Predicate Raising and Perception Verb Complements in Malagasy

Abstract

Malagasy clauses have a bipartite structure, consisting of a predicate phrase followed by a topic-like constituent called the trigger, specifying the argument of predication. Normally the predicate phrase precedes the trigger. Opinions differ as to whether predicate-initial order is base-generated or derived through predicate raising. Here I argue in favor of predicate raising, based on evidence from clausal complements in sentences denoting direct perception of an event. These complements resemble matrix clauses, but exhibit an order where the trigger precedes the predicate phrase. I show that these complements are clauses (rather than DPs, VPs, or non-constituents), and that they are large enough to constitute the local binding domain for their trigger. I also present evidence that the trigger in perception verb complements has not undergone fronting. 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 phrase. I propose that predicate raising in unmarked clauses is an effect of the need to check a [T(ense)] feature in the left periphery, and that [T] feature checking is absent in clauses (such as perception verb complements) which denote events rather than propositions.

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

1. Introduction

Malagasy, an Austronesian language of Madagascar, exhibits predicate-initial order. Most clauses have a bipartite structure comprised of a *predicate phrase* followed by a definite/specific DP referred to here as the *trigger* (Pearson 2005a, cf. Schachter 1987 on Tagalog). Examples are given in (1) below. Evidence from coordination and particle placement shows that the predicate phrase forms a constituent to the exclusion of the trigger (see Keenan 1976, Dahl 1996). For instance, the yes/no question particle *ve* appears at the right edge of the predicate phrase. In (1) (and elsewhere throughout the paper) *ve* is given in parentheses to indicate the boundary between the predicate phrase and the trigger.[1]

(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'

[1] The following abbreviations are used in the glosses: 1ex: 1st person plural exclusive, 1in: 1st person plural inclusive, 1s: 1st person singular, 2s: 2nd person singular, 2p: 2nd person plural, 3: 3rd person (singular or plural), Acc: accusative, AT: actor-trigger voice, CT: circumstantial-trigger voice, Det: determiner, Foc: focus particle, Gen: genitive, Imp: imperative, Irr: irrealis/future, Lk: linker, Neg: negative marker, Nom: nominative, Obl: oblique marker, Part: particle, Pst: past, Rel: relative clause (marker), Top: topic marker, TT: theme-topic voice.

I have opted not to divide the words in the Malagasy examples into their constituent morphemes, since morphological structure plays no role in the discussion. The hyphens in the examples are part of the Malagasy orthography, and indicate the phonological fusion of two lexical words (e.g., a clitic and its host) when they form part of a single phonological word.

The trigger denotes the argument of sentence-level predication, identifying the participant in the clause to which the speaker assigns greatest topicality. As in other languages of the Philippine type, the form of the trigger is invariant, while its grammatical function is encoded by *voice* inflection on the verb. When the trigger bears the external argument (or *actor*) relation, the verb takes *actor-trigger* (AT) morphology, as in (1) above and (2a) below. When an internal argument functions as the trigger, the verb takes *theme-trigger* (TT) morphology, as in (2b). Finally, the verb takes *circumstantial-trigger* (CT) morphology when the trigger bears an oblique relation such as instrument, beneficiary, goal, or location, as in (6c). Notice that in non-AT clauses the actor remains inside the predicate phrase, immediately following the verb, with which it forms a prosodic unit.[2] In each case, the trigger properly follows the predicate phrase (Malagasy contrasts in this respect with less-configurational Philippine-type languages such as Tagalog).[3]

(2) a. Mamono akoho amin' ny antsy (ve) ny mpamboly
AT.kill chicken with Det knife Det farmer
'The farmer is killing chickens with a/the knife'

b. Vonoin' ny mpamboly amin' ny antsy (ve) ny akoho
TT.kill Det farmer with Det knife Det chicken
'The chickens are being killed by the farmer with a/the knife'

c. Amonoan' ny mpamboly akoho (ve) ny antsy
CT.kill Det farmer chicken Det knife
'The knife is being used by the farmer to kill chickens'

The same predicate-initial order found in root clauses also occurs in embedded contexts. This is illustrated by the examples in (3), where the matrix verb selects a complement clause (in brackets) introduced by the complementizer *fa*. The selecting verb may appear in the AT form (3a), in which case the complement clause is normally extraposed to the right of the matrix trigger (note the position of *ve* in this sentence). Often, however, the selecting verb will appear in the TT voice (3b); here, presumably, the complement clause itself functions as the matrix trigger.

(3) a. Mihevitra (ve) ny vehivavy [fa mitomany ireo zaza ireo]
AT.think Det woman that 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 that AT.cry these child these
'The woman thinks that these children are crying'

Guilfoyle, Hung and Travis (1992) locate the trigger in the specifier of a functional projection XP (which they identify as IP). To account for predicate-initial order, they invoke a directionality parameter whereby

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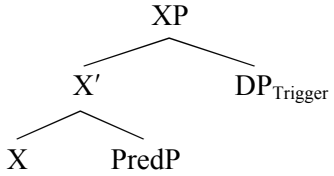
[2] When the actor is a pronoun or a proper name, it combines with the non-AT verb into a single phonological unit, as reflected in the orthography: e.g., *vonoin(a)* + *-ko* '1s' > *vonoiko* 'killed by me'; *vonoin(a)* + *Rasoa* > *vonoin-dRasoa* 'killed by Rasoa'. The orthographic *d* in *vonoin-dRasoa* reflects a phonological change whereby *n* and *r* merge at a morpheme boundary to become a prenasalized apico-alveolar affricate (written *ndr*).

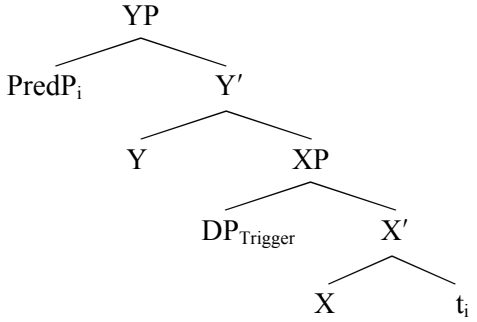
[3] An ongoing debate involves whether the trigger should be analyzed as a *subject*, occupying an A-position (e.g., Guilfoyle, Hung and Travis 1992); or as a *topic*-like element occupying an A′-position (Pearson 2005a). I return to the status of the trigger below. For detailed discussion of voice marking and trigger selection in Malagasy, see Keenan (1976, 1995), Rabenilaina (1998), Paul (2000), and Pearson (2005b). General information on Malagasy morphosyntax can be found in Pearson and Paul (1996), Keenan and Polinsky (1998), Paul (1998), Rasoloson and Rubino (2005), and the many references therein.

this specifier is spelled out to the right of its X′ sister, containing the predicate phrase. This is schematized in (4). However, Pearson (1998, 2001), Rackowski and Travis (2000), and Travis (2006) have argued that predicate-initial order is instead derived through movement. The trigger merges to the left of X′, after which the predicate phrase raises leftward over the trigger to some higher position, as schematized in (5). I will refer to (4) as the *base-generation analysis* and (5) as the *predicate-raising analysis*.[4]

(4)



(5)



The choice between these two approaches is significant for general theories of phrase structure. The predicate-raising analysis, but not the base-generation analysis, is consistent with minimalist approaches to phrase structure such as Kayne (1994), Chomsky (1995), and Brody (2000), which posit a universal algorithm (e.g., Kayne's *Linear Correspondence Axiom*) for mapping hierarchical relations in the narrow syntax onto precedence relations at the PF-interface. These theories eliminate directionality parameters from the syntax, attributing all word order variation—both within and across languages—to differences in (the outcome of) movement operations. A common feature of these theories is the assumption that specifiers are uniformly spelled out to the left of the heads whose projections they merge with. The structure in (5) is compatible with this assumption while the one in (4) is not.

One prediction of the predicate-raising analysis is schematized in (6) below. Suppose we assume—consistent with Chomsky's (2000, 2001) approach to movement—that predicate raising reflects an Agree relation between the Y head in (5) and the predicate phrase, where Y includes an [EPP] feature (6a). If this is correct, then in any clause where Y is absent or featurally deficient, so that an Agree relation is either not established or does not result in movement, the predicate phrase would remain in its base position (6b). If Malagasy has clauses of this latter type, they will exhibit trigger-initial order, but with the trigger occupying the same surface position as in predicate-initial clauses. The base-generation analysis, by contrast, does not allow for this possibility: trigger-initial order should either be unattested, or occur only in constructions where the trigger raises from SpecXP in (4) to some higher position to the left of the predicate phrase.

(6) a. *predicate fronting*: $[_{YP}\ \text{PredP}_i\ \ Y_{[EPP]}\ [_{XP}\ \text{DP}_{Trigger}\ \ \sout{\text{PredP}_i}\ ]\ ]$

b. *predicate fronting blocked*: $[_{YP}\ \ (Y)\ \ [_{XP}\ \text{DP}_{Trigger}\ \ \text{PredP}\ ]\ ]$

In this paper I argue that certain types of clauses in Malagasy do indeed exhibit trigger-initial order, where the trigger occupies the same position as in predicate-initial clauses, as in (6b). The example I will focus on involves event-denoting complements of verbs of perception such as *mahita* 'see' and *mahare* 'hear'. These complements are illustrated in (7) below. Compare the bracketed strings in these examples with their counterparts in (1) and (3) above.

[4] Predicate raising—i.e., fronting of a VP (remnant), or a larger category containing the verb—has been proposed to account for verb- and predicate-initial order in other languages as well: e.g., Massam (2000, 2001) on Niuean, Lee (2000) on Zapotec, Aldridge (2004) on Seediq, Cole and Hermon (2008) on Toba Batak, and Coon (2010) on Chol.

(7) 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 the student reading a book in the garden'

Notice that the bracketed strings in (7), unlike those in (3), are neither extraposed nor introduced by an overt complementizer. Nevertheless, I will show that they pattern as embedded clauses with trigger-initial order, and that this order is due to the absence of predicate raising (the situation is roughly analogous to what we find in many verb-raising languages, where the verb surfaces in a lower position in certain types of embedded clauses than it does in root clauses). Since they show the inverse of the usual clause order, I will refer to the bracketed constituents in (7) as *inverse-order perception verb complements*, or IPVCs. Insofar as my analysis is correct, IPVCs provide indirect evidence in favor of the predicate-raising analysis for the unmarked constituent order in Malagasy, and against the base-generation analysis, by exemplifying a type of clause where predicate raising is blocked.

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 on Malagasy. One of the goals of this paper, then, is to discuss the structure of IPVCs in detail, comparing them with other clause types and with perception verb complements in other languages. The body of the paper is structured as follows: In section 2 I introduce perception verbs in Malagasy and discuss the range of complements they can take, focusing on the differences between IPVCs and clausal PVCs headed by a complementizer. I then offer a preliminary account of trigger-predicate order in IPVCs, attributing the absence of predicate raising to the fact that IPVCs denote events rather than propositions. In propositional clauses, I propose, the head associated with finiteness (Fin) probes the [T] feature of the predicate phrase, causing the predicate phrase to raise over the trigger to the specifier of FinP. In embedded clauses denoting events, by contrast, the Fin head is missing or defective, and so no [T] feature checking occurs; thus the predicate fails to raise, and surfaces to the right of the trigger. I show briefly that event-denoting clauses with trigger-initial order occur not just as the complements of verbs of perception, but also in certain types of temporal constructions.

Sections 3 and 4 provide empirical support for the analysis sketched in section 2. In section 3 I give evidence that IPVCs are constituents, and that these constituents are clauses denoting events rather than DPs denoting individuals (e.g., (7a) means 'The man sees the event of those children crying', and not 'The man sees those children who are crying'). In section 4 I argue that trigger-initial order in IPVCs results from the absence of predicate raising, rather than being derived from an underlying predicate-initial order by leftward movement of the trigger. I give evidence from binding to suggest that the trigger of an IPVC is licensed within its own clause, and does not raise into—or have its Case feature checked in—the higher clause (i.e., it does not undergo ECM/raising-to-object movement). I also present distributional evidence suggesting that clause-initial triggers in IPVCs occupy the same surface position as clause-final triggers in root clauses.

Finally, in section 5 I turn to an issue raised in passing in section 4—namely the morphological form of the IPVC trigger, which seems to depend on the position of the IPVC within the larger clause. Although the data initially suggest that the IPVC trigger is exceptionally Case-marked by a head in the higher clause, I propose an alternative account which is compatible with the present analysis, involving the dissociation of morphological case assignment (*Case valuation*) from abstract Case checking. I also briefly compare IPVCs with pseudo-relatives in Romance. Section 6 summarizes the analysis.

2. The IPVC Construction

In this section I introduce the IPVC construction illustrated in (7) above. In 2.1 I review the morphological and selectional properties of perception verbs in Malagasy, and I compare the IPVC construction with another construction where a perception verb selects a complement clause. In 2.2 I sketch a formal account of predicate raising and its absence in IPVCs.

2.1. Perception Verbs and Their Complements

Some examples of perception verbs in Malagasy are listed in (8). For each verb I give the root, the AT form, and the TT form (the CT forms play no role in the present discussion):

(8)

Root	*AT*	*TT*	
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 external argument and the theme as the internal argument. That is, the AT form is used when the experiencer is the trigger of the clause, while the TT form is used when the theme is the trigger. Examples of voice and tense morphology on perception verbs are given in (9) and (10):

(9) a. Mahita ny alika (ve) ny zazalahy
AT.see Det dog Det boy
'The boy sees the dog'

b. Nahita ny alika (ve) ny zazalahy
Pst.AT.see Det dog Det boy
'The boy saw the dog'

c. Hitan' ny zazalahy (ve) ny alika
TT.see.Lk Det boy Det dog
'The dog is/was seen by the boy'

(10) a. Mahare ny tabataba (ve) ny polisy
AT.hear Det noise Det police
'The police hear the noise'

b. Nahare ny tabataba (ve) ny polisy
Pst.AT.hear Det noise Det police
'The police heard the noise'

c. Ren' ny polisy (ve) ny tabataba
TT.hear.Lk Det police Det noise
'The noise is/was heard by the police'

As these examples illustrate, *hita* and *re* belong to a class of verbs whose TT form consists of the bare root, without any voice morphology. In (9c) and (10c) the root is suffixed with the linker *-n'*. However, the linker is not a voice morpheme per se, but instead plays a role in licensing the experiencer DP (see

Pearson 2005b), since it is omitted when the experiencer is left implicit (e.g., *Hita ny alika* 'The dog is/was seen', *Re ny tabataba* 'The noise is/was heard'). Also, verbs that carry voice morphology also inflect for tense: present tense is unmarked, while past tense is marked by the prefix *n(o)-* and future/irrealis by the prefix *h(o)-*, which replace the prefix *m-* in the AT form. Bare roots, by contrast, do not inflect for tense, and may receive a present or past interpretation depending on context.[5]

In the examples above, the theme argument is a DP denoting an individual. Like their counterparts in English, *hita* and *re* can also select an embedded clause denoting a proposition. As shown in (11), propositional complements are introduced by the complementizer *fa*. I will refer to complements of this type as *fa-perception verb complements* (*fa*-PVCs). In (11a), where *hita* is in the AT form, the experiencer *ny lehilahy* 'the man' functions as the matrix trigger and the *fa*-PVC is extraposed to its right. In (11b), where *hita* is in the TT form, the experiencer is inside the predicate phrase and the *fa*-PVC itself acts as the matrix trigger.

(11) a. Nahita (ve) ny vehivavy [fa namaky boky ny mpianatra]
Pst.AT.see Det woman that Pst.AT.read book Det student
'The woman saw that the student was reading a book'

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

Finally, perception verbs can select an IPVC denoting an event, as in (12). Unlike *fa*-PVCs, IPVCs are neither extraposed nor introduced by a complementizer. Of primary interest here is the fact that, whereas *fa*-PVCs (and other types of root and dependent clauses) have the trigger following the predicate phrase, the trigger of an IPVC precedes the predicate phrase.

(12) 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'

Comparing the glosses for (11) and (12), we see that the semantic contrast between *fa*-PVCs and IPVCs mirrors the contrast between finite and non-finite clausal complements of perception verbs in English (cf. Declerck 1982, Dik and Hengefeld 1991, Safir 1993, Felser 1999):

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

The IPVC in (12) is interpreted much like the English ACC-*ing* complement in (13b), in that both constructions 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 (11) corresponds closely to the finite CP complement in (13a), in that they both express *indirect event perception*. Here the perception verb is interpreted as an epistemic predicate: the woman had an experience 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 (11) and (12), note the contrast below. In the *fa*-PVC construction, the matrix and embedded clauses can take separate temporal modification (14a), enforcing an interpretation where the reading event and seeing event do not overlap. When the *fa*-PVC is replaced by an IPVC, however, the sentence becomes anomalous (14b).

[5] With bare roots, future/irrealis is marked by a separate particle, *ho* (e.g., *Ho hita ny alika* 'The dog will be seen'). This particle also occurs with predicates headed by a noun or adjective, suggesting that bare roots are not themselves verbs, but belong to one of these other lexical categories.

(14) a. Nahita ny vehivavy *androany* [fa namaky boky ny mpianatra *omaly*]
Pst.AT.see Det woman today that Pst.AT.read book Det student yesterday
'The woman saw today 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 appear to differ with regard to finiteness. Notice that in both (11) and (12) above, the embedded verb (*namaky*) is marked for past tense. However, the presence of tense marking does not necessarily entail that the clause is finite in the syntactic sense, since verbs in Malagasy lack untensed inflectional forms. Significantly, there is a difference between *fa*-PVCs and IPVCs with regard to tense: In the *fa*-PVC construction, the tense of the embedded clause varies independently of the tense of the matrix clause, as illustrated in (15). This makes sense if 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.

(15) a. Mahita ny vehivavy [fa *n*amaky boky ny mpianatra]
AT.see Det woman that Pst.AT.read book Det student
'The woman sees that the student was reading a book'

b. Mahita ny vehivavy [fa *h*amaky boky ny mpianatra]
AT.see Det woman that Irr.AT.read book Det student
'The woman sees that the student is going to reading a book'

c. *N*ahita ny vehivavy [fa *h*amaky boky ny mpianatra]
Pst.AT.see Det woman that Irr.AT.read book Det student
'The woman saw that the student was going to reading a book'

In the IPVC construction, by contrast, the tense of the embedded verb must match the tense of the perception verb, as shown in (16) and (17):[6]

(16) a. * Mahita [ny mpianatra *n*amaky boky] ny vehivavy
AT.see Det student Pst.AT.read book Det woman
('The woman sees the student having read a book')

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 *h*amaky boky] ny vehivavy
AT.see Det student Irr.AT.read book Det woman
('The woman sees the student going to read a book')

[6] Sentences like (16a) are actually grammatical, but only under an irrelevant interpretation where the sentence denotes direct perception of an individual ('The woman sees the student who was reading a book') rather than an event. Under this interpretation, the bracketed constituent is not a clause, but a DP in which *namaky boky* functions as a relative clause. The same caveat holds for (16c) and (17b,c). See section 3.2 below for discussion.

(17) a. *N*ahita [ny mpianatra *n*amaky boky] ny vehivavy
Pst.AT.see Det student Pst.AT.read book Det woman
'The woman saw the student reading a book'

b. * *N*ahita [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. ?* *N*ahita [ny mpianatra *h*amaky boky] ny vehivavy
Pst.AT.see Det student Irr.AT.read book Det woman
('The woman saw the student going to read a book')

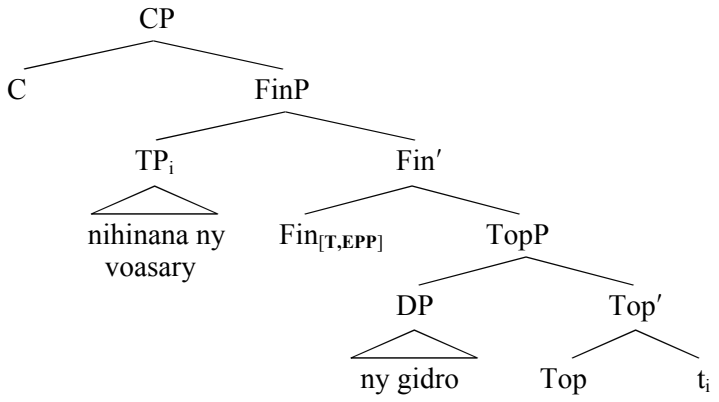
This tense matching requirement makes sense given that the IPVC construction expresses direct perception of an event, which entails that there must be temporal overlap between the reading event and the seeing event. Inasmuch as the tense of the IPVC is dependent on the tense of the higher clause, it is possible that the IPVC lacks an (interpretable) [T(ense)] feature of its own. If so, then we could regard IPVCs as morphologically finite but syntactically non-finite.

2.2. Predicate Raising As Feature Checking

How do we derive the difference in word order between IPVCs (trigger precedes predicate) versus *fa*-clauses and root clauses (predicate precedes trigger)? As discussed above, I argue here that IPVCs reflect the base order in Malagasy, with the trigger merging as a specifier above and to the left of the predicate phrase. Predicate-initial order in *fa*-clauses and root clauses is derived from this order by means of an operation which raises the predicate phrase to position above that of the trigger.

For the sake of concreteness, I adopt the following implementation of this analysis: Following Pearson (2001, 2005a), I assume that the trigger occupies an A′-position in the left periphery, the specifier of TopP (*topic phrase*), located above TP and below the C head where the complementizer *fa* is generated. To derive predicate-initial order, a [T] feature on a functional head above TopP, which I tentatively associate with finiteness (Fin), probes a matching feature in TP, establishing an Agree relation between Fin and T.[7] I assume that besides a [T] feature, Fin in Malagasy includes an [EPP] feature; hence the establishment of an Agree relation between Fin and T with TP raising and merging to become the specifier of FinP. The structure resulting from TP raising is shown in (18a) for the predicate-initial sentence in (18b).

(18) a.



[7] Potential evidence for a [T] feature in the left periphery of finite clauses comes from languages like Irish, where finite complementizers inflect for tense in agreement with the tense on the verb (see McCloskey 1996).

b. Nihinana ny voasary ny gidro
Pst.AT.eat Det orange Det lemur
'The lemur was eating the orange'

Pearson (2001) argues that TP fronting is essentially the phrasal movement counterpart of V+T-raising into the left periphery in V2 languages like Icelandic. (See Pearson 2001 and Travis 2006 for different accounts of why feature checking here results in XP-movement rather than head movement.)

Why does TP fronting fail to occur in IPVCs? I connect this to the fact that IPVCs denote events and are (apparently) syntactically non-finite, whereas predicate-initial clauses denote propositions and are syntactically finite. Specifically, I propose that in IPVCs FinP is either absent or has a 'defective' head—i.e., a head which lacks the [T] feature that probes TP, and/or lacks the [EPP] feature that gives rise to TP movement. TP thus remains in its base position within the c-command domain of the trigger. (Since IPVCs lack overt complementizers, it is likely that the CP layer is also absent. For more on the size of IPVCs, see section 4.)

Note in passing that trigger-predicate order is not confined to IPVCs, but also occurs in at least one other type of embedded clause which arguably denotes an event or state-of-affairs rather than a proposition—namely complements of the preposition *amin-* 'at, with, on' (past tense *tamin-*). Among other relations, *(t)amin-* can express temporal location (e.g., *tamin' ny alarobia* 'on Wednesday'). The selection of a complement clause by *(t)amin-* is illustrated in (19a) (cf. the corresponding root clause in (19b)); here the complement expresses an eventuality which temporally overlaps the eventuality named by the matrix clause. (I return briefly to this construction in section 5.)

(19) a. Mbola tanora Rasoa [tamin' [izy nipetraka tany Antsirabe]]
still young Rasoa at 3Nom Pst.AT.live there Antsirabe
'Rasoa was still young when she was living in Antsirabe'

b. Nipetraka tany Antsirabe izy
Pst.AT.live there Antsirabe 3Nom
'She was living in Antsirabe'

Having outlined a formal account of predicate raising (and its absence), I now provide support for my analysis by considering the syntactic properties of the IPVC construction in more detail. In section 3 I give evidence for treating IPVCs as complement clauses. Then in section 4 I argue that the surface order in IPVCs reflects the base order of trigger and predicate. In particular, I show that there is no evidence of the trigger moving over the predicate phrase in IPVCs, strongly suggesting that its position at the left edge of the clause is due to the absence of predicate raising.

3. Evidence That IPVCs Are Complement Clauses

In this section I provide support for the following three claims: (a) IPVCs are constituents, (b) the perception verb selects the IPVC as its complement, and (c) IPVCs are clauses denoting events—rather than, say, DPs denoting individuals.

3.1. IPVCs Are Constituents

In 2.1 I noted that the Malagasy IPVC construction is semantically comparable to the so-called ACC-*ing* construction in English, illustrated in (20) below. This construction has received considerable attention in the literature (Declerck 1982, Dik and Hengefeld 1991, Safir 1993, Felser 1999, and many others), as have corresponding direct perception constructions in other languages (Guasti 1993, Cinque 1995, Felser 1999). As several authors have pointed out, sentences like (20) can be several-ways ambiguous. Under one reading, for instance, *see* selects a non-finite complement clause of which *the student* is the (ECM)

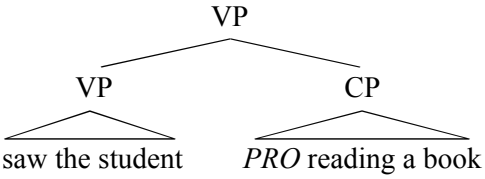
subject, as in (21a). Under another reading, *see* selects the DP *the student* as its direct object, and *reading a book* functions as an object-controlled participial clause, a kind of temporal modifier or depictive secondary predicate, as in (21b). Under the former reading, the sentence might be paraphrased 'The teacher saw the event of the student reading the book', while under the latter reading it could be paraphrased 'The teacher saw the student while s/he (the student) was reading the book'.

(20) The teacher saw the student reading the book.

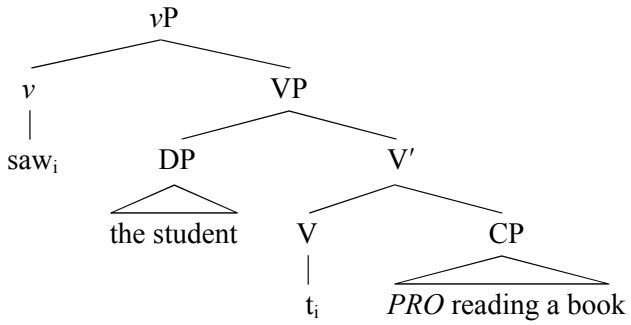
(21) a. The teacher saw [$_{TP?}$ the student reading the book]
b. The teacher saw [$_{DP}$ the student$_i$] [$_{CP}$ PRO$_i$ reading the book]

In (21a), the string *the student reading the book* forms a single clausal constituent. In (21b) it is less clear what the constituency is. Perhaps *reading the book* adjoins to the VP *saw the student*, as in (22a), in which case *the student reading the book* does not form a constituent. An alternative structure, based on Larson (1988), is shown in (22b): here *reading a book* merges as the complement of *see*, while the object merges as the specifier of VP; following V-to-*v* raising, the string *the student reading the book* forms a constituent, but a VP remnant rather than a clause.

(22) a.



b.



Given the structural ambiguity of (20), let us consider its translation equivalent in Malagasy:

(23) Nahita ny mpianatra namaky ny boky ny mpampianatra
Pst.AT.see Det student Pst.AT.read Det book Det teacher
'The teacher saw the student reading the book'

In 2.1 I analyzed sentences like (23) along the lines of (21a), treating *ny mpianatra namaky ny boky* 'the student reading the book' as a complement clause (an IPVC) selected by the perception verb *hita* 'see'. However, an alternative analysis of (23) is suggested by (21b)/(22). According to this alternative, the verb *hita* takes DP *ny mpianatra* 'the student' as its direct object, while *namaky ny boky* 'reading the book' acts as a sort of VP modifier, so that (23) really means 'The teacher saw the student while the student was reading the book'. (The impression that (23) denotes event perception is due to an entailment generated by the requirement that the time of the reading event overlap the time of the seeing event.) Crucially, if something like (22) is the (only) correct structure for (23), then *ny mpianatra* and *namaky ny boky* do not form a constituent—or else form a VP remnant constituent containing a trace of the verb—and thus fail to provide evidence for the existence of trigger-predicate order in clauses.

A structure comparable to (22) may indeed be possible for (23) (for reasons of space, I will not pursue this possibility here).[8] However, there is extensive evidence from constituency tests to show that this cannot be the only structure available for such sentences. For instance, the examples in (24b) and (25b) demonstrate that an IPVC can be made into the matrix trigger by placing the perception verb in the TT form ((24a) and (25a) give the AT counterparts for comparison). That the IPVC is outside the matrix predicate phrase in (24b) and (25b) is shown by the position of the question particle *ve* in these sentences.

(24) a. Nahita [ny mpianatra namaky boky] (ve) ny mpampianatra
Pst.AT.see Det student Pst.AT.read book Det teacher
'The teacher saw the student reading a book'

b. Hitan' ny mpampianatra (ve) [ny mpianatra namaky boky]
TT.see.Lk Det teacher Det student Pst.AT.read book
'The teacher saw the student reading a book'

(25) 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.Lk=Rakoto Det woman Pst.AT.enter in.there Obl=house
'Rakoto heard the woman enter the house'

DPs and complement clauses can function as triggers in Malagasy, but VPs—and of course non-constituents—cannot. Hence the acceptability of (24b) and (25b) supports treating the bracketed strings in these sentences as (non-VP) constituents. Moreover, the fact that the TT voice is used to promote these constituents to trigger function shows that they are selected as complements by the perception verb.

One might challenge the claim that *ny mpianatra namaky boky* 'the student reading the book' is the matrix trigger in (24b), arguing instead that the matrix trigger is the DP *ny mpianatra* 'the student', with *namaky boky* being an extraposed modifier (likewise for (25b)). Evidence against this alternative comes from the fact that IPVCs can be pseudo-clefted. Examples of the pseudo-cleft construction are given in (26) below: here a contrastively focused phrase appears at the left edge of the clause, followed by the focus particle *no* (in yes/no questions, *ve* comes immediately after the focused phrase). Only DPs, PPs, adverbs, and certain types of embedded clauses can be pseudo-clefted, while VPs (and non-constituents) cannot.[9] When the pseudo-clefted constituent is a DP or embedded clause, its grammatical function deter-

[8] One piece of evidence suggesting that *namaky ny boky* can function as a VP modifier in (23) comes from sentences like (i). Here we see that *ny mpianatra* can become the matrix trigger of a TT clause, with *namaky ny boky* remaining inside the predicate phrase (note the position of the question particle *ve*). I leave it for future research to determine the structure of such sentences, and focus instead on the status of strings like *ny mpianatra namaky ny boky* in cases where they can be shown to pattern as constituents.

(i) Hitan' ny mpampianatra namaky ny boky (ve) ny mpianatra
TT.see.Lk Det teacher Pst.AT.read Det book Det student
'The student was seen by the teacher reading the book'

[9] Clauses headed by *fa* cannot be pseudo-clefted (Ileana Paul, p.c.). However, pseudo-clefting is possible for other kinds of embedded clauses. Paul (2000) gives the following example featuring an adjunct purpose clause:

(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'

mines the voice of the verb following *no*: e.g., AT voice is required when the actor is pseudo-clefted (26a), while TT voice is required when a complement is pseudo-clefted (26b). (For more on Malagasy pseudo-clefts, see Paul 2000, 2001; Potsdam 2006.)

(26) a. Ny gidro (ve) no nihinana ny voasary
Det lemur Foc Pst.AT.eat Det orange
'It's the lemur that ate the orange'

b. Ny voasary (ve) no nohanin' ny gidro
Det orange Foc Pst.TT.eat Det lemur
'The orange is what the lemur ate'

The examples below illustrate pseudo-clefting of an IPVC. Notice that the perception verb in the TT form. Since at most one constituent at a time can be pseudo-clefted, these examples provide strong support for the claim that IPVCs are single constituents.

(27) a. [Ny mpianatra namaky boky] (ve) no hitan' ny mpampianatra
Det student Pst.AT.read book Foc TT.see.Lk Det teacher
'The student reading a book is what the teacher saw'

b. [Ny vehivavy niditra tao an-trano] (ve) no ren-dRakoto
Det woman Pst.AT.enter in.there Obl=house Foc TT.hear=Rakoto
'The woman entering the house is what Rakoto heard'

Further evidence for the constituency of IPVCs comes from coordination. The examples below show that coordinated IPVCs can occur inside the matrix predicate phrase (28a), act as the trigger of the higher clause (28b), or be pseudo-clefted (28c):

(28) 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
'The student reading a book and the child sleeping is what I saw'

A final piece of evidence that IPVCs are constituents comes from adverb placement. Consider the negative polarity item *intsony* 'any more'. In simple transitive clauses with the verb in the AT form, *intsony* generally follows the direct object (29b), although it may also precede the direct object if the latter is a definite DP (29a):[10]

(29) a. ? Tsy mijery *intsony* an-dRabe sy Rakoto aho
Neg AT.watch any.more Acc=Rabe and Rakoto 1sNom
'I am not watching Rabe and Rakoto any more'

[10] The speakers I consulted found (29a) to be slightly worse than (29b). Other speakers appear to find both orders fully acceptable, as reported by Rackowski (1998).

b. Tsy mijery an-dRabe sy Rakoto *intsony* aho
Neg AT.watch Acc=Rabe and Rakoto any.more 1sNom
'I am not watching Rabe and Rakoto any more'

Turning to IPVCs, we see that the embedded trigger may not be separated from the following predicate phrase by a matrix adverb. In (30) below, *jere* 'watch' selects an IPVC (*an-dRabe sy Rakoto milalao baolina* 'Rabe and Rakoto playing ball'). Here, the preference is for *intsony* to come after the IPVC (30c) (cf. (29b) above), although it can also come right after the matrix verb (30a) (cf. (29a)). Crucially, though, the adverb cannot intervene between the DP and the embedded predicate (30b).[11]

(30) 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'

Having demonstrated that IPVCs are constituents, I consider what type of constituent they are. In the next section I show that, under an event perception construal, IPVCs pattern as clauses rather than as nominal constituents.

3.2. IPVCs are Clauses and Not DPs

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

(31) The teacher saw the student reading the book

As Declerck (1982) and Felser (1999) note, even if we confine our attention to structures where *the student reading the book* patterns as a (non-remnant) constituent, (31) is ambiguous between a reading where the sentence denotes direct perception of an event, and a reading where it denotes perception of an individual. Under the former reading, *see* selects a non-finite clause as its complement, with *the student* the subject of that clause (32a); under the latter reading, *see* selects a DP within which *reading the book* is a reduced relative clause modifying *student* (32b):

(32) a. The teacher saw [$_{TP?}$ the student reading the book] (event reading)
b. The teacher saw [$_{DP}$ the student [$_{Rel}$ reading the book]] (individual reading)

As in English, relative clauses in Malagasy are postnominal and do not require special marking. Moreover, the verb in the relative clause inflects for voice according to the grammatical function of the relativized noun: if the actor is relativized, the verb carries AT marking; if the undergoer is relativized, the verb carries TT marking, and so on (Keenan 1976). The following sentences give examples of DPs containing relative clauses:

[11] I encountered some speaker disagreement as to whether (30b) is entirely unacceptable. However, all the speakers I consulted agreed that this sentence is noticeably worse than either (30a) or (30c).

(33) a. Fantan-dRabe [$_{DP}$ ny mpianatra [$_{Rel}$ namaky ny boky]]
TT.know.Lk=Rabe Det student Pst.AT.read Det book
'Rabe knows the student who was reading the book'

b. Eo ambonin' ny latabatra [$_{DP}$ ny boky [$_{Rel}$ novakin' ny mpianatra]]
there on.top.Lk Det table Det book Pst.TT.read Det student
'The book that the student was reading is on the table'

The DPs in (33) are look identical to strings such as the one bracketed in (34a) below. In both cases a nominal is followed by a predicate phrase whose verb agrees with the nominal in voice. Perhaps, then, IPVCs should be analyzed not as trigger-initial clauses (34b), but as DPs containing a noun modified by a relative clause (34c). If so, then (34a) (only) means 'Rabe saw the student who was reading the book'.

(34) a. Hitan-dRabe [ny mpianatra namaky ny boky]
TT.see.Lk=Rabe Det student Pst.AT.read Det book
'Rabe saw the student reading the book'

b. Hitan-dRabe [$_{Clause}$ [$_{Trigger}$ ny mpianatra] [$_{PredP}$ namaky ny boky]]
c. Hitan-dRabe [$_{DP}$ ny mpianatra [$_{Rel}$ namaky ny boky]]

In fact, the evidence shows that both structures are possible: (34a) exhibits essentially the same ambiguity as the English sentence in (31). Although the bracketed constituent behaves as a DP in certain cases, this cannot be the only structure available.

First of all, note that if a DP structure like the one in (34c) were the only possibility for (34a), then the IPVC construction would necessarily denote perception of an individual involved in an event rather than perception of the event itself. However, there is good evidence that IPVCs do denote events. Consider the pronominal/demonstrative element *izany* 'that', for example. *Izany* is generally used to pick out a discourse-salient event, proposition, utterance, etc.—but crucially it cannot take a human referent. In this respect *izany* contrasts with the third person pronoun *azy*. Thus (35a) is acceptable while (35b) is semantically anomalous:

(35) a. Nahita ny zaza$_i$ aho, ary nahita *azy*$_i$ koa Rabe
Pst.AT.see Det child 1sNom and Pst.AT.see 3Acc also Rabe
'I saw the child, and Rabe saw him/her too'

b. # Nahita ny zaza$_i$ aho, ary nahita *izany*$_i$ 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 (35) 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 glosses for these sentences indicate:

(36) a. Nahita [ny zaza nitomany]$_i$ aho, ary nahita *azy*$_i$ 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 him/her too'

b. Nahita [ny zaza nitomany]$_i$ aho, ary nahita *izany*$_i$ 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 too'

I claim that *ny zaza nitomany* is a DP in (36a), while in (36b) it is an embedded clause (IPVC). Note that in (36a), Rabe need not have witnessed the crying event, since here *nitomany* 'cried' functions as a relative clause modifying *zaza* 'child'. On the other hand, (36b) entails that Rabe witnessed the crying event as it was happening. One consequence of this difference is that the tense matching requirement discussed in 2.2 does not apply when *ny zaza nitomany* is a DP: sentences like (37a,b) are grammatical, but can only denote perception of an individual, not perception of an event.

(37) a. Nahita [ny zaza mitomany] aho
Pst.AT.see Det child AT.cry 1sNom
'I saw the child who is crying'

b. Mahita [ny zaza nitomany] aho
AT.see Det child Pst.AT.cry 1sNom
'I see the child who was crying'

There is considerable evidence showing that IPVCs pattern differently from DPs in their syntactic properties. For example, an IPVC can include a proper name as its trigger, as illustrated in (38a) (cf. also (30) above, and examples in section 4.1 below). However, proper names cannot take bare relative clause modifiers. This is shown in (38b), where the choice of selecting verb ('visit') rules out an event interpretation for the bracketed constituent. Example (38a) is acceptable because here the bracketed constituent can denote an event.[12]

(38) a. Hitan' ny zaza [Rabe namaky boky]
TT.see.Lk Det child Rabe Pst.AT.read book
'The child saw Rabe reading a book'

[12] Relative clauses are optionally introduced by the demonstrative-like element *izay*. Hence (i) below is an acceptable variant of (33a) above. *Izay* is also used to introduce free relatives, as in (ii).

(i) Fantan-dRabe [ny mpianatra [*izay* namaky ny boky]]
TT.know=Rabe Det student Rel Pst.AT.read Det book
'Rabe knows the student who was reading the book'

(ii) Fantan-dRabe [*izay* namaky ny boky]
TT.know=Rabe Rel Pst.AT.read Det book
'Rabe knows who was reading the book'

Interestingly, when *izay* is added before the embedded verb in (38b), the resulting sentence was judged grammatical by the speakers I consulted:

(iii) 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'

Substantive work remains to be done on the differences between *izay* relatives and bare relatives. However, as far as I have been able to determine, *izay* relatives can function either as restrictive modifiers (which delimit the head noun) or as appositive modifiers (which merely provide additional information about the head noun). Relatives without *izay*, by contrast, always seem to be restrictive. If this generalization holds, then the contrast between (38b) and (iii) parallels what we find in languages like English, where proper names can be modified by an appositive relative but not a restrictive relative.

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'), including *sy* and *ary*. Some speakers appear to use *sy* and *ary* interchangeably, but for most the choice of connective is determined by the category of the conjuncts. Speakers in the latter camp use *ary* primarily for conjoining full clauses (39), while *sy* can only be used to conjoin constituents other than clauses, such as predicate phrases (40a) and DPs (40b):

(39) [Mamaky boky Rasoa] { *ary* / **sy* } [misotro dite Rakoto]
AT.read book Rasoa and AT.drink tea Rakoto
'Rasoa is reading a book and Rakoto is drinking tea'

(40) 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 [Rasoa { *sy* / **ary* } Rakoto]
AT.write letter Rasoa and Rakoto
'Rasoa and Rakoto are writing letters'

When two IPVCs are conjoined, the speakers I consulted showed a strong preference for *ary* over *sy*, as shown in (41) (IPVCs with proper names have been chosen in order to force the event perception reading). With regard to coordination, then, IPVCs pattern with clauses (39) rather than with DPs (40b).[13]

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

Compare (41) with (42) below, where the choice of selecting verb ('know' rather than 'see') precludes interpreting the bracketed constituents as IPVCs; instead they must be DPs containing relative clauses. As in (40b) above, *sy* is the preferred coordinator in (42). The contrast between (41) and (42) shows that the preference for *ary* in (41) is not an effect of, say, the length of the conjoined constituents, but rather of their category—clause versus DP.

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[13] Interestingly, the preference for *ary* over *sy* is not as strong when the coordinated IPVCs are pseudo-clefted, as in (i). Some of the speakers I consulted retained a preference for *ary* in this sentence, while others found *ary* and *sy* equally acceptable.

(i) [Rasoa mamaky boky] { *ary* / *sy* } [Rakoto misotro dite] no hitako
Rasoa AT.read book and Rakoto AT.drink tea Foc TT.see=1sGen
'Rasoa reading a book and Rakoto drinking tea is what I see'

I have no explanation for the discrepancy between (i) and (41). Note, though, that even in this environment we get a formal contrast between IPVCs and DPs, inasmuch as *sy* is strongly preferred for DP coordination even when the conjoined DPs are pseudo-clefted:

(ii) [Rasoa { *sy* / ??*ary* } Rakoto] no hitako
Rasoa and Rakoto Foc TT.see=1sGen
'It's Rasoa and Rakoto who I see'

(42) 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 treating IPVCs as distinct from DPs comes from determiner placement. Demonstrative determiners in Malagasy (*io* 'this', *ireo* 'these', *iretsy* 'those', etc.) are normally repeated at the left and right edges of the DP, as shown in (43a,b). This is the so-called *framing demonstrative* construction. Crucially for our purposes, the second copy of the demonstrative must be DP-final, regardless of how 'heavy' the DP is. In particular, it must follow a (restrictive) relative clause—hence the contrast between (43b) and (43c).

(43) a. *iretsy* boky lehibe *iretsy*
those book large those
'those large books'

b. *iretsy* boky [$_{Rel}$ 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'

c. * *iretsy* boky *iretsy* [$_{Rel}$ 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 the bracketed constituent in (44a) below. If this is a nominal constituent in which *namaky boky* is a relative clause modifying *mpianatra*, as in (44b), then *namaky boky* is properly inside the DP headed by *ny*. On the other hand, if the bracketed constituent is an IPVC—that is, if *namaky boky* is the predicate of an embedded clause taking *ny mpianatra* as its trigger, as in (44c)—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 (44b) and after *mpianatra* in (44c).

(44) a. Hitan-dRabe [ny mpianatra namaky boky]
TT.see.Lk=Rabe Det student Pst.AT.read book
'Rabe saw the student reading a book'

b. **[$_{DP}$** ny mpianatra [$_{Rel}$ namaky boky] **]**
c. [$_{Clause}$ **[$_{DP}$** ny mpianatra **]** [$_{PredP}$ namaky boky]]

If the only available structure were the one in (44b)—that is, if *namaky boky* could only be analyzed as a relative clause modifying *mpianatra*—then we predict that when *ny* in (44a) is replaced by a framing demonstrative, the second copy will necessarily follow *namaky boky*. On the other hand, if the clausal structure in (44c) is also available, there should be an alternate structure where the second copy of the demonstrative precedes *namaky boky*. The examples below show that the latter prediction is borne out: both orders are acceptable. Moreover, these sentences differ semantically in the expected way: (45a) means that Rabe saw a group of individuals, the students, who may or may not have been reading at the time when he saw them. In (45b), by contrast, Rabe is understood to have witnessed the reading event.

(45) a. Hitan-dRabe [$_{DP}$ *iretsy* mpianatra namaky boky *iretsy*]
TT.see.Lk=Rabe those student Pst.AT.read book those
'Rabe saw those students who were reading books'

b. Hitan-dRabe [$_{IPVC}$ *iretsy* mpianatra *iretsy* namaky boky]
TT.see.Lk=Rabe those student those Pst.AT.read book
'Rabe saw (the event of) those students reading books'

The bracketed string in (45b) behaves as a constituent with respect to the tests discussed in 3.1. For instance, it can be pseudo-clefted:

(46) [*Iretsy* mpianatra *iretsy* namaky boky] no hitan-dRabe
those student those Pst.AT.read book Foc TT.see.Lk=Rabe
'(The event of) those students reading books is what Rabe saw'

Consider also the examples below, which show that *iretsy ankizy iretsy* 'those children' cannot be separated from the following predicate by the matrix adverb *intsony*:

(47) 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 (45a) 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 (cf. (35) above). This is confirmed by (48a), which is semantically anomalous ((48a) becomes felicitous if *izany* is replaced with *azy ireo* 'them', which can have a human referent). In (45b), however, the bracketed constituent denotes an event rather than a set of individuals, and hence may act as the antecedent for *izany* (48b).

(48) a. # Nahita [iretsy mpianatra namaky boky iretsy]$_i$ aho, ary nahita
Pst.AT.see those student Pst.AT.read book those 1sNom and Pst.AT.see
izany$_i$ koa Rabe
those also Rabe
'I saw those students who were reading books, and Rabe saw that too'

b. Nahita [iretsy mpianatra iretsy namaky boky]$_i$ aho, ary nahita
Pst.AT.see those student those Pst.AT.read book 1sNom and Pst.AT.see
izany$_i$ koa Rabe
those also Rabe
'I saw (the event of) those students reading books, and Rabe saw that too'

Consider also the examples below, where the question in (49a) asks for one or more individuals. The sentence in (49b) is a felicitous answer to this question, since the bracketed constituent denotes a set of individuals. By contrast, (49c) is not a felicitous answer to (49a), since here the bracketed constituent denotes an event, as shown by the placement of the framing demonstrative ((49c) would work as an answer to the question *Inona no hitanao?* 'What did you see?').

(49) a. Zaza iza no hitanao?
child which Foc TT.see=2sGen
'Which child(ren) did you see?'

b. [Iretsy zaza nitomany iretsy] no hitako
those child Pst.AT.cry those Foc TT.see=1sGen
'I saw those crying children'

c. [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 (49a))

4. The Source of Trigger-initial Order in IPVCs

Having established that IPVCs are complement clauses I now turn to their internal syntax, focusing on the ordering of the trigger and the predicate phrase. Why should the trigger follow the predicate in unmarked root (50a) and embedded (50b) contexts, but precede the predicate in IPVCs (50c)?

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

b. Heverin' ny ankizy fa [mihinana ny voasary *ny gidro*]
TT.think Det children that AT.eat Det orange Det lemur
'The children think that the lemur is eating the orange'

c. Jeren' ny ankizy [*ny gidro* mihinana ny voasary]
TT.watch Det children Det lemur AT.eat Det orange
'The children are watching the lemur eat(ing) the orange'

In section 2 I attributed this word order difference to a difference in the surface position of the predicate phrase: in root clauses and *fa*-clauses, the predicate phrase raises leftward over the trigger, while in IPVCs this movement is blocked, preserving the underlying order. The surface position of the trigger is the same in both clause types. This option is schematized in (51):

(51) a. predicate-initial clause: [PredP_i [*DP* t_i]] (predicate fronting)
b. IPVC clause: [[*DP* PredP]] (no predicate fronting)

An obvious alternative presents itself, according to which the word order difference between (50a,b) and (50c) is due to the position of the trigger. According to one version of this story, schematized in (52), the trigger of an IPVC undergoes leftward movement over the predicate phrase, ending up in a higher position than in root clauses and *fa*-clauses. If this is correct, then the IPVC construction can tell us nothing about whether predicate-initial order is derived by predicate raising, since there is no way to determine whether the trigger of an IPVC has raised from a position preceding or following the predicate phrase.

(52) a. predicate-initial clause: [[PredP *DP*]] (no trigger fronting)
b. IPVC clause: [$\textit{DP}_i$ [PredP t_i]] (trigger fronting)

Since the trigger fronting in (52b) involves obligatory DP raising, we might motivate such a movement by appealing to Case. Perhaps the trigger of an IPVC is not Case-licensed within its own clause, and so must raise to the left periphery of that clause—or out of the clause entirely—in order to enter into a local struc-

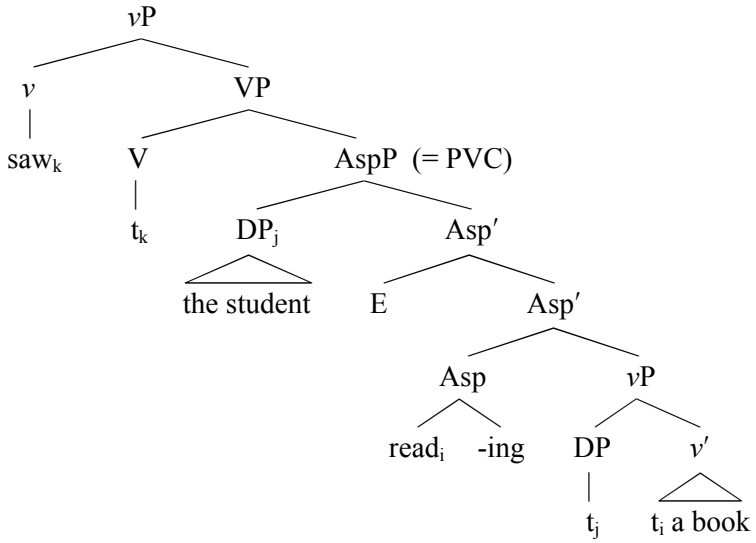
tural relation with a Case-checking head in the higher clause. In other words, the IPVC construction might be a type of ECM or raising-to-object construction. This is the usual analysis for non-finite PVCs in English and other languages. In (53), the pronominal subject of the PVC is marked accusative, suggesting that its Case is checked in the matrix clause:

(53) The teacher saw [$_{PVC}$ *him* reading a book]

Another possibility is that trigger-initial order in IPVCs reflects a 'truncated' clause structure, with the trigger occupying a lower position than it does in root clauses and *fa*-clauses. Recall that IPVCs are not introduced by an overt complementizer, suggesting that they lack a CP projection. Moreover, as I showed in section 2.2, the verb in an IPVC must agree in tense with the verb that selects it. This suggests that IPVCs lack a tense feature, and might therefore lack a TP layer as well. Analyzing IPVCs as truncated clauses is of course compatible with treating them as ECM/raising-to-object complements: if IPVCs are not full clauses, they may lack the functional projection necessary for Case-licensing the trigger, which instead must check its Case against a head in the main clause.

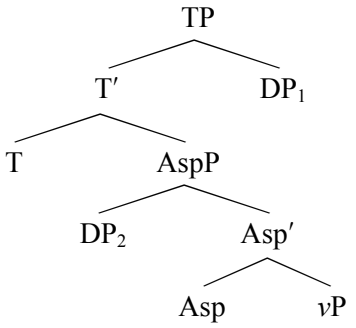
It is often argued that non-finite PVCs in English are truncated clauses rather than full CPs. Felser (1999), for example, proposes that non-finite PVCs belong to category *Aspect Phrase* (AspP), where the Asp head selects *v*P as its complement and introduces a null spatio-temporal event argument (E) in its specifier. In order to check its Case feature, the embedded subject DP raises to form a second specifier of AspP and enter into an Agree relation with the higher *v* head, yielding the structure in (54). (If accusative-marked subjects in English undergo literal raising to object, then the DP will subsequently move out of SpecAspP and into the higher clause.)

(54)



If IPVCs in Malagasy are smaller than root clauses and *fa*-clauses—perhaps as small as AspP—then word order in IPVCs has no bearing on the question of whether predicate-initial order in 'full' clauses is base-generated or derived by predicate raising. This is true even if the trigger of the IPVC does not raise, as in (52b), but is instead Case-licensed in situ. Consider the phrase structure for Malagasy proposed by Guilfoyle, Hung and Travis (1992), who adopt a base-generation approach to predicate-initial order. These authors assume that directionality parameters can be set differently for different categories, resulting in mixed-branching structures where some projections are specifier-initial and others are specifier-final. A somewhat updated version of their tree structure is shown in (55):

(55)



Suppose we extended Felser's (1999) analysis to Malagasy and treated IPVCs as AspP clauses, with the trigger in SpecAspP and verb raising to Asp; whereas root clauses and complements of *fa* are of category TP (or larger), with the trigger in SpecTP (or higher) and the verb raising as high as T. If TP has its specifier on the right (the position of DP_1) while AspP has its specifier on the left (the position of DP_2), this would be sufficient to capture the word order difference between IPVCs and other clause types. There would be no need to posit a predicate raising operation to derive predicate-initial order in root and *fa*-clauses, as in (51)—nor a need to posit a special trigger-fronting operation in IPVCs, as in (52).

In the following sections I show that, despite some superficial evidence to the contrary, IPVCs are not ECM or raising-to-object complements. I argue that the word order difference in (50a,b) versus (50c) is not due to the position of the trigger in these clauses; therefore it must be due to a difference in the position of the predicate phrase. In 4.1 I provide evidence that the embedded trigger does not raise into the higher clause, but remains within the IPVC, and that the IPVC is not a 'truncated' clause structure (e.g., AspP), but must instead be larger than TP. In 4.2 I argue that the embedded trigger does not raise to the left periphery of the IPVC in order to enter into a local c-command relation with a higher head (cf. Massam 1985 on ECM in Niuean); instead, it occupies the same structural position as triggers in root clauses and *fa*-clauses.

4.1. Against a Raising-to-Object Analysis of IPVCs

One option for explaining the word order in sentences like (56a) is to treat the IPVC construction is an instance of raising to object: the embedded trigger raises out of its clause in order to check its Case feature in a local Agree relation with a Case-licensing head in the higher clause, as schematized in (56b) (Lasnik and Saito 1991 and Runner 1998, among others, propose similar analyses for the English ECM construction). According to this analyis, *ny mpianatra* precedes the embedded predicate (*namaky boky*) because it has raised into the object position of the higher clause.

(56) a. Nahita ny mpianatra namaky boky Rasoa
Pst.AT.see Det student Pst.AT.read book Rasoa
'Rasoa saw the student reading a book'

b. $[_{\text{PredP}}$ nahita *ny mpianatra*$_i$ $[_{\text{IPVC}}$ namaky boky t_i $]\,]$ Rasoa

Initial support for a raising-to-object analysis seems to come from how the embedded trigger is case-marked. To show this, I must first say a few things about morphological case in Malagasy. Unlike DPs headed by the determiner *ny*, pronouns and proper names exhibit overt case distinctions (see Keenan 1976, Zribi-Hertz and Mbolatianavalona 1999, Pearson 2005a). Pronouns each have three morphological forms, traditionally known as the *nominative*, *accusative*, and *genitive*, listed in the following table:

(57)

	Nom	*Acc*	*Gen*
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

The genitive forms are enclitics which attach to nouns to mark a possessor (e.g., *ny trano* 'the house', *ny tranoko* 'my house'); in addition, the pronominal complements of most prepositions appear in the genitive (e.g., *amin-* 'with', *amiko* 'with me'), as do the actor arguments of non-AT verbs (e.g., *hitako* 'seen by me'). As the examples below show, the nominative form is used for pronouns in trigger function, regardless of the voice of the verb (58a,b), while non-trigger object pronouns appear in the accusative (58c) (the nominative has other uses as well, discussed in 4.2).

(58) a. Nahita ny gidro *isika*
Pst.AT.see Det lemur 1inNom
'We saw the lemurs'

b. Hitan' ny gidro *isika*
TT.see.Lk Det lemur 1inNom
'The lemurs saw us'

c. Nahita *antsika* ny gidro
Pst.AT.see 1inAcc Det lemur
'The lemurs saw us'

For proper names, the nominative form is unmarked (59a,b), while the accusative is marked by the proclitic *an-* (59c) (*an-* also attaches to NPs in oblique function: e.g. *ao an-trano* 'in the house'). In genitive contexts, the proper name binds to its host, much as the pronouns do (e.g., *ny tranon-dRakoto* 'Rakoto's house', *amin-dRakoto* 'with Rakoto', etc.).

(59) a. Nahita ny gidro Rakoto
Pst.AT.see Det lemur Rakoto
'Rakoto saw the lemurs'

b. Hitan' ny gidro Rakoto
TT.see.Lk Det lemur Rakoto
'The lemurs saw Rakoto'

c. Nahita *(*an-*)dRakoto ny gidro
Pst.AT.see Acc=Rakoto Det lemur
'The lemurs saw Rakoto'

Turning to the IPVC construction, we see that when an IPVC appears inside the predicate phrase headed by the perception verb, its trigger takes the accusative form rather than the nominative form (60). This seems to suggest that the trigger has moved into the accusative Case position within the higher clause, in accordance with the raising-to-object analysis in (56b) above.

(60) a. Nahita *antsika* namaky boky Rasoa
Pst.AT.see 1inAcc Pst.AT.read book Rasoa
'Rasoa saw us reading a book'

b. Nahita *an*-dRakoto namaky boky Rasoa
Pst.AT.see Acc=Rakoto Pst.AT.read book Rasoa
'Rasoa saw Rakoto reading a book'

Despite the case-marking facts in (60)—to which I return in section 5.1 below—there are good reasons to believe that the embedded trigger does not in fact raise into the matrix object position. Initial evidence for this comes from the constituency tests discussed in section 3.1 above. For example, the embedded trigger cannot be separated from the following predicate phrase by *intsony*, even though this adverb normally follows the object in simple transitive clauses (in the AT voice):

(61) * Tsy mijery ny ankizy *intsony* milalao baolina aho
Neg AT.watch Det children any.more AT.play ball 1sNom
'I am not watching the children playing ball any more'

In addition, I showed that a constituent consisting of the embedded trigger and its predicate can act as the trigger of the higher clause (62a), or be pseudo-clefted (62b). This is incompatible with an analysis where the embedded trigger has extracted from the lower clause. Recall that only DPs and embedded clauses can appear in trigger position; and only DPs, PPs, adverbs, and certain types of embedded clauses can be pseudo-clefted (verbal projections and non-constituents cannot).

(62) a. Hitan' ny mpampianatra [ny mpianatra namaky boky]
TT.see.Lk Det teacher Det student Pst.AT.read book
'The teacher saw the student reading a book'

b. [Ny mpianatra namaky boky] no hitan' ny mpampianatra
Det student Pst.AT.read book Foc TT.see.Lk Det teacher
'The student reading a book is what the teacher saw'

With regard to constituency, the IPVC construction contrasts sharply with the construction illustrated in (63) below, which Keenan (1976), Paul and Rabaovololona (1998), et al., analyze as a type of raising to object. Here the notional trigger of an embedded clause surfaces as the structural object of the higher verb: it appears adjacent to the higher verb, separated from the embedded predicate by the particle *ho*, and inflects for accusative case when predicate-internal. As shown in (63b), the string consisting of the raised object and the following predicate cannot act as the trigger of the higher clause (cf. (62a) above). Instead, when the matrix verb appears in the TT voice, it is the raised object alone which is promoted to the matrix trigger function (63c) (note the position of the question particle *ve* in (63b,c)). Likewise, it is not possible to cleft the raised object together with embedded predicate, as shown in (63d) (cf. (62b)):

(63) a. Mihevitra an-dRasoa ho namono ny voalavo (ve) ny zaza
AT.think Acc=Rasoa Part Pst.AT.kill Det rat Det child
'The child believes Rasoa to have killed the rat'

b. * Heverin' ny zaza (ve) [Rasoa ho namono ny voalavo]
TT.think Det child Rasoa Part Pst.AT.kill Det rat
'Rasoa to have killed the rat, the child believes (it)'

c. Heverin' ny zaza ho namono ny voalavo (ve) Rasoa
TT.think Det child Part Pst.AT.kill Det rat Rasoa
'Rasoa, the child believes (her) to have killed the rat'

d. * [(An-d)Rasoa ho namono ny voalavo] no heverin' ny zaza
(Acc=)Rasoa Part Pst.AT.kill Det rat Foc TT.think Det child
'What the child believes is Rasoa to have killed the rat'

Data from binding relations provides even more striking evidence that the embedded trigger does not undergo raising to object, but remains within the lower clause. If we look at non-finite PVCs in English, we see that the subject of the PVC may be locally bound by the subject of the higher clause: thus, (64a) respects Condition A while (64b) is ruled out by Condition B. This pattern is consistent with an analysis whereby the subject of the PVC raises into the accusative Case position of the higher clause.

(64) a. Looking in the mirror, Daniel$_i$ saw himself$_i$ trembling
b. * Looking in the mirror, Daniel$_i$ saw him$_i$ trembling

Turning to Malagasy, the binding facts for IPVC constructions are quite different. Like English, Malagasy shows robust Condition B effects. A pronoun cannot be bound by a co-argument, as shown in (65a), which is ungrammatical under a reading where the third person pronominal object *azy* is coindexed with *Rakoto* (the sentence becomes acceptable if *Rakoto* and *azy* are contra-indexed). However, when the matrix verb selects an IPVC with a pronominal trigger, as in (65b), coindexing the pronoun with the matrix trigger becomes possible. Example (65c) is likewise grammatical, with both the matrix clause and the IPVC taking a first person singular pronominal trigger. In contrast to (64b) above, there is no Condition B violation in (65b,c).[14]

(65) a. * Nahita azy$_i$ Rakoto$_i$
Pst.AT.see 3Acc Rakoto
'Rakoto saw him(self)'

b. Nahita [azy$_i$ nangovitra] Rakoto$_i$
Pst.AT.see 3Acc Pst.AT.tremble Rakoto
'Rakoto saw him(self) trembling'

[14] The contrast between (65a) and (65b,c) also obtains when the perception verb is in the TT form and the pronoun is (contained within) the matrix trigger. In (i) below, the pronominal trigger *izy* cannot be coindexed with the non-trigger actor *Rakoto*, while coindexation is possible in (ii), where *izy* is the embedded trigger within an IPVC which itself functions as the matrix trigger. (As for why the embedded trigger appears in the nominative rather than the accusative form, see sections 4.2 and 5.1 below for discussion.)

(i) * Hitan-dRakoto$_i$ izy$_i$
TT.see.Lk=Rakoto 3Nom
'Rakoto saw him(self)'

(ii) Hitan-dRakoto$_i$ [izy$_i$ nangovitra]
TT.see.Lk=Rakoto 3Nom Pst.AT.tremble
'Rakoto saw him(self) trembling'

Pearson (2005a) shows that triggers exhibit reconstruction effects (part of the evidence that triggers occupy an A′-position), and that non-trigger actors asymmetrically bind other arguments within the predicate phrase. From this I conclude that (i) above violates Condition B rather than Condition C: *izy* reconstructs into a position where it is locally bound by *Rakoto*.

c. Nahita [ahy$_i$ nangovitra] aho$_i$
Pst.AT.see 1sAcc Pst.AT.tremble 1sNom
'I saw myself trembling'

The fact that coindexation is licit in (65b,c) shows that the matrix trigger (*Rakoto*, *aho*) is outside the local binding domain of the pronoun. If the pronoun underwent raising to object, it would be hard to explain why (65b,c) are grammatical while (65a) is not.

Interestingly, when the trigger of the IPVC is coindexed with the experiencer argument of the perception verb, it can also take the form of a reflexive. However, far from contradicting the evidence in (65), examples with reflexives provide further support for my claim that the embedded trigger does not raise out of the IPVC. Note first that reflexives in Malagasy can be simplex, consisting of the bare noun *tena* 'self' (literally 'body') (66a); or complex, taking the form of a DP in which *tena* combines with a genitive enclitic and is preceded by the determiner *ny* (66b). The former is preferred when the reflexive is a predicate-internal co-argument of its antecedent, but the latter is also more-or-less acceptable in this position.

(66) 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'

As shown below, only complex reflexives are allowed to function as the trigger of an IPVC:

(67) 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'

Paul (2004) shows that whereas *tena* is an English-type anaphor subject to Condition A, complex reflexives like *ny tenako* are capable of taking long-distance and discourse antecedents. This is illustrated below (examples taken from Paul 2004). Since *tena* must be locally bound, sentence (68a) is unambiguous: only *Rabe* is a possible antecedent for the reflexive. Example (68b), by contrast, is ambiguous, as *ny tenany* may be bound either locally (by *Ranaivo*) or non-locally (by *Rabe*). The examples in (69) illustrate a complex reflexive taking its referent from the larger discourse context.

(68) a. Nilaza Rasoa$_i$ [fa hamono tena$_{j/*i}$ Rabe$_j$]
Pst.AT.say Rasoa that Irr.AT.kill self Rabe
'Rasoa said that Rabe is going to kill himself'

b. Nilaza Rabe$_i$ [fa namitaka ny tenany$_{i/j}$ Ranaivo$_j$]
Pst.AT.say Rabe that Pst.AT.trick Det self=3Gen Ranaivo
'Rabe said that Ranaivo tricked him(self)'

(69) a. Sambatra Rabe$_i$: notoloran-dRakoto valim-pahaizana ny tenany$_i$
happy Rabe Pst.TT.offer=Rakoto prize Det self=3Gen
'Rabe$_i$ is happy: Rakoto offered him$_i$ a prize'

b. Manaja ny tenako Rabe
AT.respect Det self=1sGen Rabe
'Rabe respects me'

In light of this difference between the two types of reflexives, we see that the facts in (67) are consistent with the Condition B data in (65): only a complex reflexive, capable of taking a non-local antecedent, may function as the trigger of an IPVC. I conclude that in the IPVC construction (unlike the English ACC-*ing* construction) the matrix trigger is outside the local binding domain of the embedded trigger, showing that the embedded trigger has not undergone raising to object.

Given certain assumptions, the binding data can also be taken as evidence against treating the IPVC as a truncated clause structure—e.g., an AspP constituent, as in Felser's (1999) analysis of non-finite PVCs in English (cf. the tree in (54)). Canac-Marquis (2005) argues that the binding conditions should be understood in terms of *phase* domains. In order to account for cyclicity effects in movement, Chomsky (2001) proposes that derivations are constructed in phases. According to his *Phase Impenetrability Condition*, once the computational system creates a phase, XP, the complement of X is sent to the interfaces for interpretation and becomes invisible to subsequent stages of the derviation; only the head and specifier of XP (the *phase edge*) are accessible to further operations. Canac-Marquis extends this idea to binding, proposing that when a DP raises into a Case position and its uninterpretable Case feature is marked for deletion, a phase domain is created with the DP at the phase edge. If that DP is an anaphor, it must be bound within the next-higher phase (Condition A): binding by an antecedent outside the next-higher phase is ruled out because the anaphor is rendered inaccessible after that higher phase is created. Likewise if the DP is a pronoun, it must be free within the next-higher phase (Condition B).

This theory predicts the facts in (64) above, provided the subject of an ACC-*ing* complement is separated from the matrix subject by at most one phase boundary, with the embedded subject occupying the edge of the lower phase. By contrast, an IPVC in Malagasy must be large enough to act as the local binding domain for its highest argument (much as a tensed clause in English constitute the local binding domain for its subject), and therefore the trigger of the IPVC must be outside the accessible phase domain of the next higher argument. This in turn implies that the embedded trigger checks its Case internal to the IPVC—from which I conclude that the IPVC must be at least as large as TP.

As potential further evidence that IPVCs in Malagasy are larger than ACC-*ing* complements in English, note that the verb in an IPVC may exhibit the full array of voice forms found in main clauses (compare the examples below with those in (2) above):[15]

[15] As discussed in 3.2, sentences like (70a) are potentially ambiguous: the bracketed constituent could be an IPVC, or a DP containing a relative clause modifier. What about the bracketed constituents in (70b,c), where the verb is in the TT or CT voice? Perhaps only the DP structure is available here, and these constituents are not really IPVCs.

As evidence against this, consider (i) below, where the embedded verb (*novakin'*) takes the TT form and its internal argument functions as the trigger. Here the placement of the framing demonstrative rules out treating the bracketed constituent is a DP. Note also that the bracketed constituent is interpreted as the antecedent for *izany*, which cannot refer to the books and must instead refer to the reading event (cf. the examples in (48)). Such sentences provide strong support for the claim that the non-AT voices are compatible with the IPVC structure.

(i) Hitako [iretsy boky iretsy novakin' ny mpianatra], ary hitan-dRabe koa izany
TT.see=1sGen these book these Pst.TT.read Det student and TT.see=Rabe also that
'I saw these books being read by the students, and Rabe saw that too'

(70) a. Ren-dRasoa [ny mpamboly namono akoho tamin' ny antsy]
TT.hear.Lk=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.Lk =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.Lk =Rasoa Det knife Pst.CT.kill Det farmer chicken
'Rasoa heard the knife being used by the farmer to kill chickens'

As noted in section 2.2, I assume that the trigger occupies a high A′-position (SpecTopP) rather than an A-position, following Pearson (2005a). Pearson proposes that Malagasy voice morphology should be analyzed as a kind of generalized *wh-agreement* (in the sense of Chung 1998). Specifically, the voice of the verb identifies the Case position of an empty category (*e*) within the predicate phrase which is A′-bound by the trigger: AT marking indicates that *e* is in the nominative Case position, while TT marking indicates that *e* is in the accusative position, and so on (I return to this below; see also Pearson 2005a,b, as well as Rackowski and Richards 2005 for a similar treatment of voice in Tagalog). If something like this approach is correct, then it follows from (70) that an IPVC must be large enough to include an A′-position for the trigger—that is, it must be bigger than TP.

4.2. Evidence Against Trigger Fronting in IPVCs

Although evidence from binding and constituency tests shows that the embedded trigger does not raise out of the IPVC, we might nevertheless argue that it has undergone movement over the predicate phrase to the left edge of its clause. One possibility is that the trigger raises to a high A′-position from which it can be Case-licensed in a local Agree relation with a head X located outside the IPVC, as schematized in (71) below. Massam (1985) argues for a structure similar to this for ECM constructions in Niuean and a number of other languages.

(71) $[_{XP}\ X\ [_{CP}\ DP_i\ [_{TP}\ PredP\ t_i\ ]\ ]\ ]$

An analysis like this is plausible given how the trigger is case-marked. As mentioned in the previous section, when the perception verb is in the AT form and the IPVC occurs inside the matrix predicate phrase, the trigger of the IPVC appears in the accusative (overtly realized when the trigger is a pronoun or proper name), as in (72). However, when the perception verb is in the TT form and the IPVC functions as the matrix trigger, its own trigger appears in the nominative, as shown in (73). In 4.1 I showed that predicate-internal DP complements are marked for accusative case while triggers are marked for nominative case. Thus, the correct descriptive generalization seems to be that the position of the IPVC within the larger clause determines the morphological form of its trigger.

(72) a. Nahita [*antsika* namaky boky] Rasoa
Pst.AT.see 1inAcc Pst.AT.read book Rasoa
'Rasoa saw us reading a book'

b. Nahita [*an*-dRakoto namaky boky] Rasoa
Pst.AT.see Acc=Rakoto Pst.AT.read book Rasoa
'Rasoa saw Rakoto reading a book'

(73) a. Hitan-dRasoa [*isika* namaky boky]
TT.see=Rasoa 1inNom Pst.AT.read book
'Rasoa saw us reading a book'

b. Hitan-dRasoa [*Rakoto* namaky boky]
TT.see=Rasoa Rakoto(Nom) Pst.AT.read book
'Rasoa saw Rakoto reading a book'

Even though the trigger of an IPVC does not raise into the higher clause, the pattern in (72)–(73) suggests that it might nevertheless be Case-licensed by a head in the higher clause. For instance, we might suppose that the pronoun in (72a), upon raising to the left edge of the IPVC, is probed by the accusative Case feature on the matrix *v*; while in (73a) the raised pronoun is probed by the matrix C (or whichever head checks the Case feature on triggers). It is the category of the probe, the X head in (71), which determines the form of the trigger: accusative (*antsika*) when X = *v*, and nominative (*isika*) when X = C.

The structure in (71) is consistent with the evidence that IPVCs are clausal constituents larger than TP, yet accounts for trigger-predicate order in terms of leftward movement of the trigger. To maintain that trigger-predicate order instead results from the absence of predicate raising, as I argue in this paper, we would need to find evidence that the trigger does not undergo (additional) movement in IPVCs, but instead occupies the same position as triggers in predicate-initial clauses. Although more work needs to be done, I have so far found one piece of evidence which I believe argues against the trigger fronting analysis, having to do with the nominative forms of the first person singular pronoun.

In 4.1 I mentioned that pronouns appear in the nominative not only when they function as triggers, but in other contexts as well. For example, the nominative form is required when the pronoun is pseudo-clefted, or functions as a switch-reference topic. As discussed in 3.1, pseudo-clefted constituents occur at the left edge of the clause and are followed by the particle *no*. Switch-reference topics are likewise clause-initial, and are followed by the particle *dia* (see Keenan 1976, Paul 2000 for more on this construction). Uniquely, the first person singular pronoun has two different nominative forms, *izaho* and *aho*. These do not alternate freely, however. When the pronoun is in the normal trigger position, *aho* is preferred, although some speakers also accept *izaho*. However, when the pronoun is pseudo-clefted or topicalized, only the *izaho* form is accepted; *aho* is ungrammatical for all speakers. The distributional of *aho* versus *izaho* is illustrated below, where (74a,b) show the pronoun in root and embedded trigger position, (75a) illustrates the pseudo-cleft construction, and (75b) illustrates the switch-reference topic construction.

(74) 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 that Pst.AT.visit Det children 1sNom
'The woman thinks that I visited the children'

(75) a. { *Izaho* / **aho* } no namangy ny ankizy
1sNom Foc Pst.AT.visit Det children
'I am the one who visited the children'

b. { *Izaho* / **aho* } dia namangy ny ankizy
1sNom Top Pst.AT.visit Det children
'As for me, I visited the children'

The *izaho* form is also required in the contrastive fronting construction. Here a trigger whose referent is being contrasted with another referent appears to the left of the predicate, but without a following topic or

focus particle. The example in (76) is adapted from a sentence in a written text (Ravololomanga 1996). I assume that contrastively fronted triggers, like switch-reference topics, occupy a specifier position in the left periphery of the clause higher than the usual trigger position following the predicate.

(76) Andeha ianareo, fa { *izaho* / **aho* } miandry aty aoriana
go.on.Imp 2pNom but 1sNom AT.wait here after
'You go on ahead, and I'll wait behind'

Based on (74)–(76), it seems that *aho* occurs only when the pronoun is in the canonical trigger position, while *izaho* is required whenever the pronoun is fronted, pseudo-clefted, or otherwise displaced from this position.

Turning now to the IPVC construction: If the embedded trigger in an IPVC precedes the predicate because it has raised over the predicate to the left edge of its clause, as in (71) above, then we might expect *aho* to be disallowed in this position. However, (77) shows that this expectation is not borne out: *aho* may indeed occur as the trigger of an IPVC. In fact, most of my speakers reject the sentence if *izaho* is used in place of *aho*.

(77) Hitan-dRabe [{ *aho* / %*izaho* } namaky boky]
TT.see.Lk=Rabe 1sNom Pst.AT.read book
'Rabe saw me reading a book'

As far as I have been able to tell, speakers accept *izaho* in (77) only if they also accept *izaho* in sentences like (74). Thus we see that, with respect to the distribution of *aho* versus *izaho*, the clause-initial trigger in IPVCs patterns with the canonical clause-final trigger in root clauses, rather than behaving as though it has undergone fronting. This supports my contention that it is the absence of predicate raising which accounts for the linear order of trigger and predicate phrase in IPVCs.

5. Residual Issues

I conclude my discussion by considering two residual issues in the analysis of the IPVC construction. In 5.1 I return to the question of how the trigger in an IPVC is Case-licensed. In 5.2 I compare IPVCs with pseudo-relative PVCs in Romance, and briefly discuss whether they should receive the same analysis.

5.1. Case Marking on Triggers

In section 4 I presented evidence that the trigger of an IPVC does not raise into the higher clause to check its Case feature (raising to object), nor does it raise to the left edge of the IPVC to create an ECM configuration. Rather, data from binding seems to show that the trigger is Case-licensed internal to the IPVC. But if this is correct, how are we to account for the case morphology on the trigger? Recall that when the trigger is a pronoun or proper name, it takes the accusative form if the IPVC is a predicate-internal complement (78a), and appears in the nominative if the IPVC itself functions as the trigger of the larger clause (78b). The trigger also takes the nominative when the IPVC is pseudo-clefted, as shown in (78c).

(78) a. Nahita [*antsika* namaky boky] Rasoa
Pst.AT.see 1inAcc Pst.AT.read book Rasoa
'Rasoa saw us reading a book'

b. Hitan-dRasoa [*isika* namaky boky]
TT.see=Rasoa 1inNom Pst.AT.read book
'Rasoa saw us reading a book'

c. [*Isika* namaky boky] no hitan-dRasoa
1inNom Pst.AT.read book Foc TT.see=Rasoa
'Us reading a book is what Rasoa saw'

While I do not have a full account of case-marking in IPVCs, I believe that the alternation in (78) reflects a disconnect between the licensing configuration within which the abstract Case feature of the trigger is checked, and the licensing configuration that determines the morphological spell-out of the trigger. In brief, I suggest that while the trigger has its abstract Case checked within the IPVC, its morphological form is determined by the position of the IPVC within the larger clause.[16]

As mentioned above, I adopt Pearson's (2005a,b) assumption that the Malagasy trigger is base-generated in an A′-position, SpecTopP. Full Interpretation requires that the trigger, a DP, enter into a configuration where its uninterpretable Case feature can be checked (i.e., marked for deletion at LF and valued

[16] Another respect in which the position of the IPVC seems to affect the form of its trigger has to do with the distribution of DP versus NP arguments—where DPs include an overt determiner and are normally interpreted as definite or specific, while NPs lack a determiner and are normally interpreted as indefinite or non-specific. As numerous authors have noted (starting with Keenan 1976), a bare NP can appear within the predicate phrase as the complement of an AT verb (i), but cannot be the trigger of a clause (ii). This asymmetry is usually characterized in terms of a definiteness restriction on triggers. Such a restriction would make sense if the trigger is a kind of topic, and must therefore pick out a discourse-accessible referent.

(i) Nahita *mpianatra* (ve) Rakoto
Pst.AT.see student Rakoto
'Rakoto saw { students / a student }'

(ii) * Hitan-dRakoto (ve) *mpianatra*
TT.see.Lk=Rakoto student
'Rakoto saw { students / a student }'

It appears that when an IPVC functions as the trigger of the higher clause, with the perception verb in the TT form, its own trigger cannot be a bare NP, as shown in (iv). However, (iii) shows that a bare NP trigger *is* permitted when the IPVC is inside the predicate, with the perception verb in the AT form.

(iii) Nahita [*mpianatra* namaky boky] (ve) Rakoto
Pst.AT.see student Pst.AT.read book Rakoto
'Rakoto saw { students / a student } reading books'

(iv) * Hitan-dRakoto (ve) [*mpianatra* namaky boky]
TT.see.Lk=Rakoto student Pst.AT.read book
'Rakoto saw { students / a student } reading books'

At the moment it is unclear what the significance of sentences like (iii) is, as I have been unable to demonstrate that the bracketed constituent is indeed an IPVC denoting an event, and not a nominal phrase containing a relative clause and denoting a set of individuals ('Rakoto saw students who were reading books'). If an event perception reading is available for (iii) ('Rakoto saw the event of students reading books'), then this sentence is potentially problematic for my analysis. If there is a definiteness restriction on triggers, the why is an apparently indefinite NP (*mpianatra*) allowed to occupy the embedded trigger position in (iii)?

For reasons of space, I leave a full exploration of this issue for future work. Note, though, that Paul (2009) presents evidence showing that bare NPs can in certain circumstances be interpreted as definite/specific. It is possible that the presence or absence of *ny* is only loosely connected to the semantic definiteness of the nominal, and has more to do with its surface syntactic position. For example, suppose that NP arguments contain an empty D head which must be licensed by entering into a local c-command relation with a V head (cf. Massam 2001 on NP arguments in Niuean, which must be adjacent to the verb). If so, NP arguments should be permissible in any position where this c-command requirement is met, including the trigger position of an IPVC.

for spell-out at PF). Although the trigger merges in an A′-position, it forms a composed A′-chain with an empty category *e* inside the predicate phrase, as schematized in (79) below (abstracting away from predicate raising). A Case-checking head H probes *e*, checking both *e*'s Case feature and the Case feature on the trigger with which *e* is coindexed. The identity of H determines how the Case feature on *e* is valued, and this valuation is registered by the voice morphology on the verb: if the Case feature is valued as nominative, then the verb appears in the AT form; if the Case feature is valued as accusative, the verb appears in the TT form; and so on.[17]

(79) $[_{\text{TopP}}\ \text{DP}_i\ [_{\text{Top}'}\ \ldots\ \text{H}\ \ldots\ e_i\ \ldots\ ]\ ]$

Regardless of how the abstract Case feature of the A′-chain is valued, the trigger DP always appears in the nominative form. Pearson (2005a) argues that nominative is the morphological default in Malagasy (cf. Zribi-Hertz and Mbolatianavalona 1999), and is associated with DPs in non-Case positions, including the specifier of TopP. The fact that the trigger takes default case is not a problem, since its Case valuation—and, by extension, its grammatical function in the clause—can be determined by looking at the voice morphology on the verb. The situation is analogous to what we find in clitic left-dislocation constructions in Romance, where a dislocated pronoun appears in the default (accusative) form, and its grammatical function is encoded by the Case of the clitic with which it is coindexed.[18]

However, if my analysis of the IPVC construction is correct, then the DP in SpecTopP does not always appear in the default nominative form: in certain situations it is instead spelled out as accusative, as with the embedded trigger in (78a) above. To account for this, we might suppose that default case is overriden when the trigger appears in certain structural configurations—e.g., when it is in an embedded clause which lacks a CP layer, and is c-commanded by an accusative Case-licensing head in the higher clause, as in (78a). In such a configuration, the Case feature on the trigger would be *checked* 'from below' (by virtue of forming an A′-chain with a null element *e* in a lower Case position) but *valued* 'from above', by a c-commanding head in the higher clause (a kind of morphological ECM).

Alternatively, we might propose that the IPVC itself has a Case feature that needs to be checked, where the valuation of that feature (nominative versus accusative) is morphologically realized on the trigger of the IPVC. As one way to implement this idea, we might adopt a Distributed Morphology approach (Halle and Marantz 1993), and analyze case marking on the trigger of an IPVC as the output of a post-syntactic merger operation. Consider (80a) below, where the embedded trigger *Rakoto* takes the accusative marker *an-*. Rather than combining directly with the embedded trigger, perhaps *an-* combines with the complement clause as a whole, as in (80b), and forms a unit with *Rakoto* only in the morphology. Examples with pronominal triggers, like (78a) above, could receive a similar analysis, where the accusative form (*antsika*) results from post-syntactic merger of *an-* with a linearly adjacent D head across the IPVC constituent boundary, followed by fusion of *an-* and D into a single head.[19]

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[17] See Pearson (2005a,b) for details. Note that the above account has been simplified somewhat. On the basis of reconstruction and crossover data, Pearson (2005a) argues that *e* in (79) is actually the trace of a null operator which raises into a licensing position at the left edge of the predicate phrase (the specifier of a projection dubbed WhP, located above TP but below TopP). It is this operator with which the trigger is coindexed to form a composed A′-chain: $<\text{DP}_i \ldots Op_i \ldots t_i>$.

[18] Cf. Travis (2006), who explicitly analyzes the Malagasy trigger as a dislocated constitutent and the voice morphemes as clitic D heads.

[19] A fusion mechanism like this may be independently needed to derive non-constituent P+D portmanteau forms in languages like French: e.g., *à + le garçon > au garçon* 'to the boy'.

An obvious question raised by this analysis is why an IPVC should be marked for accusative case with *an-* only when its trigger is a proper name or pronoun, but unmarked for case when its trigger is headed by the determiner *ny*. This could presumably be explained by appealing to *late lexical insertion* (Halle and Marantz 1993): if vocabulary items are inserted into terminal nodes in the structure only after the accusative case head merges with the following D, the choice of D could determine how the case morpheme is realized—as *an-* when D heads a pronoun or proper name, and as Ø elsewhere.

(80) a. Mahita *an*-dRakoto mamaky boky aho
AT.see Acc=Rakoto AT.read book 1sNom
'I see Rakoto reading a book'

b. Mahita *an*- [$_{IPVC}$ Rakoto mamaky boky] aho

As potential evidence for the analysis in (80b), consider *an*- marking on coordinated complements. The example in (81) shows that when two proper names are conjoined, *an*- only attaches to the first conjunct while the second conjunct appears in the unmarked (nominative) form (cf. (29)–(30) above). In this respect *an*- patterns as a proclitic rather than a case affix, taking the phrase [$_{DP}$ *Rakoto sy Rabe*] as its host.

(81) Mahita *an*-dRakoto sy (**an*-d)Rabe aho
AT.see Acc=Rakoto and Acc=Rabe 1sNom
'I see Rakoto and Rabe'

Interestingly, when two predicate-internal IPVCs are conjoined, each taking a proper name as its trigger, only the trigger of the first conjunct is marked with *an*-, while the trigger of the second conjunct again appears in its default form (82a). If the second trigger is marked with *an*-, the sentence becomes ungrammatical (82b). This would seem to support the idea that *an*- combines with the IPVC as a whole, cliticizing to the leftmost element in the IPVC, as in (80b). At the very least, it suggests that the morphological form of the embedded trigger does not directly reflect its abstract Case feature, inasmuch as an embedded trigger takes accusative marking only when it occurs at the left edge of the (largest) clause.

(82) a. Mahita *an*- [dRakoto matory] ary [Rabe misakafo] aho
AT.see Acc= Rakoto AT.sleep and Rabe AT.eat:meal 1sNom
'I see Rakoto sleeping and Rabe eating a meal'

b. * Mahita [*an*-dRakoto matory] ary [*an*-dRabe misakafo] aho
AT.see Acc=Rakoto AT.sleep and Acc=Rabe AT.eat:meal 1sNom
'I see Rakoto sleeping and Rabe eating a meal'

Note finally that there is at least one other construction in Malagasy where a trigger at the left edge of an embedded clause appears in a form other than the nominative, apparently encoding the Case feature of the clause rather than its own Case feature. Recall from section 2.2 that the preposition *amin*- 'with, at, in' (*tamin*- in the past tense) can select an complement clause with trigger-predicate order to form a temporal adjunct, as in (83):

(83) tamin' [*ny mpianatra* mbola nipetraka tany Antsirabe]
with Det student still Pst.AT.live there Antsirabe
'when the student was still living in Antsirabe'

When *(t)amin*- takes a pronoun or a proper name as its complement, that complement appears in the genitive (bound) form: e.g., *tamintsika* 'with us, *tamin-dRasoa* 'with Rasoa'. Likewise, when *(t)amin*- selects a clausal complement whose trigger is a pronoun or proper name, that trigger takes the genitive form, as shown in (84). It is plausible that the genitive marking on the embedded trigger is spelling out the Case feature of the complement clause as a whole, as I assume for accusative marking on the trigger of an IPVC in complement position.

(84) a. tami(n)- [*-ntsika* mbola nipetraka tany Antsirabe]
with =1inGen still Pst.AT.live there Antsirabe
'when we were still living in Antsirabe'

b. tamin- [*-dRasoa* mbola nipetraka tany Antsirabe]
at =Rasoa(Gen) still Pst.AT.live there Antsirabe
'when Rasoa was still living in Antsirabe'

As evidence that the trigger has not raised out of the embedded clause in (84), consider what happens when the trigger is the third person pronoun. Normally when the third person pronoun is the genitive complement of by a preposition, it is spelled out as the unstressed clitic *-ny* (e.g., *taminy* 'with him/her'). Note, though, that the pronoun can combine with a modifier to form a larger DP, where possible modifiers include the demonstrative *ireo* (used to specify that the pronoun has a plural referent), as well as reciprocal kinship verbs (*mivady* 'be spouses', *mirahalahy* 'be brothers', etc.). When a modifier is present, the clitic form is disallowed and the pronoun instead appears in the default nominative form *izy*, as shown in (85) (*izy mirahalahy* is literally 'they who are brothers'). Since **tamin'izy* is ungrammatical without a modifier, it seems that the default form overrides the clitic form just in case the pronoun is properly contained within the complement of the preposition: *tamin'* [$_{XP}$ *izy* …].

(85) a. tamin' [*izy* ireo] 'with them' (* tami*ny* ireo)
b. tamin' [*izy* mirahalahy] 'with the brothers' (* tami*ny* mirahalahy)

Turning to the temporal construction in (83)–(84), we see that the default form is required when the trigger of the complement clause is a third person pronoun, even if that pronoun does not take a modifier:

(86) tamin' [{ *izy* / **-ny* } mbola nipetraka tany Antsirabe]
with 3Nom/Gen still Pst.AT.live there Antsirabe
'when s/he was still living in Antsirabe'

I take this as evidence that the trigger does not raise out of the complement clause to form a syntactic unit with the preposition. If so, then *tamintsika* in (84a) must be the output of post-syntactic merger of the preposition with the following D head across a clause boundary, leading to the insertion of the genitive form of the pronoun when D is spelled out. With regard to Case checking in the syntax, *tamin-* checks the Case feature of the complement clause, while the trigger of the complement clause has its Case feature checked by A′-binding a null argument *e* in a predicate phrase (as noted above, the Case position of *e* is identified by the voice morphology on the embedded verb).

5.2. IPVCs and Pseudo-Relatives

In Romance languages, direct perception of an event may be expressed using a *pseudo-relative* construction, illustrated in (87a) for Italian and (87b) for French (taken from Cinque 1995). Here the perception verb selects a complement, here labeled XP, consisting of a DP (*Mario*) followed by what looks like a (finite) relative clause.

(87) a. Ho visto [$_{XP}$ Mario [$_{Rel}$ che correva a tutta velocità]]
I.have seen Mario that was.running to all speed
'I saw Mario running at full speed'

b. J'ai vu [$_{XP}$ Mario [$_{Rel}$ qui courait à toute vitesse]]
I=have seen Mario that was.running to all speed
'I saw Mario running at full speed'

Cinque (1995) shows that, under the relevant event perception reading, XP in (87) patterns as a single clausal constituent, just as I have argued for IPVCs. Given the formal parallels between relative clauses

and trigger-predicate structures in Malagasy, we might wonder whether IPVCs should be analyzed as a type of pseudo-relative.

One potential piece of evidence against a pseudo-relative structure for IPVCs comes from the contrast between (88) and (89) below. These examples are distinguished by the position of the framing demonstrative *io* … *io*, showing the left and right edges of the DP containing *mpianatra* 'student'. In (88) the embedded predicate *namaky boky* 'was reading a book' is inside this DP and modifies *mpianatra* (the interpretation is that Rabe saw the student, who may or may not have been reading a book at the time). In (89), by contrast, *namaky boky* is outside the DP containing *mpianatra*, with which it combines to form an event-denoting clause (IPVC). In footnote 12, I noted that relative clauses in Malagasy are optionally introduced by the element *izay*. Since *namaky boky* is a relative clause in (88), we correctly predict that *izay* may precede it in these sentences. However, when *izay* is inserted before *namaky boky* in (89), most of the speakers I consulted found the resulting sentences to be marginal at best.[20] Insofar as *izay* is disallowed in (89), IPVCs fail to pattern with pseudo-relatives, where the constituent containing the embedded predicate is introduced by a relative complementizer (*che*/*qui* in (87)).

(88) a. Hitan-dRabe [io mpianatra (*izay*) namaky boky io]
TT.see=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'

(89) a. Hitan-dRabe [io mpianatra io (?**izay*) namaky boky]
TT.see=Rabe this student this Rel Pst.AT.read book
'Rabe saw this student 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'

Nevertheless, there are significant parallels between the structure I assume for IPVCs and the structures proposed for pseudo-relatives. Cinque (1995), for instance, argues that the constituent labeled Rel in (87) (e.g., *che correva a tutta velocità*) is a CP containing a null argument in its specifier, from which it inherits its index. This CP is interpreted as an open proposition, and stands in a predication relation with the subject of the pseudo-relative (*Mario*), with which it forms a small clause(-like) constituent. This is

[20] As indicated, most of the speakers reported that *izay* sounded slightly better in (89b) than in (89a). I have no account for this contrast. The crucial fact is that both sentences are considerably worse than their counterparts in (88).

Note that two of the speakers I consulted found the sentence in (i) below, parallel to (89b), to be fully acceptable. However, this sentence does not seem to express direct perception of an event: one of the speakers who accepted it asserted that the children were not necessarily crying when the speaker saw them.

(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'

In footnote 12 I observed that whereas bare relatives must be restrictive, *izay* relatives can be either restrictive or appositional. It is possible that appositional relatives in Malagasy merge higher than restrictive relatives—i.e., outside DP—and that (i) is an example of an appositional relative construction ('I saw those children, who were crying') rather than an IPVC. I leave it for future research to more thoroughly investigate the distribution of *izay* in perception constructions.

roughly similar to the structure I assume for trigger-predicate clauses in Malagasy (cf. (79) above). Moreover, Cinque argues that the CP 'predicate' and its subject are in turn embedded within a larger CP (the XP in (87)). This conclusion is based in part on evidence showing that XP constitutes the local binding domain for the subject of the pseudo-relative—e.g., *Mario* in (87) cannot be replaced with an anaphor without violating Condition A, whereas replacing it with a pronoun bound by the matrix subject does not violate Condition B. This is comparable to the evidence I used to argue that an IPVC in Malagasy constitutes the local binding domain for its trigger, and must thus be larger than TP.

Finally, the way in which the subjects of pseudo-relatives are marked for case follows a pattern very similar to what we find for the triggers of IPVCs: a pronominal subject takes the accusative form when the pseudo-relative appears as the surface complement of the perception verb, but appears in the nominative in other contexts, such as when the pseudo-relative is clefted. In an analysis parallel to the one offered for IPVCs in 5.1, Cinque proposes that the subject of a pseudo-relative is not assigned Case directly by a head in the higher clause; rather, the head assigns Case to the pseudo-relative, and that Case then percolates down to the subject.

Given these formal parallels, it might be possible to develop a unified analysis of IPVCs and pseudo-relatives which explains their similarities and differences. In the interests of space, I leave this as a project for future research. However, it is worth noting that whereas pseudo-relatives look quite different from simple root clauses in Romance, IPVCs resemble root clauses in Malagasy quite closely, apparently differing from root clauses only in the surface position of the predicate phrase. This might point to a crucial difference in the structure of pseudo-relatives versus IPVCs. On the other hand, we might attribute it to a difference in how root clauses are formed in the two language types, with root clauses in Malagasy having a parallel architecture to pseudo-relatives in Romance. For instance, Pearson (2005a) argues that the Malagasy trigger is base-generated in an A′-position, and binds an empty category in the predicate phrase. Likewise, pseudo-relatives contain a DP (the subject *Mario*) which is generated in a non-Case position and coindexed with an empty category inside the relative clause 'predicate'.

6. Summary

In this paper I considered the construction in (90a) below, involving (direct) perception of an event. The bracketed string in (90a) resembles the unmarked root clause in (90b), 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 surface position of the predicate phrase rather than a difference in the position of the trigger. The construction in (90a) thus provides indirect evidence that predicate-initial order in Malagasy is the result of a predicate raising operation, as proposed by Pearson (1998, 2001), Rackowski and Travis (2000), and Travis (2006), among others. In root clauses and propositional complement clauses, I claim, the predicate phrase moves leftward over the trigger, attracted by an [EPP] feature in the left periphery; however, predicate raising is blocked in event-denoting complements of perception verbs, resulting in a surface order where the trigger precedes the predicate phrase.

(90) 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 (90a) is a constituent, and is selected by the perception verb as its complement (as shown by the fact that it functions as the trigger of the higher clause when the perception verb is in the TT voice). 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* (or IPVCs).

Having established that IPVCs are clauses, I presented data from binding and pronoun morphology to show that trigger-predicate order in IPVCs is not derived by movement of the trigger over the predicate phrase. I argued that the trigger neither extracts from the embedded clause (raising to object), nor moves to the left periphery of the embedded clause in order to check its Case in the local c-command domain of a head in the higher clause (cf. Massam 1985 on ECM in Niuean). The binding data also suggests that IPVCs are not small clauses (e.g., of category AspP), but must instead by larger than TP. Though IPVCs are not introduced by an overt complementizer, and thus perhaps lack a CP layer, they must be large enough that the trigger is Case-licensed within its own clause rather than in the higher clause. Insofar as triggers pattern as A′-elements (as argued in Pearson 2005a), an IPVC must include enough structure above TP to provide an A′-specifier position for the trigger, and also prevent the trigger from being locally bound by an argument outside the clause.

In the absence of evidence that the trigger has raised over the predicate phrase, I proposed that the surface order in IPVCs instead results from the failure of the predicate phrase to raise over the trigger. I tentatively connected the 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 probes the head of TP to check a [T(ense)] feature. Since the tense feature on Fin is 'strong' (i.e., coupled with an [EPP] feature), feature checking causes TP to be displaced to SpecFinP (predicate raising). On the other hand, in clauses denoting events rather than propositions, such as IPVCs, Fin is either absent or lacking in a (strong) [T] feature; therefore, TP does not raise to SpecFinP and is 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 how the trigger of an IPVC is marked for case. When the IPVC appears as the surface complement of the perception verb, its trigger takes the accusative form; but when the IPVC is pseudo-clefted or promoted to become the trigger of the higher clause, its own trigger appears in the nominative. I proposed an explanation for this involving a disconnect between Case *checking* (the marking of an uninterpretable Case feature for deletion at the LF interface) and Case *valuation* (the assignment of a morphological feature like [Nom] or [Acc] to a DP for spell out at the PF interface). Specifically, I suggested that the trigger is base-generated in an A′-position, and checks its Case by binding a null argument *e* within the predicate phrase. While the Case position of *e* is identified by the voice morphology on the verb, the morphological form of the trigger itself is determined by the larger structural context in which it occurs: an embedded trigger is spelled out as accusative when the embedded clause surfaces in an accusative Case position; otherwise the trigger appears in the nominative, which is the morphological default for DPs in Malagasy.

Finally I noted that, with respect to constituency, binding, and case-marking, IPVCs closely resemble pseudo-relative complements in Romance (Cinque 1995). But whereas the predicate in a pseudo-relative is introduced by a relative operator or complementizer (e.g., *che* in Italian), the Malagasy relative operator/complementizer *izay* cannot precede the predicate in an IPVC. I leave it for future research to determine whether a unified structural analysis of IPVCs and pseudo-relatives is possible.

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