ny...ankizy  
 AT.watch Det lemur AT.eat Det orange Det children  
 ‘The children are watching the lemur eating the orange’
- b. Mihinana ny voasary ny...gidro  
 AT.eat Det orange Det lemur  
 ‘The lemur is eating the orange’

In support of this analysis, I presented evidence that the bracketed string in (132a) is a constituent, selected by the perception verb as its complement. I also showed that complements of this type denote events rather than individuals, and are structurally distinct from DPs containing relative clause modifiers, patterning instead as clauses with respect to coordination and other tests. I dubbed these constituents INVERSE-ORDER PERCEPTION VERB COMPLEMENTS (IPVCs).

Having established that IPVCs are clauses, I presented evidence showing that trigger-predicate order in IPVCs is not derived by movement of the trigger over the predicate. The trigger does not move into the higher clause (raising to object), nor does it raise over the predicate to the edge of the embedded clause to have its Case feature licensed by a head in the higher clause (ECM-driven movement). I also argued that although IPVCs are not introduced by a complementizer, and thus presumably lack a CP layer, they must nevertheless be larger than TP—and therefore larger than non-finite PVCs in English and Romance languages. In support of this claim, I showed that IPVC-triggers, unlike ECM subjects, cannot be locally A-bound by a DP in the higher clause. In this respect IPVCs behave as phase domains, setting them apart from AspP and TP complements in other languages. I concluded that the IPVC-trigger is spelled out in the same position as the trigger of predicate-initial clauses, namely the specifier of a functional projection located below CP and above TP, which I label TopP (topic phrase). Data from *wh*-in-situ and pronoun distribution was provided to support the claim that IPVC-triggers are spelled out in the same position as triggers of predicate-initial clauses.

In the absence of evidence that the trigger has raised over the predicate, I proposed that the surface order in IPVCs instead results from the failure of the predicate to raise over the trigger. I connected this absence of predicate raising to the fact that IPVCs denote events rather than propositions, and lack a tense specification independent of that in the higher clause. In propositional clauses the finiteness head *Fin*, which selects TopP as its complement, probes TP to check/value a [T] feature. Since *Fin* also has an EPP requirement, establishment of a probe-goal relation between *Fin* and TP causes TP to raise over the trigger to SpecFinP (predicate raising). On the other hand, clauses which denote events rather than propositions, such as IPVCs, lack a *Fin*P layer. In the absence of a *Fin* head to probe TP, TP does not raise and is thus spelled out to the right of the trigger.

Having laid out and defended my analysis, I considered a potential challenge for my claim that IPVCs are not ECM complements, having to do with the morphological case (*m*-case) of the IPVC-trigger. When the IPVC is spelled out as the complement of the perception verb, its trigger takes the accusative form; but when the IPVC is pseudo-clefted or acts as the trigger of the superordinate clause, its own trigger appears in the nominative. In explaining this pattern, I follow a number of recent authors who argue that the *m*-case of a DP is not a direct morphological reflex of syntactic Case-licensing. I suggested that the trigger is base-generated in SpecTopP and checks its abstract Case feature by binding a null operator within the TP predicate. The morphological form of the trigger is determined by the larger structural context in which TopP occurs. Following Pesetsky’s (2013) theory of *m*-case, I assume that when TopP merges with a V head, the categorial feature of V is copied onto the terms of TopP and gets realized as accusative on the trigger in SpecTopP. Otherwise the trigger appears in the nominative, which is the morphological default for Malagasy DPs. I showed that *m*-case assignment across a clause boundary in Malagasy occurs in the same structural configuration as cross-clausal agreement in the Caucasian language Tsez. I concluded by noting some parallels between IPVCs and pseudo-relative PVCs in languages like Italian.

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