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Introductory Note

This is the second of two volumes of working papers on the structure of Malagasy published by the Department of Linguistics at UCLA. The first appeared in 1996 as number 17 of the UCLA Occasional Papers in Linguistics. As in the first volume, some papers were researched during the summer and fall of 1995, while Professor Ed Keenan was a Fulbright scholar at DIFP (Département Interdisciplinaire et de Formation Professionnelle) at the Université d'Antananarivo in Madagascar. Professor Keenan again expresses his appreciation to the Fulbright Program for its support and to the DIFP and Professor Roger-Bruno Rabenilaina for their collaboration and hospitality.

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Voice and diathesis in Malagasy: An overview*

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This paper draws on and extends my work of the past twenty years on “double diathesis” and the “neutrality of diathesis” in Malagasy (see e.g. Rabenilaina (1979a; 1979b; 1991). Starting with Benveniste (1966)’s distinction between processes “internal” or “external” to the subject, I propose that diathesis may be either transitive or intransitive depending on whether or not the subject is affected by the action expressed by a verb in the active voice. Moreover, I suggest that diathesis is a semantic category, in distinction to voice, which is purely morphological.

Generalizing this point of view, I will show that diathesis refers to the relation between the grammatical subject and the verbal process. Voice, on the other hand, is merely the formal structure of the verb, and remains independent of the semantic role of the subject. This analysis not only avoids the recent proliferation of voice types in Malagasy grammars, but also opens new perspectives on research which attempts to capture the often illuminating intuitions of traditional Malagasy grammarians (e.g. Weber (1855); Dahl (1951); Malzac (1960); Rahajarizafy (1960); Rajemisa-Raolison (1966)). Assuming the number of voice types passed on by these studies, I provide the outline of an analysis of voice and diathesis, drawing on more recent work, notably Rajaona (1972); Dez (1977); Builles (1984); Rabenilaina (1985). For generative approaches to voice in Malagasy, see Guilfoyle, Hung and Travis (1992) and Keenan (in press).

1 Voice

Traditional grammarians have unanimously acknowledged the existence of three voice types in Malagasy: the active, passive and relative.

1.1 Active voice

The term “active voice” groups together verbal forms which take an initial *m-* followed, depending on the root, by one of the following prefixes.

- | | | | | |
|-----|----|------|----------------|------------------|
| (1) | a. | ø | m-ø-ila | ‘look for’ |
| | b. | a | m-a-tahotra | ‘fear’ |
| | c. | i | m-i-vory | ‘meet’ |
| | d. | an | m-an-okatra | ‘open’ |
| | e. | anka | m-anka-sitraka | ‘be grateful’ |
| | f. | aha | m-aha-afaka | ‘able to remove’ |

Note that in the case of the *an-* prefix in (1d), some phonological changes may occur between the root and the prefix, namely prenasalization of any root-initial consonants. (See Paul (1996) for more discussion.) In turn, the prefixes in (1) may be augmented with causative and reciprocal affixes, which may also cooccur.

- | | | | | |
|-----|----|--------|------------------|---------------------------|
| (2) | a. | amp | m-amp-and-efa | ‘make send’ |
| | b. | if | m-if-and-efa | ‘send to each other’ |
| | c. | amp-if | m-amp-if-and-efa | ‘make send to each other’ |
| | d. | if-amp | m-if-amp-and-efa | ‘make each other send’ |

* The author would like to thank Ileana Paul for translating this article into English.

(For discussion of causative *amp-*, see Andriamierenana (1996)). Summing up, the active voice may be represented as *m-x-V*, where *x* symbolizes the prefix and *V* the root.

In a limited number of cases, the *m-x* is optional.

- | | | | | | | |
|-----|----|---------|--------|-----|-----|--------|
| (3) | a. | m-i-avy | 'come' | a.' | avy | 'come' |
| | b. | m-i-tia | 'like' | b.' | tia | 'like' |

Moreover, certain clearly verbal roots do not take any prefixes and hence fall outside this classification.

- | | | | |
|-----|----|-------|----------|
| (4) | a. | lasa | 'leave' |
| | b. | tonga | 'arrive' |

In other words, defining the active voice as above leaves some exceptions, which we set aside for further study.

From the point of view of tense and aspect, the initial *m-* expresses the present, in opposition to *n-* (past) and *h-* (future).

- | | | | |
|-----|----|----------|-------------|
| (5) | a. | m-i-vory | 'meet' |
| | b. | n-i-vory | 'met' |
| | c. | h-i-vory | 'will meet' |

The non-augmented prefix *x* may be perfective (6a) or imperfective (6b). (Phillips (in press) provides an in-depth analysis of the prefix *aha-*.)

- | | | | |
|-----|----|------------|--------------------------|
| (6) | a. | m-aha-vory | 'able to bring together' |
| | b. | m-am-ory | 'bring together' |

The active form thus encapsulates both tense and aspect in the same way as certain Indo-European languages combine person and number agreement. Note that the indicative mode is also present in the active form. The presence of the *-a* suffix distinguishes the imperative in (7b) from the indicative (7a).

- | | | | |
|-----|----|------------|-------------------|
| (7) | a. | m-am-ory | 'bring together' |
| | b. | m-am-ori-a | 'bring together!' |

In other words, the active voice indicates tense, aspect and modality within a single morpheme.

1.2 Passive

The passive voice includes verbal forms with the *a-* prefix and those with the *-ina* or *-ana* suffixes. Examples are given below.

- | | | | |
|-----|----|-------------|-----------------------|
| (8) | a. | a-vory | 'is brought together' |
| | b. | sokaf-ana | 'is opened' |
| | c. | sitrana-ina | 'is cured' |

Once again, tense, aspect and mood are morphologically expressed. Forms such as those in (8) are present, indicative and imperfective. For tense, the present tense zero affix alternates with *no-* (past) and *ho-* (future). (8c) thus contrasts with (9a,b).

- (9) a. no-sitran-ina 'was cured'
 b. ho-sitran-ina 'will be cured'

The imperative is formed by adding the suffix -y or -o in place of the passive suffix.

- (10) a. loko-ana 'is painted'
 b. loko-y 'may it be painted!'
 c. sitran-ina 'is cured'
 d. sitran-o 'may it/she/he be cured!'

The perfective affixes *tafa-*, *voa-*, *-in-*, and \emptyset are also possible, depending on the root.

- (11) a. voa-kapoka 'has been hit'
 b. kapoh-ina 'is hit'
 c. tafa-tsangana 'has been stood up'
 d. a-tsangana 'is stood up'
 e. f-in-afa 'has been erased'
 f. faf-ana 'is erased'
 g. vaky 'has been broken'
 h. vak-ina 'is broken'

These passive affixes are added with or without phonological modifications to the root. In certain cases, there is variation among speakers with respect to these changes. For example, the following are all possible passive forms of the root *vidy* 'buying' or 'selling'.

- (12) a. a-vidy 'is put on sale'
 b. am-idy 'is put on sale'
 c. amb-idy 'is put on sale'

As for *-ina* and *-ana*, the changes are somewhat more complex (stress shift, vowel change). I refer the reader to the works cited earlier and Erwin (1996) for discussion and analysis of the phonological modifications. With certain roots, the passive suffix can or must be accompanied by an active prefix. (13b) is thus a non-existent *-ina* passive, while both (14b) and (14c) are possible passive forms.

- (13) a. halatra 'action of stealing'
 b. *halarina
 c. ang-alarina 'is stolen'

- (14) a. voly 'action of planting'
 b. volena 'is cultivated'
 c. ambolena 'is cultivated'

The cooccurrence of the active prefix and the passive suffix also obtains (obligatorily) with complex active affixes, such as the causative and reciprocal forms.

- (15) a. m-amp-and-efa 'make send'
 b. amp-and-efa-sana 'be made to send'
 c. m-if-and-efa 'send to each other'
 d. if-an-efa-sana 'be sent to each other'

Note that these forms are clearly passive, and not relative (see below), as they contain the passive suffix *-ina*, which never occurs in the relative voice.

1.3 Relative

The relative, or circumstantial, voice is defined by the relational or bi-morphemic nature of the derived verb. Simplifying somewhat, the relative verb combines both the active and passive voices and could be called a circumfix. The two elements are discontinuous but correlated: first, the active and finally the passive suffix *-ana*.¹

- (16)
- | | | |
|----|-------------|-------------------------------|
| a. | ø-il-ana | 'circumstance of looking for' |
| b. | a-tahor-ana | 'circumstance of fearing' |
| c. | i-vori-ana | 'circumstance of meeting' |

I set aside here the traditional interpretation that the term "relative" refers to the relation between the verbal action and the different types of circumstance. Instead, I keep to a purely formal definition that refers exclusively to the morphological structure of the derived verb. This position has important consequences, not the least being the possibility of a wide range of interpretations associated with the relative voice. In other words, the relative voice is defined as *m-x-V-ana*, where *x* is once again the active voice and *-ana* the passive.

2. Diathesis

I have suggested above that voice is a morphological category, while diathesis is semantic. The latter affects the value of the relations established between a verb and its complement(s), as well as the possibility of focussing the logical subject or a complement. In the case of subject focus, I use the term "basic diathesis". "Derived diathesis" indicates the focus of a complement.

2.1 Basic diathesis

Basic diathesis, which obtains in the active voice, is subdivided into two types, depending on whether the sentence is simple or complex. For the purposes of this paper, I will consider only simple sentences. Here, I draw on the terminology of Benveniste (1966) in describing transitive and intransitive diathesis. In both cases, the subject is both the actor and the focus of the process. For transitive diathesis, the subject is "exterior" and effects the process. Intransitive diathesis involves an "interior" subject which both effects the process and is affected by the process. A sentence with a transitive diathesis is formally defined as having a complement in direct construction with the verb. This complement may take a determiner, as in the example below.

- (17) Mikapoka (ny) mpianatra isan'andro Rabe.
 hit the student each'day Rabe
 'Rabe hits (the) students every day.'

Conversely, the complement *mpianatra* 'student' may not take the preposition *amin'*. In other words, (18) is not equivalent to (17).

- (18) Mikapoka amin'ny mpianatra isan'andro Rabe.
 hit at'the student each'day Rabe
 'Rabe hits some of the students every day.'

¹ As pointed out by Keenan (in press), only the *-ana* suffix occurs in the relative voice, never the *-ina*. The relative voice is thus distinguished from the passive examples in (14) and (15) which combine the active prefix and the passive *-ina* suffix.

In traditional terminology, *mpianatra* ‘student’ is a direct object (patient) and undergoes the action expressed by the verb.

A sentence with an intransitive diathesis, on the other hand, contains a complement which may or must be indirectly tied to the verb. For example, in (19), *fiara* ‘car’ may appear without a preposition. In (20), however, *ny marary* ‘the patient’ obligatorily takes the preposition *amin’*.

- (19) Mandeha (amin’ny) fiara nohon’ny hamehana i Soa.
go at’the car because’the hurry Soa
‘Soa goes by car because she is in a hurry.’

- (20) Mitsiky amin’ny marary amim-pahatoniana ny dokotera.
smile at’the sick at-calm the doctor
‘The doctor smiles calmly at the patient.’

In other words, *fiara* ‘car’ in (19) is an indirect instrumental object, while *ny marary* ‘the patient’ is an indirect dative object.

As objects, the direct and indirect complements cannot be separated from the verb by topicalization. This involves preposing of the complement and the particle *dia*. (21), (22) and (23) therefore contrast with (17), (19) and (20).

- (21) *Ny mpianatra dia mikapoka isan’andro Rabe.
the student top hit each’days Rabe
- (22) *Amin’ny fiara dia mandeha nohon’ny hamehana i Soa.
at’the car top go because’the hurry Soa
- (23) *Amin’ny marary dia mitsiky amim-pahatoniana ny dokotera.
at’the sick top smile at-calm the doctor

Topicalization thus serves as a test to distinguish objects from non-objects. Ungrammatical with objects ((21) - (23)), this construction is grammatical with non-objects or “circumstantials”.² The following examples illustrate the topicalization of a temporal complement (24), a causal complement (25), and a manner adverbial (26).

- (24) Isan’andro dia mikapoka (ny) mpianatra Rabe.
each’days top hit the student Rabe
‘Every day, Rabe hits (the) students.’
- (25) Nohon’ny hamehana dia mandeha (amin’ny) fiara i Soa.
because’the hurry top go at’the car Soa
‘Because she is in a hurry, Soa goes by car.’
- (26) Amim-pahatoniana dia mitsiky amin’ny marary ny dokotera.
at-calm top smile at’the sick the doctor
‘Calmly, the doctor smiles at the patient.’

From this perspective, an object is an essential complement, closely tied to the verb, in opposition to a circumstantial which is optional and more “distant”. Some grammars make the distinction between verbal and phrasal complements, for objects (direct or indirect) and circumstantials.

² Topicalization of the grammatical subject is also always acceptable.

The circumstantial can also be identified as a predicate, its subject being none other than the entire sentence that accompanies it. As shown by the examples in (27) - (29), the “subject” of the circumstantial predicate can be replaced by the neutral demonstrative *izany* ‘that’.

- (27) Mikapoka (ny) mpianatra Rabe. Isan’andro izany.
hit the student Rabe each day that
‘Rabe hits (the) students. This happens every day.’
- (28) Mandeha (amin’ny) fiara i Soa. Nohon’ny hamehana izany.
go at’the car Soa because’the hurry that
‘Soa goes by car. This is because she is in a hurry.’
- (29) Mitsiky amin’ny marary ny dokotera. Amim-pahatoniana izany.
smile at’the sick the doctor at-calm that
‘The doctor smiles at the patient. This is done calmly.’

These data suggest that any sentence containing a circumstantial is in fact a complex sentence with (at least) two predicates. This is not the case with sentences that involve only objects.

- (30) *Mikapoka Rabe. Mpianatra izany.
hit Rabe student that
- (31) *Mandeha i Soa. Fiara izany.
go Soa car that
- (32) *Mitsiky izy. Amin’ny marary izany.
smile he at’the sick that

Once again, objects are more tightly connected to the verb, while circumstantials appear to relate to the sentence as a whole.

2.2 *Derived diathesis*

Derived diathesis involves the passive and relative voices. As in basic diathesis, there are two types, depending on whether the sentence is objective or circumstantial. These two types result from certain syntactic transformations which operate on an active sentence and focalize an object or a circumstantial. These diathetic transformations allow variations of the active structure that focus different complements. Therefore, there are as many derived diatheses as there are types of complement. I have found at least five objective diatheses (passive, instrumental, goal, dative, locative) and one circumstantial diathesis with the values of time, location, cause, manner, means. These are summed up below.

- (33) a. “passive” transformation: the direct object appears in the subject position;
b. “instrumental”, “goal”, “dative”, “locative” and “means” transformations: the instrumental/goal/dative/locative/means) object appears in the subject position;
c. “circumstantial” transformation: a circumstantial appears in the subject position.

In the three cases, the verb form changes and thus takes the required voice affixes and appears with an encliticized genitive agent. (The genitive in Malagasy is discussed in Paul (1996)). The transitive construction as in (34a) takes a relative form for both the passive (34b) and the circumstantial diathesis (34c).

- (34) a. Matahotra ny alika i Soa eny an-dalana.
fear the dog Soa there at-road
'Soa is afraid of the dog in the road.'
- b. Atahoran'i Soa eny an-dalana ny alika.
rel-fear'Soa there at-road the dog
'Soa is afraid of the dog in the road.'
- c. Atahoran'i Soa ny alika eny an-dalana.
rel-fear'Soa the dog there at-road
'Soa is afraid of the dog in the road.'

The intransitive (35a) selects a passive form for the locative diathesis (35b) and a relative form for the locative and temporal diatheses (35c,d).

- (35) a. Mandeha amin'ny lalan-dratsy ny fiara ankehitriny.
go at'the road-bad the car now
'Cars go on bad roads these days.'
- b. Alehan'ny fiara ankehitriny ny lalan-dratsy.
pass-go'the car now the road-bad
'Cars go on bad roads these days.'
- c. Andehanan'ny fiara ankehitriny (amin') ny lalan-dratsy.
rel-go'the car now at'the road-bad
'Cars go on bad roads these days.'
- d. Andehanan'ny fiara amin'ny lalan-dratsy ankehitriny.
rel-go'the car at'the road-bad now
'Cars go on bad roads these days.'

Finally, the transitive sentence in (36a) appears in the relative form for the dative diathesis shown in (36b).

- (36) a. Miresaka fianarana amiko i Soa.
talk studies at-me Soa
'Soa talks about studying with me.'
- b. Iresahan'i Soa fianarana aho.
rel-talk'Soa studies I
'Soa talks about studying with me.'

Interestingly, when the indirect object is an instrument or a goal, the circumfix *i-...-ana* is sometimes equivalent to the prefix *a-* or to the suffixes *-ana/-ina*. In this way, transformations apply to (37a) and derive the relative form for the instrumental diathesis in (37b) and the passive form for the instrumental diathesis in (37c).

- (37) a. Mandafika ny atody amin'ny bozaka i Soa.
make-bed-under the egg at'the straw Soa
'Soa makes a bed under the eggs with straw.'

- b. Andafihan'i Soa ny atody ny bozaka.
rel-make-bed-under'Soa the egg the straw
'Soa makes a bed under the eggs with straw.'
- c. Alafikin'i Soa ny atody ny bozaka.
pass-make-bed-under'Soa the egg the straw
'Soa makes a bed under the eggs with straw.'

Similarly, the relative is used in (38b) and the-passive in (38c) for a goal diathesis.

- (38) a. Mamafy voan-daisoa amin'ny tanin'anana i Soa.
sow seed-cabbage at'the earth'vegetable Soa
'Soa sows cabbage seeds in the vegetable garden.'
- b. Amafazan'i Soa voan-daisoa (amin') ny tanin'anana.
rel-sow'Soa seed-cabbage at'the earth'vegetable
'Soa sows cabbage seeds in the vegetable garden.'
- c. Fafazan'i Soa voan-daisoa ny tanin'anana.
pass-sow'Soa seed-cabbage the earth'vegetable
'Soa sows cabbage seeds in the vegetable garden.'

Clearly, comparing (38b) and (38c) (as well as (37b) and (37c)) indicates that it is not the voice morphology (different in each case) which determines the interpretation of the subject noun phrase (the same in each case). Examples of this type are not unusual.

As the above data show, a single verbal form does not always correspond to one syntactic structure. The form (or voice) is only the partial expression of the meaning (or diathesis) in the case of the instrumental, goal and passive sentences. In other words, the subject of a verb built from a given voice morpheme does not have a consistent semantic role. Rather than attempting to attribute a particular meaning to a verbal form, it is important to try to determine in which environment a lexical item (here, a verb) acquires which semantic range.

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Malagasy Adverbs

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1. Introduction

This paper is an examination of adverbs in Malagasy -- their position, nature, and implications for linguistic theory. Taking as a base the theory of adverbs in Cinque (1997), I examine the empirical aspects of Malagasy and then attempt to translate Cinque's framework into this language. While much of his theory is indeed applicable to Malagasy, its introduction there forces some reformulation of his arguments to account for word order.

This paper also basically assumes the Antisymmetry of Syntax Theory of Kayne (1994). The interaction of this theory with Cinque's in Malagasy raises some questions that, with preliminary answers proposed here, may have widespread implications for phrase structure in general. In particular, non-contentful phrases, certain types of movement, and category invisibility all appear to be necessary in this synthesis of language and theory, and perhaps in other situations as well.

A restrictive theory that has some capacity to predict and explain the adverb facts is the basic aim of this paper. The best case would be a theory that could adhere to some "universal" principles while correctly and consistently predicting the empirical facts from Malagasy, without too many drastic changes. I will discuss a version of this later in the paper. Many of the problems that remain with this theory can be traced back to the basic requirements of Kayne's framework.

I begin with a brief exposition of Cinque's theory of adverbs, then give a background of Kayne's Antisymmetry of Syntax Theory. I then move on to the facts of Malagasy, and finally end with a structural account to synthesize all of these parts.

2. Cinque -- Theoretical Background

Cinque (1997) demonstrates the surprisingly constant cross-linguistic order of adverbs. Assuming adverbs to be heads of their own maximal projections, he shows that there exists an underlying relative order of Adverb Phrases that holds in many languages (he uses data mainly from Romance). While there do exist combinations of adverbs that do not appear at first to follow his hierarchy, many of the aberrant orders which he encounters can be shown to be the result of movement. His theory also offers an explanation for the different positions the verb may occupy with respect to adverbs. While his positive evidence for the hierarchy in the form of these results does not necessarily mean his theory is correct, it does indicate that the idea is at least valid enough for further exploration and discussion. I do not go into his arguments in great detail here (especially those concerning functional categories), rather assuming them as a basis from which to begin exploring the facts of Malagasy. One should refer to Cinque's own work for a full explanation of the theory.

2.1 *Order*

To determine the relative order of adverbs, Cinque uses sentences which contain two or three of them at a time, and shows that they transitively indicate a constant hierarchy of adverbs where each has one and only one distinct base position. This process is demonstrated in the following examples, taken from him.

- (1) a. Alle due, Gianni non ha *solitamente mica* mangiato, ancora.
'At two, G. has usually not eaten yet.'
- b. * Alle due, Gianni non ha *mica solitamente* mangiato, ancora.
'At two, G. has not usually eaten yet.'
- (2) a. Non hanno *mica gia* chiamato, che io sappia.
'They have not already telephoned, that I know.'
- b. * Non hanno *gia mica* chiamato, che io sappia.
'They have already not telephoned, that I know.'
- (3) a. All'epoca non possedeva *gia piu* nulla.
'At the time (s)he did not possess already any longer anything.'
- b. * All'epoca non possedeva *piu gia* nulla.
'At the time (s)he did not possess any longer already anything.'
- (4) a. Non hanno chiamato *mica piu*, da allora.
'They haven't telephoned not any longer, since then.'
- b. * Non hanno chiamato *piu mica*, da allora.

Omitting several more such examples and logical steps of transitivity, the final relative order of adverbs put forth by Cinque is:

- (5) *solitamente*> *mica*> *gia*> *piu*> *sempre*> *complemente*> *tutto*> *bene*
usually> not> already> any longer> always> completely> all> well

These adverbs are representatives of larger classes, whose members share the same positions and for this reason cannot co-occur. *Solitamente*-class adverbs, for instance, include *generalmente*, *abituamente*, and *normalmente*, etc. (generally, habitually, and normally, etc.), and cannot appear in the same sentence together.

2.2 Location of Adverbs

Drawing on evidence from various languages, Cinque shows that there exists a similar 'universal' order of inflectional categories in a sentence (i.e. MoodP before TP before ModalP, etc.). Using this in conjunction with the order of adverbs, he postulates that the universal order of adverbs and the universal order of inflectional elements are related and that, in fact, adverbs are located in the Specifier positions of the functional phrases which contain inflection in their heads.

The possibility of verb past participle movement to different positions between adverbs, he claims, indicates the existence of a head between the adverbs, into which the verb may move. Since, he argues, the only position possible between two heads (where the verb is demonstrated to appear) is a Spec, the AdvPs must be in the Specs of the functional categories.

- (6) a. Da allora, non hanno **rimesso** di solito mica piu sempre completamente tutto bene in ordine.
- b. Da allora, non hanno di solito **rimesso** mica piu sempre completamente tutto bene in ordine.
- c. Da allora, non hanno di solito mica **rimesso** piu sempre completamente tutto bene in ordine.

- d. Da allora, non hanno di solito mica piu **rimesso** sempre completamente tutto bene in ordine.
- e. Da allora, non hanno di solito mica piu sempre **rimesso** completamente tutto bene in ordine.
- f. Da allora, non hanno di solito mica piu sempre completamente **rimesso** tutto bene in ordine.
'Since then, they haven't usually not any longer always put everything well in order.'

3. Kayne -- Theoretical Background

Here again, I do not offer a complete account of Kayne's book-length theory. What follows is only a sketch of his main points and the implications that these have for phrase structure, particularly in Malagasy.

3.1 *Basic Shape of Syntax*

Using a variety of arguments, Kayne arrives at the *Linear Correspondence Axiom*, which means basically that syntactic trees may only be right-branching and maximal projections may only have one element adjoined to them. Kayne takes the one permitted adjunction to a phrase to be the Specifier of the phrase, which means that no other kind of adjunction to maximal projection is allowed. Kayne includes many facts and arguments to support his theory, but for the purposes of this paper, I simply assume it.

3.2 *Implications of the theory*

Kayne's system creates a need for much movement out of the SVO order which is the base in every language. For example, to obtain a language's surface SOV order from an underlying SVO one, the object must raise above the verb to some empty position that is available as a landing site. S-O-PP-V requires that the object and the PP both raise (together) to a position between the subject and the verb. To get VOS order in a language such as Malagasy, the verb and the object must raise (together in the VP or possibly separately) to some position above the subject. In this way, all non-SVO surface orders are generated, and all are the result of movement.

In requiring movement to obtain surface orders, Kayne (1994) forces, by necessity, the existence of a large number of empty functional categories into which other elements can move. Kayne-type trees either need empty FPs between each visible FP to allow movement, or else they need some sort of mechanism by which empty FPs can be inserted in different (perhaps specific and restricted) positions in the syntax for the correct surface order to obtain. Alternatively, some hybrid solution of the two may be necessary, where some empty phrases are always present to allow for movement of other elements into them, while other categories have the ability to build their own phrases within a certain range of positions.

Requiring movement also creates another major problem for Kayne's theory. If all languages are underlyingly SVO and move to the positions they occupy at S-structure, and there is quite a lot of movement all the time in every language, then why and how this movement is motivated in each specific case is a difficult question. Every movement could be said to be caused by a need to check certain features, but this is not very restrictive and does not predict where or when elements may move, as similar phrases seem to move to different positions in many cases. In the case of a VOS language like Malagasy, the verb and object must both raise above the subject to some position, but why they should be required to do so in this language and not in others is not easy to answer. One answer could be that Malagasy, unlike other languages, has a specific need to check certain features in a Spec-head relation, while other languages require a head-

complement relation to do the same thing, and so different movements occur cross-linguistically, but clearly this is very vague at this point and requires further comparisons.

Much of the movement required in Kayne's theory to create the surface order of elements also seems to violate Relativized Minimality (Rizzi 1990) in some way. Certain elements must raise over open positions in order to occupy the spot they have at S-structure. This and the problem of motivating movement both seem to me to be problems inherent in Kayne's system, in need of serious justification if they are to be explained. This task is far beyond the purposes of this paper, and so is left as a question for future research.

4. Malagasy Facts

Malagasy is a VOS language where adverbs occupy a position either directly before or after the verb phrase. Some adverbs optionally occur between the verb and its complement.¹

- (7) Efa nanasa lamba Rakoto.
 already pst-wash clothes Rakoto
 'Rakoto has already washed clothes.'
- (8) a. Manasa lamba tsara Rakoto.
 wash clothes well Rakoto
- b. Manasa tsara ny lamba Rakoto.
 wash well det. clothes Rakoto
 'Rakoto washes clothes well.'

The following sections are devoted to expanding and digesting these data.

4.1 Framing Pairs

Keenan (1991) discusses some Malagasy adverbs which occur in pairs, 'framing' the VP (or the V in some cases). One such combination is the negative pair *tsy* 'not' and *intsony* 'anymore' or *mihitsy* 'at all'.

- (9) a. Tsy manasa lamba intsony Rakoto.
 Neg wash clothes anymore Rakoto
- b. Tsy manasa intsony ny lamba Rakoto.
 Neg wash anymore det. clothes Rakoto
 'Rakoto doesn't wash clothes anymore.'
- (10) a. Tsy manasa lamba mihitsy ve Rakoto?
 Neg wash clothes at-all ? Rakoto
- b. Tsy manasa mihitsy ny lamba ve Rakoto?
 Neg wash at-all det. clothes ? Rakoto
 'Does Rakoto not wash clothes at all?'

¹ For much of this paper, I stick to the boring but simple example *Manasa lamba Rakoto*, 'Rakoto washes clothes,' because it is easy to see where the adverbs are located in such a bare sentence and it allows more direct sighting of the different possibilities.

Another framing pair is *na (dia)...aza*, which translates roughly as ‘even...though’. The first half of the pair, *na(dia)*, always occurs very first in the clause. The second half, *aza*, always appears last after all of the other adverbs. While perhaps not strictly an adverb², its status as a pair adds some interesting order restrictions to Malagasy sentences. Examples are given in (11).

- (11) Faly ve Rakoto na dia tsy manasa lamba intsony mihitsy aza izy?
happy ? Rakoto ‘even’ Neg wash clothes anymore at-all ‘though’ 3p
‘Is Rakoto happy even though she doesn’t wash clothes at all anymore?’
- (12) Na dia tsy manasa lamba intsony aza ny mpiasa rehetra...
‘even’ Neg wash clothes anymore ‘though’ det. worker all
‘Even though all the workers don’t wash clothes anymore...’ (...they are still sad, etc.)

4.2 *Matetika*

Matetika, which means ‘generally’ or ‘often’, is somewhat problematic in terms of order. It appears both first among the pre-verbal elements, and last in the entire sentence, with the same meaning.

- (13) **Matetika** tsy mandamina intsony mihitsy ny trano Rakoto.
generally Neg arrange anymore at-all det. house Rakoto
‘Rakoto does not generally put the house in order at all anymore.’
- (14) Tsy mandamina intsony mihitsy ny trano Rakoto **matetika**.

It can also occur among the post-verbal adverbs.

- (15) Tsy mandamina **matetika** intsony mihitsy ny trano Rakoto.

According to Cinque, ‘generally’ should be first in the hierarchy of adverbs, which corresponds to the *matetika* which appears before the pre-verbal adverbs, as in (15). It is a puzzle why it can also occur in so many other places, when the other Malagasy adverbs are more or less restricted in location. There is, however, a logical explanation for this behaviour, which will become apparent later, during the discussion of structure.

When *matetika* appears directly after the verb, among the other post-verbal adverbs, it is not the same as the pre-verbal and post-sentential occurrence. It has a somewhat different meaning, being able to modify the verb alone, rather than the entire sentence (an option which is not available to the other occurrences of *matetika*). It does not occur here as naturally as in the other locations because there must be a special context. Because the different behaviour of this adverb sets it apart from the others, it indicates a need for different kind of treatment in the structure

4.3 *Preverbal Adverbs*

The Malagasy adverb which corresponds to Cinque’s *not* class is *tsy*. It occurs before the VP, alone as well as in a framing pair with other negative adverbs after the verb.

² It may actually be a complementizer located in CP. If true, the order facts would be quite logical, because CP is highest in the sentence, as is *na(dia)*’s position highest in the sentence. Furthermore, *Na(dia)* ‘even though’ seems to have a complementizer type of meaning.

- (16) Tsy manasa lamba Rakoto.
Neg wash clothes Rakoto
'Rakoto doesn't wash clothes.'
- (17) Tsy manasa lamba intsony Rakoto.
Neg wash clothes anymore Rakoto.
'Rakoto does not wash clothes anymore.'

Efa is the Malagasy adverb which corresponds to Cinque's *already* class. It is also before the VP in the sentence. When it co-occurs with *tsy*, two orders are possible.

- (18) Efa nanasa lamba Rakoto.
already pst-wash clothes Rakoto
'Rakoto already washed clothes.'
- (19) a. Efa tsy nanana inona na inona izy ve tamin'izany andro izany.
already Neg pst-have "nothing" 3p ? "once upon a time"
- b. Tsy efa nanana inona na inona izy ve tamin'izany andro izany.
'At the time, he already possessed nothing.'

The next adverb which appears is *mbola*, corresponding to *still*. Co-occurring with *tsy* or *efa*, many combinations of order are possible, as shown below.

- (20) Mbola manasa lamba Rakoto.
still wash clothes Rakoto
'Rakoto still washes clothes.'
- (21) a. Tsy mbola hainy foana [ny tokony ha tao] rehefa misy ny olana.
Neg still know-3 always "what should do" when exist det. problem
- b. Mbola tsy hainy foana [ny tokony ha tao] rehefa misy ny olana.
'When there is a problem, he always already knows what to do.'
- (22) Efa mbola tsy mahay lesona Rakoto no mbola mitabataba.
already still Neg know lesson Rakoto Foc still talkative
'Not only does he not know his lessons, but he is talkative also.'
- (23) Tsy mbola efa nahavita nisakafo Rakoto matetika amin'ny roa ora.
Neg still already finish-pp eat-pst Rakoto usually at 2 o'clock
'Rakoto has not eaten yet at 2 o'clock.'

The pre-verbal confusion intensifies with the following examples, in which *tena*, an intensifying adverb, intervenes between adverbs.

- (24) Tsy tena mbola mahay mandihay Rakoto.
Neg Intensifier still know dance Rakoto
'Rakoto really does not know how to dance yet.'
- (25) Mbola tena tsy mahay mandihay Rakoto.
'Rakoto still really does not know how to dance.'

4.4 Post-verbal Adverbs

The post-verbal adverbs may appear either after the entire VP (verb head and its complement) or between the verb head and the complement NP. When one or more adverbs appears between verb and complement, the complement must be definite.

The post-verbal adverbs display many relative orders. They do not follow a very strict hierarchy, but one order does seem more natural than others. It is this order that follows.

First after the verb is *tsara*, which means ‘well’.

- (26) a. Manasa lamba tsara Rakoto.
wash clothes well Rakoto
- b. Manasa tsara ny lamba Rakoto.
wash well det. clothes Rakoto
‘Rakoto washes (the) clothes well.’

Tanteraka, meaning ‘completely’, is second.

- (27) a. Manasa lamba tanteraka Rakoto.
wash clothes completely Rakoto
- b. Manasa tanteraka ny lamba Rakoto.
wash completely Det. clothes Rakoto
‘Rakoto washes (the) clothes completely.’
- (28) Manasa lamba tsara tanteraka Rakoto.
‘Rakoto completely washes clothes well.’

Next comes *foana*, meaning ‘always’.

- (29) a. Manasa lamba foana Rakoto.
b. Manasa foana ny lamba Rakoto.
‘Rakoto always washes clothes.’
- (30) a. Manasa lamba tanteraka foana Rakoto.
‘Rakoto always completely washes clothes.’
- b. * Manasa lamba foana tanteraka Rakoto.
- (31) a. Manasa lamba tsara foana Rakoto.
‘Rakoto always washes clothes well.’
- b. * Manasa lamba foana tsara Rakoto.

After *foana*, the post-verbal half of the framing pair *tsy* - *intsony* appears.

- (32) a. Tsy manasa lamba intsony Rakoto.
Neg wash clothes anymore Rakoto
- b. Tsy manasa intsony ny lamba Rakoto.
Neg wash anymore det. clothes Rakoto
‘Rakoto does not wash (the) clothes anymore.’

- (33) a. Tsy manasa lamba tanteraka intsony Rakoto.
 'Rakoto does not completely wash clothes anymore.'
 b. * Tsy manasa lamba intsony tanteraka Rakoto.

- (34) a. Tsy manasa lamba tsara intsony Rakoto.
 'Rakoto does not wash clothes well anymore.'
 b. * Tsy manasa lamba intsony tsara Rakoto.

- (35) a. Tsy manasa lamba foana intsony Rakoto.
 'Rakoto does not wash clothes well always.'
 b. * Tsy manasa lamba intsony foana Rakoto.

Mihitsy follows *intsony*, *foana*, *tanteraka*, and *tsara*.

- (36) a. Tsy manasa lamba mihitsy Rakoto.
 Neg wash clothes at-all Rakoto
 b. Tsy manasa mihitsy ny lamba Rakoto
 Neg wash at-all det. clothes Rakoto
 'Rakoto does not wash (the) clothes at all.'
- (37) a. Tsy manasa lamba tanteraka intsony mihitsy.
 'Rakoto does not wash clothes completely at all anymore.'
 b. * Tsy manasa lamba mihitsy intsony tanteraka Rakoto.
- (38) a. Tsy manasa lamba tsara intsony mihitsy Rakoto.
 'Rakoto does not wash clothes well anymore at all.'
 b. * Tsy manasa lamba intsony mihitsy tsara Rakoto.
- (39) a. Tsy manasa lamba foana intsony mihitsy Rakoto.
 'Rakoto does not always wash clothes anymore at all.'
 b. * Tsy manasa lamba mihitsy intsony foana Rakoto.

Other post-verbal adverbs are the speech-act adverbs *ve* and *anie*, which always occur just before the subject.

- (40) a. Efa nanasa lamba ve Rakoto?
 already pst-wash clothes ? Rakoto
 'Has Rakoto already washed clothes?'
 b. * Efa nanasa ve ny lamba Rakoto?
- (41) a. Tsy hanasa lamba intsony anie Rakoto!
 Neg fut-wash clothes anymore Hort Rakoto
 'May Rakoto not wash clothes anymore!'
 b. * Tsy hanasa anie ny lamba intsony Rakoto!

5. Order

Comparing Cinque's predicted order with the one that actually occurs in Malagasy, it appears that the post-verbal adverbs are in the opposite order from the one expected of them. Cinque's order is in (42) and Malagasy's is in (43)³.

- (42)
- | | | | | | |
|--------------|-------------|--------------|-----------|---------|------------|
| 1 | 2 | 3 | 4 | 5 | 6 |
| (speech act) | > Generally | > Neg | > Already | > Still | > (at-all) |
| | | | | | |
| 7 | 8 | 9 | 10 | | |
| Anymore | > Always | > Completely | > Well | | |

- (43)
- | | | | | | | |
|------------------|-------------------|------------------|------------------|----------------|--------------|---------------|
| | 2 | 3 | 4 | 5 | (3) | 10 |
| <i>Na(dia)</i> | > <i>Matetika</i> | > <i>Tsy</i> | > <i>Efa</i> | > <i>Mbola</i> | > <i>Tsy</i> | > <i>Verb</i> |
| 'Even' | > generally | > Neg | > Already | > Still | > Neg | > Verb |
| Well | | | | | | |
| | | | | | | |
| 9 | 8 | 7 | 6 | 1 | | |
| <i>Tanteraka</i> | > <i>Foana</i> | > <i>Intsony</i> | > <i>Mihitsy</i> | > <i>Aza</i> | > <i>Ve</i> | |
| Completely | > Always | > Anymore | > At-all | > 'though' | > Speech Act | |

The comparison of these orders is interesting because of their apparent classification into three separate groups. Pre-verbal adverbs (with the exception of *tsy*, to which I return presently) follow Cinque's order exactly. Post-verbal adverbs exactly reverse Cinque's order, and Speech Act adverbs appear at the very end of the sentence, rather than at the very beginning.

5.1 Preverbal

One explanation for the variability of adverb orders might be to suggest that languages treat their adverbs differently, according to a parameter. In Romance, where Cinque's theory seems to hold, languages would place AdvPs in the Specs of functional categories, while in Malagasy-type languages adverbs would be heads of their own phrases, or possibly be base-generated adjoined to a head, as proposed in Travis (1988). Clearly, however, it would be preferable to have one underlying explanation for all the adverb facts cross-linguistically, as this would form part of a desirably restricted system. Since this paper is about Cinque's theory, I will attempt to formulate a solution which fits into his framework.

Malagasy's pre-verbal adverbs exhibit several different orders. *Efa* and *mbola* occur both before and after *tsy* - a direct contrast with Cinque's theory which predicts that the order should be rigidly fixed cross-linguistically. Malagasy thus obviously presents a problem for the universality of Cinque's theory. In terms of the pre-verbal scrambled orders, perhaps the unexpected combinations are simply the result of one adverb being located in the Spec of the other to form a constituent, as Cinque explains the unexpected orders he encounters in Romance. One would expect that, if this were true, the two adverbs could not be separated and would have some sort of constituent meaning.

In the unexpected Malagasy cases, however, both adverbs take sentential scope. In this, they clearly have not simply moved to each other's Specs to form a constituent.

³ Although Cinque does not discuss Speech Act adverbs, they are usually determined to be high up in the tree in most structures, and so this is where I assume Cinque would also place them. He also classes 'at all' with 'not', which clearly is not possible in Malagasy, since they co-occur. I assume 'at-all' to be higher than 'anymore' because this is the order Cinque effectively gives them by classing them with the other adverbs which do have this order.

- (44) Efa tsy nanana inona na inona izy tamin'izany andro izany.
 already Neg pst-have “nothing” 3p “once upon a time”
 ‘At the time, he already did not have anything.’
- (45) Tsy efa nanana inona na inona izy ve tamin'izany andro izany.
 ‘At the time, did he not already have anything?’

In these sentences, the different orders correspond to different meanings. *Efa tsy* means something like ‘it has already happened to a person that they did not have any money in their pocket for a time’. In contrast to this meaning, if one person gave another money and the second person returned soon after to ask for more, the first person, disbelieving, would ask, ‘You did not already have some this morning?’, using *tsy efa*.

A similar contrast obtains with *mbola* and *tsy*.

- (46) Tsy mbola ny tokony ha tao rehefa misy ny olana.
 Neg still “what one should do” when exist det. problem
 ‘When there are problems, he does not yet know what to do.’
- (47) Mbola tsy ny tokony ha tao rehefa misy ny olana.
 ‘When there is a problem, he still does not know what to do.’

Tsy mbola corresponds to ‘not yet’, while *mbola tsy* means ‘still not’. The first would be used to discuss something which has not yet happened, but which is expected eventually to occur. The second would be used to describe something that has not yet happened, and may or may not ever occur.⁴

The different pre-verbal orders that occur among sentential-scope adverbs thus all include the negative *tsy*, which indicates that the variations in order are in some way connected to the NegP which contains *tsy*. Perhaps *tsy* is exempt from the adverb hierarchy and can appear in any position, or perhaps it is head-adjoined to other heads in any position. Allowing *tsy* to insert itself in any position, however, would remove much of the restrictiveness of Cinque’s hierarchical theory, which is an undesirable result.

Free-insertion or adjunction of *tsy* also implies that other adverbs may be exempt from hierarchy location restrictions and able to insert themselves in unrestricted locations. To keep other adverbs from taking any random order, insertion location restrictions would have to be lexically specified as occurring pre- or post- verbally. In this case, there would be no syntactic account for the fixed orders that do exist. It would definitely be more desirable to treat all of the AdvPs similarly, leaving them in some fixed order as a result of their base location.

The different *tsy* orders are best explained by the presence of two NegPs in Malagasy, one before *efa* and one after *mbola*. Because both orders of adverb and negation have sentential scope, the presence in the tree of two separate locations for negation is logical. Rather than trying to move the adverbs into each other’s Specs and then having to account for their ability to maintain scope over the entire sentence from an embedded position, if the basic order of adverbs is *tsy > efa > mbola > tsy*, most of the word order facts fall out correctly.

⁴ It is important to note that *efa* and *mbola* do not display variable orders with respect to each other. They do not really co-occur, having somewhat conflicting meanings (?? ‘already still’), but can do so in some cases. Here, however, they have a different meaning from the regular sentential-scope *efa* and *mbola*, functioning more as a constituent with *no* and the second *mbola* (*mbola...no mbola*).

(i) Efa mbola tsy mahay lesona Rakoto no mbola mitabata.
 already still Neg know lesson Rakoto Emph. still talkative
 ‘Not only does he not know his lessons, but Rakoto is talkative too.’

The existence of two separate NegPs has also been proposed for other languages. Cinque mentions it in his forthcoming work as a solution to a puzzling French word order. *Pas* and *guère* do not occur in the same position, as is evident in the following examples (*plus* follows *pas*).

- (48) a. Je ne pourrai (*guère) plus (guère) venir.
'I could not come anymore (much).'
- b. Il n'a (*guère) toujours (guère) accepté.
'He has not always accepted (much).'
- c. Il n'a (?guère) complètement (*guère) perdu la tête.
'He has not (much) completely lost his mind.'
- d. Il n'a (?guère) tout (guère) mangé.
'He has not (much) eaten everything.'

He states,

Guère does not appear to occupy the same position as *pas*. It follows *plus* and *toujours*, while preceding *complètement* and *tout*...A lexical infinitive can precede *guère*...but not *pas*. *Guère* would seem to be the negative counterpart of quantity adverbs like *beaucoup*, *peu*, *trop*, etc., but...it does not appear in the same position. While the latter are found between the passive and the lexical past participle (*Ce livre a été beaucoup/peu lu l'année dernière* 'This book has been much/little read last year'), *guère* has to precede both (*ce livre n'a guère été lu l'année dernière* 'This book has not been read last year')...All this suggests the presence of a second NegP, lower than that hosting *pas/mica*.

Although the adverbs discussed by Cinque are different from the pre-verbal *tsy* in question here, the possibility of two or more NegPs in a sentence is plainly supported, and the different positions of the two *tsys* (before and after *efa* and *mbola*) are similar to the location differences of *plus* and *guère*.

Further support for this proposal comes from Ouhalla (1990) (also Laka (1990)), who argues that languages can behave either like English and have the order AgrP> TP> AspP> NegP> VP, or like French with the order AgrP> NegP> TP> AspP> VP. It is a logical extension from this proposal of two choices of location for NegP to simply allow two NegPs - one in each of these two positions - to be present in the same language, which is the case in Malagasy.

5.2 Post-Verbal

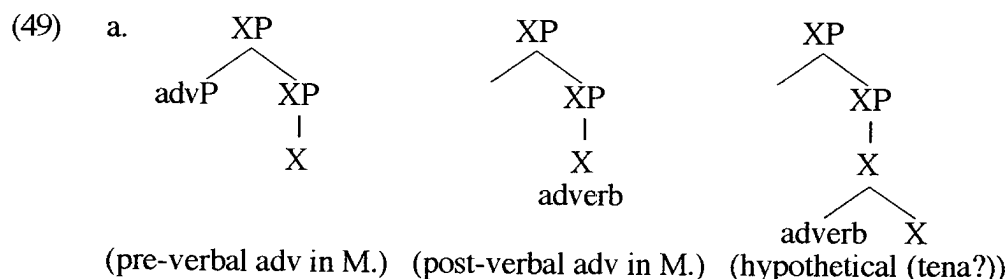
The main questions that arise from the order of post-verbal adverbs concern the position and definiteness of the object and the fact that the word order in Malagasy is very different from Cinque's predicted one. In addition to this, although one is preferred over the others, post-verbal adverbs can appear in several different orders - also a deviation from Cinque's system.

One account for the difference among languages would be the existence of a parameter which sets the order of adverbs in a language at one of two values. In this case, the Romance languages examined by Cinque would have the order he discusses, while a language such as Malagasy could have a different order, as set by the parameter (e.g. well> completely> always, etc.). A similar proposal has also been discussed with regard to the order of functional phrases in different languages (see especially Ouhalla 1990), and so could be plausibly argued from some position for adverbs as well. If,

however, parametrization of orders can be avoided, this is to be preferred because it retains the restrictiveness of Cinque's system. If, instead of a parameter, the surface order results from movement of the adverbs out of Cinque's base order (where they are underlyingly), the system remains restricted and the differences of order are explained. The next section discusses these possibilities.

6. Structure⁵

In a syntactic structure there are three places in which adverbs can be generated. They can be in the Specs of categories, as Cinque argues. They can alternatively be generated as the heads of phrases, or they can be heads which are base-generated adjoined to other heads. These three options are demonstrated in (49).



In the structure which I will eventually use to account for the word order facts of Malagasy, some different forms of these options are necessary. The different behaviour of pre- and post-verbal adverbs is captured structurally in the tree because one type is head of its own phrase and the other is located in the Spec of a functional phrase.

The center-embedding tree that I propose here to account for the adverb order facts of Malagasy requires much movement in order to satisfy both Kayne and Cinque. In it, the underlying order of Cinque's adverb categories is preserved, as are Kayne's right-branching and SVO requirements, and the 'onion skin' movement of adverb phrases creates the surface order of adverbs.

This tree has the advantage of allowing one half of a framing pair to select the other half through a head-head relation, which is the usual relation involved in selection, which is exemplified as 'the relation of a verb to (the head of) its Noun Phrase complement' (Chomsky 1993). In this case it is, similarly, the relation of a framing element to the head of its framing partner complement.

The 'onion-skin' tree is relatively restrictive in the orders and movement it predicts, but does have a problem with explaining why the movement that occurs should do so. At first, there also appear to be extraction violations and problems with Relativized Minimality. While some of these problems can be explained, others must be treated as inherent in the Kayne framework, where movement must often occur without strong motivation.

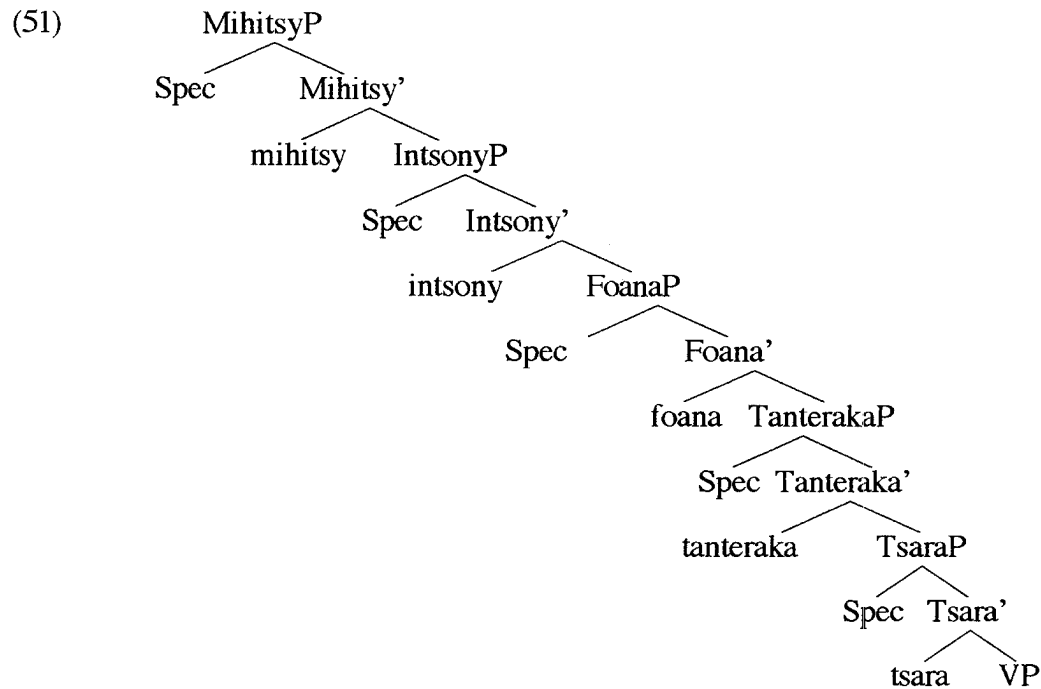
6.1 *Translating Cinque*

Following Cinque's proposal, Malagasy would look underlyingly like Italian, which we will see runs into problems. Even if the verb could head-move up to the approximate

⁵ Most of the trees that have been proposed to account for Malagasy word order do not easily allow a translation of Cinque's theory into their structure. Many of the trees currently used to account for Malagasy (e.g. Guilfoyle, Hung, and Travis (1992), MacLaughlin (1995)) are invalid in terms of Kayne (1994) because of their reliance on left-branching nodes and sometimes on category adjunction. Some (e.g. Pensalfini 1995) follow a Kayne framework, but most do not, attempting instead to account for subject position and binding effects with different branching directions.

heads rather than in Specs actually may not be completely against Cinque, since he does allow that a given language may be able to choose whether its adverbs are in heads or in Specs. Malagasy appears to have both types.

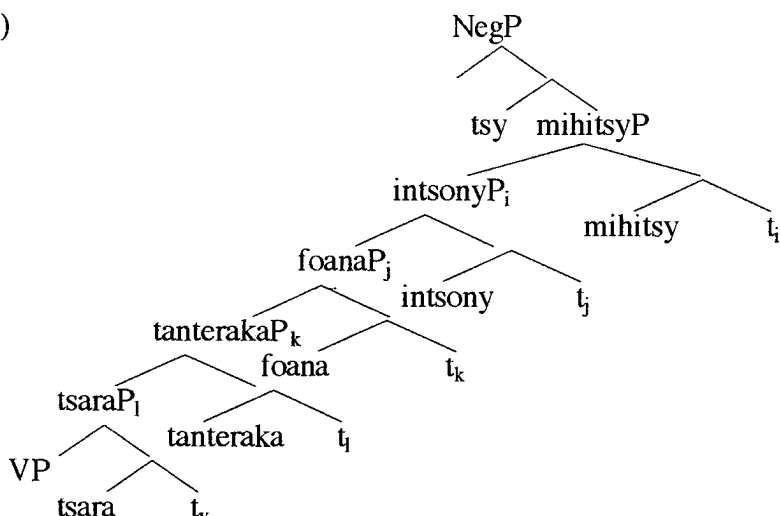
Making this head adjustment, the underlying tree (relevant portion only) is in (51).



The first move is TsaraP raising to the Spec of TanterakaP, which then raises to the Spec of FoanaP, which in turn raises to the Spec of IntsonyP, which finally raises to the Spec of MihitsyP, as in (52)⁶.

⁶ To get the possible variant order *tanteraka* > *tsara*, VP would move up to [Spec, TanterakaP], rather than to [Spec, TsaraP], and TanterakaP would then raise as usual, leaving TsaraP below. This may create a violation of cyclicity, since the object would have to raise and the VP would have to raise from below it to above it. Because of the nature of the object's insertion, however, the process may somehow be permissible. In addition to this, it seems it is another manifestation of the difficulty of having principled movement in Kayne's system, and so the problem does not have an easy solution here.

(52)



‘Tsy manasa tsara tanteraka foana intsony ny lamba mihitsy Rakoto.’
 3 > VP > 10 > 9 > 8 > 7 > 6 >

This explains the order of the adverbs at least. If pre-verbal adverbs are still in the Specs of FPs, center-embedding of adverbs must stop at the last available [Spec,AdvP], being blocked by *tsy* in [Spec,NegP] from raising any further. The post-verbal reversal of Cinque’s order in Malagasy thus results from this leapfrog movement, which is possible because of the different composition of pre- and post-verbal adverbs in Malagasy. The two groups behave differently and one reverses its order due to the different location of the adverbs in the phrase.

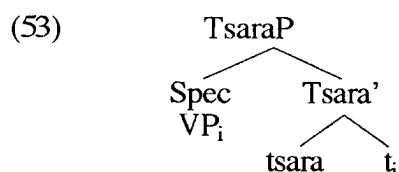
The most serious problem with this account of movement is its lack of motivation. Why should the AdvPs always raise above each other in such a complicated manner? Again, the motivation for this movement is part of the basic problem of Kayne’s restrictions. Perhaps their movement is motivated by a need for the heads of the phrases to check features with one another in a Spec-head configuration. If this is indeed the case, however, then the need to check is somewhat irregular, since the orders given here can sometimes be overridden and reversed. A checking requirement would mean that the FPs raise in a certain way for a certain reason most of the time, but are not required to do so in all grammatical sentences. For the present, I again leave the problem of motivating necessary movement to Kayne, suggesting only that is related to the type of checking relation required in Malagasy.

6.4 The Verb Phrase

Now that the adverbs have the correct order, the problem is where the verb must move to gain its surface position⁷. To get the surface word order in the present tree, the VP has to move to [Spec,TsaraP], which in turn raises as in (52).

VP movement is demonstrated in (53).

⁷ The verb’s location in the sentence cannot be the result of head-movement through the adverb heads because the object can raise with it. If head-movement were taking place, the only way the object could raise with the verb would be if NP incorporation had taken place. Object incorporation, however, has not occurred in Malagasy, because the object adjacent to the verb (before adverbs) may be a conjunction, which is not allowed to incorporate into a head.



6.5 The Object

Object location and definiteness are accounted for in this system by the position of Agr_oP. Objects optionally overtly move out of the VP to Agr_oP, or they remain in the VP and raise to Agr_oP at LF. If the object is definite, it raises overtly to [Spec, Agr_oP], and if it is indefinite, it stays in the VP, which is compatible with research on Germanic languages (Diesing (1992) and Duffield (1995)) in which the definiteness of an NP is related to its location in or out of the VP.

Why is this best described as AgrP? The position is unlikely to be vP because that shouldn't have variable placement, since it is part of verbal phrase shells. It could be named something other than AgrP, but it would still be an empty functional category for the object to raise into. A question arises, however, which is: why is this movement only in some sentences? Is it a stylistic choice that allows violation of procrastinate, since we have seen that the object can also stay in VP and remain indefinite? There is a potential answer to this in recent research, which indicates object shift/raising out of VP 'depends on information structure, in particular something like the contrast between specific and non-specific' information, and 'AgrO-P has to do with the mapping from syntax to semantics, and nothing to do with case' (Bobaljik & Thrainsson (1997), Diesing (1996)).

The AgrP to which the object raises in Malagasy appears to have no fixed location, as demonstrated in the Malagasy data, where it may occur both before and after the same adverb (in separate sentences), which does not have a constant position.

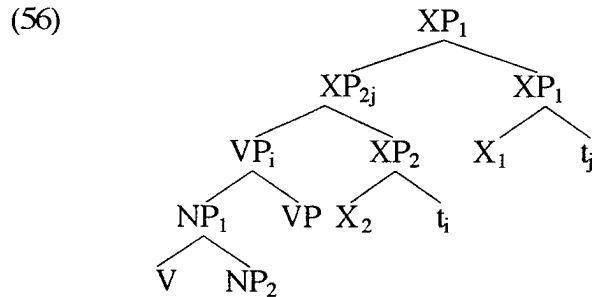
- (54) a. Tsy manasa **lamba** intsony Rakoto.
 b. Tsy manasa intsony **ny lamba** mihitsy Rakoto.
 'Rakoto does not wash clothes anymore.'
 c. Tsy manasa intsony mihitsy **ny lamba** Rakoto.
 'Rakoto does not wash clothes at all anymore.'
- (55) a. Tsy manasa foana **ny lamba** Rakoto.
 b. Tsy manasa **lamba** foana Rakoto.
 'Rakoto does not always wash clothes.'
 c. Tsy manasa foana **ny lamba** intsony Rakoto.
 'Rakoto does not always wash clothes anymore.'
 d. Tsy manasa foana **ny lamba** mihitsy Rakoto.
 'Rakoto does not always wash clothes at all.'

Agr_oP, rather than consistently occupying one set position, may be inserted anywhere between the lowest NegP to VP, which is what causes the appearance of the object between any of the post-verbal AdvPs. Because they are constant in their positions as heads of AdvPs, the object must be the element whose position changes to create the different word orders.

This system makes use of one of the two possible alternatives to solving Kayne's need for empty landing sites. I discussed earlier the necessity in Kayne's framework for either a huge number of empty phrases that are available as landing sites for movement,

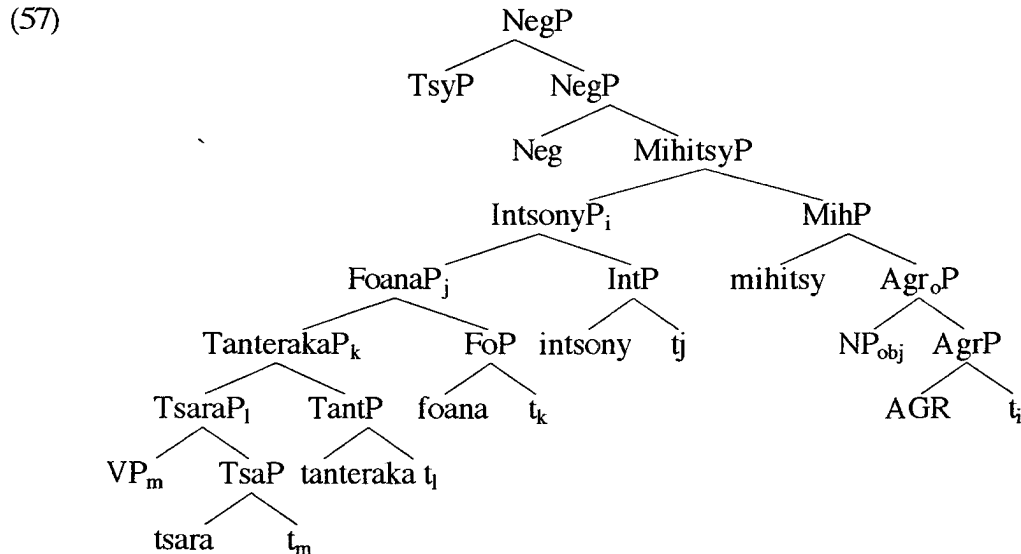
or a mechanism by which empty phrases can be inserted into the syntax in certain positions or ranges of positions. This analysis makes use of the second option, with Agr_oP being inserted in the location where it is needed for the object to move into it, which shows that this is one useful solution to Kayne's cross-linguistic need for empty categories. The idea of building a tree through insertion of categories for the sake of movement when it occurs is at least partially supported by the formulation of Bare Phrase Structure adopted by Chomsky as part of the Minimalist Program (Chomsky 1995).

Object movement may appear at first to violate an important theoretical restriction. If it raises out of the VP after the VP has raised, it is being extracted from a restricted domain (movement into or out of a Spec of a Spec should be blocked), and so this raising should be ungrammatical. This problem has an easy solution in Kayne's framework, where the Spec is actually an adjunction position, as in a structure such as (56).



Here, NP_2 is not actually dominated by anything except the immediate VP, according to Barriers theory (Chomsky 1986), since it is not dominated by all segments of the other categories. If the NP is extracted from this position, the higher XPs will not be barriers, since a barrier must fully dominate a category. In the Malagasy tree, therefore, the object may be extracted at any point in the derivation without crossing too many barriers to cause ungrammaticality.

Object movement and Agr_oP insertion are demonstrated in (57).



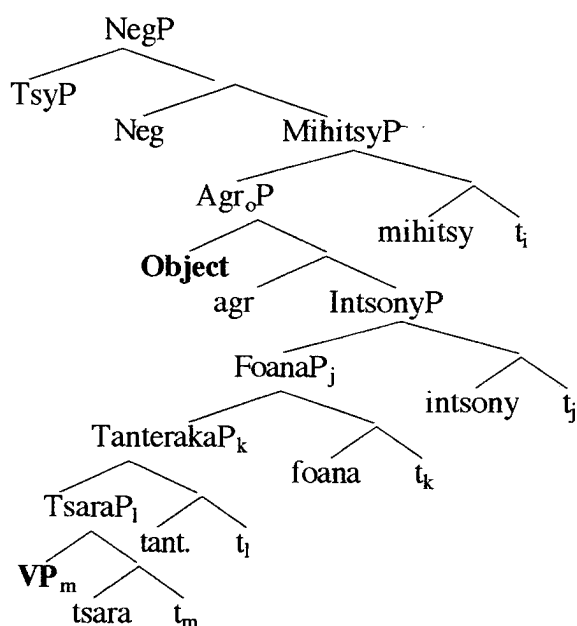
3 > VP > 10 > 9 > 8 > 7 > 6 > NP_{obj}

'Tsy manasa tsara tanteraka foana intsony ny lamba mihitsy Rakoto.'

This insertion and discussion of Agr_oP s has important implications for the theory of functional categories in general. Once Agr_oP has been inserted into the tree and the

object has raised to it, it must become invisible to movement in order to allow only grammatical word orders to surface. If, instead of forcing the AdvP below it to raise, the AdvP were to raise itself to the next-highest Spec, an impossible order would result, with the object before the verb.

(58) **



‘*Tsy lamba manasa tsara tanteraka foana intsony mihitsy Rakoto.’

To avoid this ungrammatical occurrence, there must be a restriction in the grammar such that non-content-full phrases like AgrP (which have no lexical content and are simply markers of agreement) are invisible to movement and cannot move themselves. In contrast to this, content-full phrases like AdvPs can and, in this case must, move, which may be attributable to the phrases being differently specified (some sort of A or A' or Adverb positions), and thus being irrelevant to each other's movement operations.

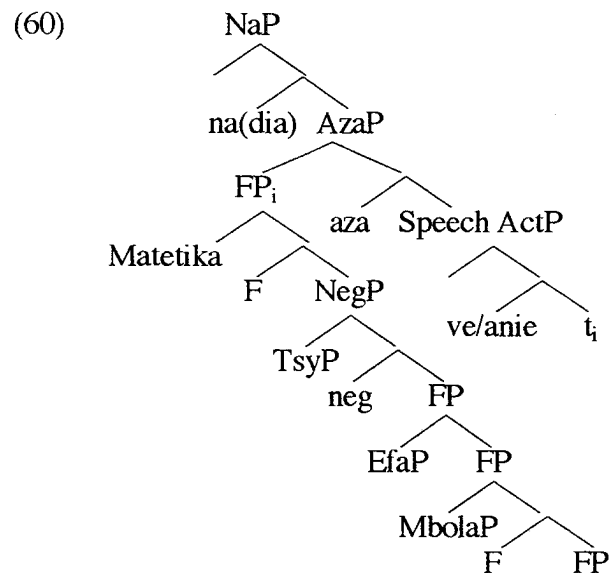
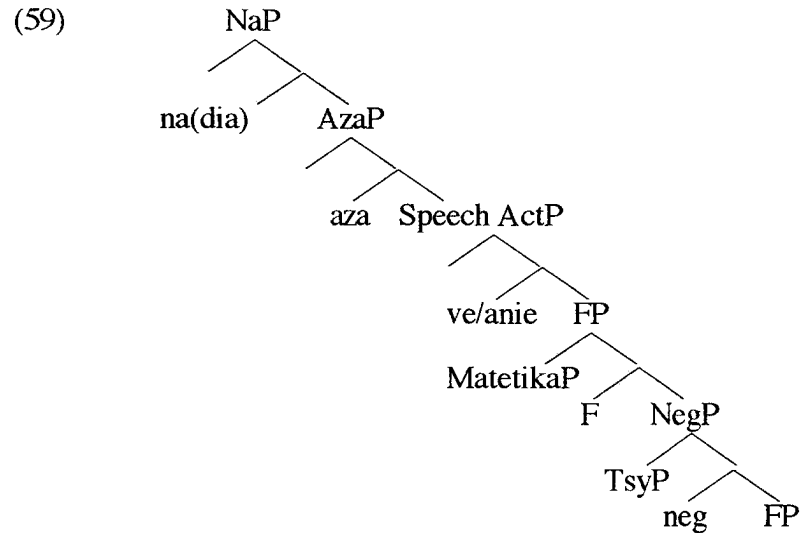
A possible reason for the forced raising of AdvPs past AgrP may have to do with the requirement to check features in a Spec-head relation. Because AgrPs are non-content-full, they do not have features which need to be checked with the AdvPs, but the lower AdvPs still must be checked, and so are always forced to raise around the AgrPs, consistently leaving them in their place. This would explain why lower AdvPs always raise to the next-highest Spec, and why the appearance of AgrP does not interrupt this process, simply leaving the AgrP where it first appears.

The issue of the existence of non-content-full categories is interesting for further exploration in more varied contexts, and may have implications for Chomsky's view of the (non)necessity of non-content-full categories like AgrPs, but is left here as a beginning point for future research.

6.6 Matetika

The “normal” occurrences of *matetika* at the beginning of the adverb string and after the subject remain constant in position. The invariantly ordered elements ‘*aza*> speech act> subject’ also have consistent positions which can simultaneously be explained by *matetika* movement. To obtain their surface order, MatetikaP must raise up to [Spec,

AzaP], which places it directly after *na(dia)* and also creates the order of the rest of the constant elements.⁸



For the sentences with *matetika* at the very end, the category below MatetikaP raises up to the same position ([Spec,AzaP]), leaving *matetika* below. Thus, the two different word orders come from the same underlying position - a desired result, since in both places *matetika* has the same meaning.

⁸ In contrast, I propose that the post-verbal version of *matetika* is a different, flexible *matetika* which can insert its phrase in a range of locations. The key point to make is that, rather than being the same MatetikaP that appears sentence-initially and -finally, the post-verbal occurrence of *matetika* is a different version of the adverb, which is supported by the different connotations this adverb carries when it occurs in this position.

6.7 *The Subject*

The subject must always raise overtly out of the VP to [Spec, Agr_sP] in order to obtain the final order of elements. [Spec, Agr_sP] could either be like Agr_oP, inserting in a certain place (i.e. above MatetikaP and below Speech ActP), in which case the subject would have to raise out of the VP up to [Spec, Agr_sP] (to check its agreement features).⁹ Alternatively, it could be different from Agr_oP and have a set location in the tree that is base-generated as such, rather than being inserted only when the subject needs to raise.

The second option has the advantage of explaining the invariant position of the subject in the sentence. It does not have the freedom of inserting its AgrP in several different places (as the object does), so the subject always appears in the same position (last). This choice is not optimal, however, because it requires that Agr_sP and Agr_oP behave very differently in terms of generation, which seems strange since they are similar categories with similar functions. To keep object and subject agreement more constant, therefore, it is preferable to have Agr_sP insert itself in the tree like Agr_oP does (as long as it maintains the additional restriction of inserting in only one position rather than several). It is also invisible to movement like Agr_oP, since it is similarly non-content-full.

When the subject raises directly to [Spec, AgrP], it does so over several intervening Specs, which should be ruled out by Relativized Minimality. These Specs, however, contain AdvPs which appear to be invisible to operations that involve different types of elements. The subject is raising to an A-position, while the adverb Specs may be either A' positions, or even a third type of position - an Adverb position - which makes them invisible to movement of other types according to Relativized Minimality. If the Specs of AdvPs are A' positions, or some third kind of invisible category, then the subject cannot raise to them on its way to an A position, [Spec, AgrP], and is in fact blind to them so that raising over these positions causes no violation of Relativized Minimality. This explains the grammaticality of the subject skipping over supposed potential landing sites in its movement from [Spec, VP] to [Spec, Agr_sP].

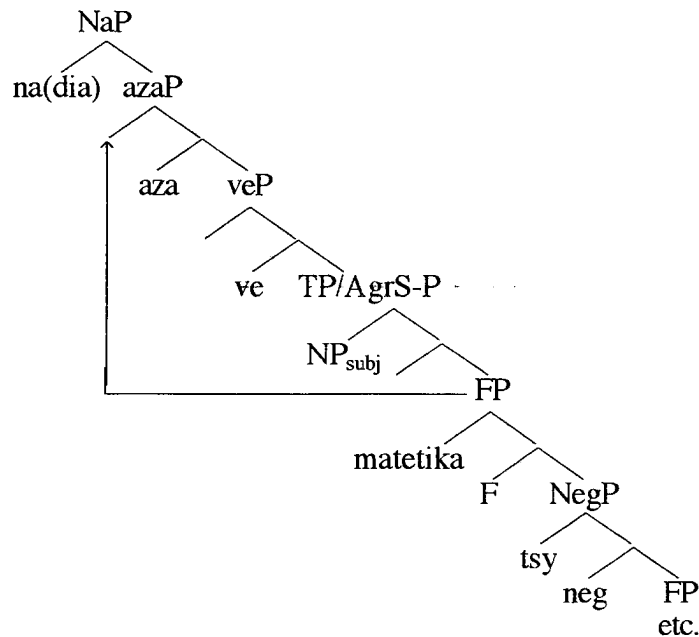
The phenomenon of adverb invisibility to other types of raising has been argued previously for Malagasy in Pensalfini (1995), who places 'particles' (adverbs here) in an A' position ([Spec, MoodP]) to explain the grammaticality of sentences in which elements have raised across Spec positions. A similar account is also proposed for Basque in Laka (1990).

Like the object, the subject may raise out of the VP at any point in the derivation, because, during VP and adverb movement, it is never dominated by a category that could serve as a barrier. Also like the object, once the subject inserts its AgrP and raises to it, that phrase is invisible to movement, and so forces the category below it to move instead. This similarity of behaviour with respect to AgrPs lends further support to the idea that non-content-full categories are irrelevant to operations of content-full categories like AdvPs.

Subject raising is shown in (61) and (62).

⁹ This alternative is attractive because the Spec of the Speech Act category is sometimes argued elsewhere to be filled by an empty Operator, which would prevent the subject from raising any higher through the Specs, being blocked by an element already there. This explains why it stops and inserts Agr_sP where it does - it cannot raise any further.

(61)



2 > 3 > 4 > 5 > 3 > // aza > 1 > NP_{subj}

6.8 Tena

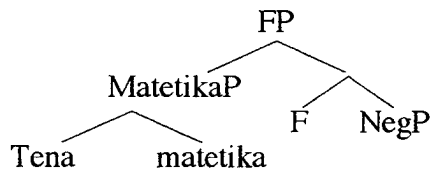
Tena is the intensifier that appears between other adverbs. Unlike *tsy* (another pre-verbal adverb with different orders), which behaves similarly to other adverbs and has several position restrictions, *tena* can appear between any of them and intensifies whatever is adjacent to it. *Tena* is located in the Specs of pre-verbal adverbs are AdvPs which are AdvPs in Specs, with Specs of their own (as according to Cinque). *Tena* only occurs with the pre-verbal adverbs (which have Specs available), not with the post-verbal adverbs in a sentence, which may be attributable to their status as heads of categories in the tree, causing them to have different behaviour in terms of which Specs are open. This discussion is necessarily vague, but there definitely is a split between pre- and post-verbal adverbs in terms of which can occur with *tena*, and this suggestion of a solution at least begins to account for the difference. *Tena* can only appear in these sentences in Specs of pre-verbal adverbs.

- (63) a. **Tsy tena mbola** mahay mandihay Rakoto.
 'Rakoto still really does not know how to dance.'

b. * Manasa lamba **tena tsara** Rakoto.

The following structure demonstrates *tena*'s position.

(64)



7. Conclusion

This paper has been an exercise in synthesis, attempting to combine Cinque's Adverb Theory and Kayne's Antisymmetry of Syntax Theory in Malagasy. For the most part, the synthesis is successful - Cinque can hold in Malagasy, as can Kayne, and each theory is developed and focused as its interaction with Malagasy is examined. Some modifications of Cinque's theory are necessary to account for Malagasy, but the general theory is supported.

The universal order of adverbs is preserved in the structure presented here, and the surface discrepancies (with Cinque's order) are shown to be due to movement out of base position. Cinque's theory must be modified slightly to allow adverbs to be heads of their own categories, rather than always being located in the Specs of Functional Categories, but this is a minor change, as he has elsewhere mentioned this possibility for certain languages.

Kayne's theory also holds in this exercise, and it is, indeed, an asset to explanation. The status of each Spec as an adjunction allows the necessary movement of elements out of embedded positions, resulting in a correct prediction of grammatical and ungrammatical orders in Malagasy. The Kayne-type tree requires a great deal of movement to obtain the surface order of elements, but the surface order is at least possible, as long as certain categories are able to be inserted to serve as landing sites for movement (or alternatively are always present in a large string of empty categories). Insertion of categories is an attractive solution to Kayne's need for landing sites, and this paper helps produce positive evidence for this theory.

The data and processes presented here indicate an underlying structure which relies on AgrP insertion to create surface word order. This process has interesting implications for the existence of non-content-full categories, which have been argued not to exist. Malagasy, however, must have these categories insert in order to explain the grammaticality of certain structures. Alternative explanations, such as moving to another Spec, do not predict the same grammatical results and are therefore inadequate.

The structure presented here explains the variant behaviour of the pre- and post-verbal adverbs, as well as the position of subject, Speech Act adverbs, and *matetika*. The framing pair *na (dia)...aza* is also explained through a head-head selection mechanism and subsequent movement of elements. In addition, the tree is restrictive in its predictions of grammatical and ungrammatical word orders - another desirable characteristic of structures.

The synthesis of these theories with Malagasy word order is generally successful. This paper has raised several theoretical possibilities, which may be further developed in the future in more cross-linguistic research.

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Rightward Object Shift and the Syntax of Adverbs*

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0. Introduction

The Linear Correspondence Axiom (or LCA) proposed by Kayne (1994) provides a conceptually simple mapping from the hierarchical structure of LF derivations to the linear structure of PF derivations. Cast in Minimalist terms (Chomsky 1995), the LCA states roughly that the linear order of PF elements is determined by the relation of asymmetric c-command on the corresponding LF elements at Spell-Out: That is, if an LF element *X* asymmetrically c-commands an LF element *Y* at Spell-Out, then any PF element *a* which is the image of *X* will precede any element *b* which is the image of *Y*.

By adopting the LCA, together with a handful of other assumptions, Kayne is able to derive a rather restrictive phrase structure which includes the following features:

- (1) a. There is no directionality parameter. Specifiers precede heads and complements in all languages (where specifiers are really a case of adjunction to XP).
- b. All adjunction is to the left. Right-adjunction to X^0 or XP is disallowed.
- c. Multiple adjunction to a single X^0 /XP is disallowed.

If we assume that movement must always be to a specifier or adjunct position, and if we assume that a moved element must asymmetrically c-command its trace, then it follows from (1a-b) that *all movement is to the left*. Rightward movement is predicted not to exist.

However, Malagasy presents an apparent counterexample to this prediction, in the domain of object scrambling: Comparing (2a-b) below, we see that whereas non-specific direct objects occur right-adjacent to the verb, preceding manner adverbs, specific direct objects appear to scramble rightward to a position following manner adverbs. (Non-specific noun phrases in Malagasy are distinguished from specific noun phrases by the presence or absence of an overt determiner):¹

- (2) a. Nijinja **vary** an-tsirambina ny mpamboly
 Pst-cut:NT rice carelessly Det farmer
 “The farmer harvested rice carelessly”
- b. Nijinja an-tsirambina **ny** **vary** ny mpamboly
 Pst-cut:NT carelessly Det rice Det farmer
 “The farmer harvested the rice carelessly”

Descriptively, I will refer to the phenomenon in (2) as *rightward object shift*. Note that in this regard, verb-initial Malagasy appears to be the mirror image of verb-final scrambling languages like Dutch and Turkish, which exhibit leftward object shift: As the examples in (3) show, non-specific direct objects in Turkish appear left-adjacent to the verb, following

* This paper has been reworked and revised several times over the past year. An earlier (and very different) version was circulated as Pearson (1997b). Many thanks to Marcel den Dikken, whose comments led to several improvements in my original proposal. Thanks also to Ed Keenan, and to the participants at AFLA IV (UCLA, April 1997), where this material was first presented. Thanks as well as to Noro Ramahatafandry and Saholy Hanitriniaina, for providing some of the Malagasy data used in this paper. All errors and oversights are my own.

¹ Abbreviations used in the examples: Acc = accusative, Det = determiner, Inf = infinitive, Neg = negation, Obl = oblique, Pst = past tense, NT = Nominative-Topic voice (or pivot) form.

manner adverbs, whereas specific direct objects scramble leftward to a position preceding manner adverbs. (Here, non-specific objects are distinguished from specific objects by the presence or absence of accusative case marking):²

- (3) a. Ali hemen **bir piyano** kiralamak istiyor
 Ali immediately one piano rent-Inf wants
 “Ali wants to rent a piano immediately” (any piano will do)
- b. Ali **bir piyano-yu** hemen kiralamak istiyor
 Ali one piano-Acc immediately rent-Inf wants
 “Ali wants to rent a (specific) piano immediately”

In this paper, I offer an account of rightward object shift which is compatible with Kayne’s LCA. Rather than analysing the paradigm in (2) in terms of rightward movement, I claim that the displacement of the specific object is the result of *leftward* movement of the object to a licensing position associated with specificity (which I dub the *Inner Topic* position), followed by leftward movement of a remnant constituent (containing the verb, the adverb, and the trace of the object) to a second licensing position above the Inner Topic position.

In order to flesh out this analysis, I must also say something about the syntax of adverbial elements in Malagasy. I will argue that each of the different classes of adverbs is generated in the specifier of some predicate head X^0 (cf. Cinque 1997). For instance, manner adverbs appear in the specifier of the head Man^0 . Each predicate head takes as its complement some YP, an extended projection of the verb (where the type of YP determines the scope of the adverb). After merger of the adverb with the projection headed by X^0 , this X^0 then raises to adjoin to a higher head F^0 , after which its complement YP raises to become the specifier of FP. The details of this derivation, together with the theoretical mechanisms which motivate it, will be discussed extensively in section 3 below.

Note that in this paper, I will follow a derivationalist approach to syntactic computation, along the lines of Chomsky’s Minimalist Program (1995). In particular, I will assume that phrase structures are built up from an array of lexical items (or *numeration*) by successive applications of Merge, and Move. I will also assume the *feature inheritance* theory argued for in Pearson (1998) (as discussed in section 3 below). This theory includes a phenomenon which I refer to as *categorical reanalysis*: A maximal projection XP, I argue, contains the categorial features of both its head and its specifier. Normally the features of the head will ‘block the expression of’ the features of the specifier. However, when the head raises to adjoin to another head, the features of the specifier become visible. (E.g., a VP will inherit both the [V] features of its head and the [D] features of a DP in its specifier. If the head V^0 subsequently raises out of the VP, then the [V] features of VP will be deleted, allowing the [D] features to become visible. When this happens, VP is ‘reanalysed’ as a higher projection of the DP).

The structure of this paper is as follows: In sections 1 and 2 I discuss the position and scopal properties of adverbial modifiers in Malagasy, and review a previous analysis (Rackowski 1998) which deals with these facts within a framework that assumes the LCA. In section 3 I present a somewhat different analysis, outlined above, which accommodates a broader range of data than Rackowski’s theory - including in particular phrasal adverbs and PPs.³ Then in section 4, I return again to the phenomenon of rightward object shift,

² The sentences in (3) are adapted from examples in Enç (1991). Thanks to Murat Kural (p.c.) for information on adverb placement in these sentences.

³ Here I will restrict my attention to adverbs and PPs, and leave aside the question of clausal modifiers, e.g. purpose clauses, *because* clauses, *when* clauses. These tend to be extraposed (or, in Kayne’s terms, stranded) to the right of the Topic.

and present a treatment of this in terms of leftward extraction and remnant movement. In section 5, I summarise my conclusions.

1. The position of adverbial elements

Malagasy is a strict word order language, where clauses normally consist of a Predicate phrase followed by a clause-final Topic (see Keenan 1976, 1994; Pearson 1997a; Pensalfini 1995 for details). Most kinds of adverbial elements - including manner adverbs and locative PPs - occur within the ‘core’ of the Predicate phrase; after the verb and before the Topic, as illustrated by the sentences in (4):

- (4) a. Mitendry valiha **tsara** ny rahalahiko
 play:NT valiha good/well Det brother-1s
 “My brother plays the valiha (a musical instrument) well”
- b. Mitendry valiha **any an-tokotany** ny rahalahiko
 play:NT valiha there Obl-garden Det brother-1s
 “My brother is playing the valiha in the garden”
- c. Mitendry valiha **foana** ny rahalahiko
 play:NT valiha always Det brother-1s
 “My brother always plays the valiha”

A handful of Predicate-level adverbs, such as *efa* “already”, occur before the verb, as shown in (5), while other elements, such as *angamba* “probably” may occur either before or after the verb, as shown in (6). Clause-level adverbs, like *omaly* “yesterday”, occur outside the Predicate phrase, usually after the Topic, as in (7). While the syntax of these elements remains to be explored, I will ignore them for the most part in this paper, and concentrate instead on Predicate-internal postverbal modifiers of the type shown in (4).

- (5) **Efa** namaky ny boky ny mpianatra
 already Pst-read:NT Det book Det student
 “The student has already read the book”
- (6) a. Maty **angamba** ny vadiny
 died probably Det spouse-3s
 “His wife probably died”
- b. **Angamba** maty ny vadiny
 probably died Det spouse-3s
 “His wife probably died”
- (7) Namaky ny boky ny mpianatra **omaly**
 Pst-read:NT Det book Det student yesterday
 “The student read the book yesterday”

Predicate-internal modifiers obligatorily precede - and scope under - the yes/no question particle *ve*, which marks the rightmost edge of the Predicate phrase (as argued in Pearson 1997a). This is shown by the sentences in (8):

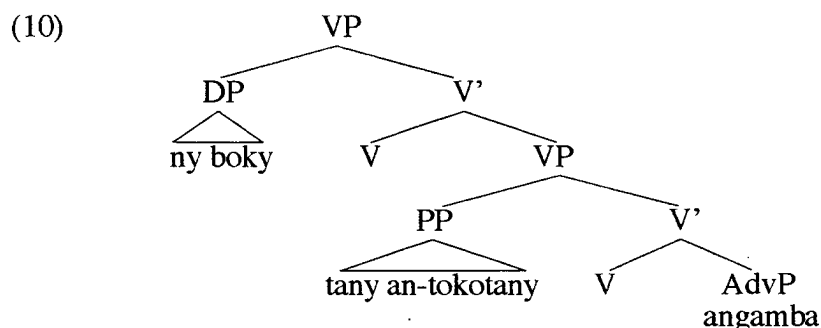
- (8) a. Mitendry valiha **tsara** ve ny rahalahinao?
 play:NT valiha good/well Qu Det brother-2s
 “Does your brother play the valiha well?”

- b. Namaky ny boky **angamba** ve Rabe?
 Pst-read:NT Det book probably Qu Rabe
 “Rabe a-t-il probablement lu le livre?” [consultant’s translation]
 “Rabe, is it the case that he probably read the book?”
- c. **Efa** namaky ny boky ve ny mpianatra?
 already Pst-read:NT Det book Qu Det student
 “Has the student already read the book?”

Traditionally, elements such as *tsara* “well” and *any an-tokotany* “in the garden” would be analysed as right-adjuncts to VP or IP. However, right-adjunction - along with multiple adjunction - is unavailable under Kayne’s (1994) theory, leading us to seek an alternative analysis.

One alternative would be to follow Larson (1988, footnote 49), who suggests that adverbs and non-argument PPs are generated in low positions within a layered VP structure. For instance, take the sentence in (9), which contains both a PP *tany an-tokotany* “in the garden” and an adverbial *angamba* “probably”. Following Larson, the VP in (9) would have the partial underlying structure given in (10), where the PP and the AdvP are generated in the specifier and complement positions of the lowest VP shell, below the base position of the direct object *ny boky* “the book”:

- (9) Namaky ny boky **tany an-tokotany angamba** i Koto
 Pst-read:NT Det book Pst-there Obl-garden probably Det Koto
 “Koto probably read the book in the garden”



However, though the structure in (10) conforms to Kayne’s LCA, it makes the wrong predictions about relative scope in Malagasy: Since PP asymmetrically c-commands AdvP from its base-position, we would expect the locative phrase to scope over the adverbial. Furthermore, since the direct object asymmetrically c-commands both PP and AdvP, we would expect it to have widest scope. In fact, the exact opposite is true: *Angamba* scopes over *tany an-tokotany*, which scopes over the direct object.

In general, while preverbal modifiers like those in (5b) and (6) scope rightwards, postverbal modifiers take scope over the subpart of the Predicate which occurs to their left. This is illustrated by the contrast in (11): In (11a), *tany an-tokotany* scopes under *angamba*, giving the reading “What Koto probably did is read the book in the garden”, while in (11b), *tany an-tokotany* scopes over *angamba*, giving the reading “What Koto did in the garden is probably read the book”.

- (11) a. Namaky ny boky **tany an-tokotany angamba** i Koto
 Pst-read:NT Det book Pst-there Obl-garden probably Det Koto
 “Koto probably read the book in the garden”

- b. Namaky ny boky **angamba tany an-tokotany** i Koto
 Pst-read:NT Det book probably Pst-there Obl-garden Det Koto
 “In the garden, Koto probably read the book”

Based on these scopal facts, I will reject a Larsonian approach, and consider instead analyses which derive the surface order of postverbal modifiers by means of movement.

2. The relative order of adverbs

Rackowski (1998) presents one such analysis, focussing on the behaviour of internally simplex adverbs such as *tsara* “well”, *foana* “always”, and *efa* “already”. Rackowski’s study draws heavily on the theory of adverbs advocated by Cinque (1997). Using data mainly from Romance, Cinque argues that adverbs fall into a number of distinct classes, and that the relative ordering of these classes follows a universal hierarchy across languages. For example, he shows that aspectual adverbs such as “already” precede NPI adverbs such as “any more”, which precede manner adverbials such as “well”. A partial hierarchy of adverb classes, with examples of each class from Italian, is given in (12):

- (12) 1 2 3 4 5 6
generalmente > *già* > *più* > *sempre* > *completamente* > *bene*
 generally already anymore always completely well

Based on evidence from verb movement, Cinque argues that adverbs are generated in the specifiers of functional projections located above VP and below the position of the tensed verb in Italian. Participles in Italian undergo movement through the heads of these projections, and may appear in a number of intermediate positions at Spell-Out.

In Malagasy, the facts are somewhat different: Adverbs of classes 1-2 normally precede the verb, while those of classes 3-6 follow the verb. As Rackowski demonstrates, the order of adverbs in Malagasy diverges from Cinque’s hierarchy in that those adverbs which follow the verb occur in the reverse order as compared with Italian.⁴ This order is shown in (13):

- (13) 1 2 6 5 4 3
matetika > *efa* > VERB > *tsara* > *tanteraka* > *foana* > *intsony*
 generally already well completely always anymore

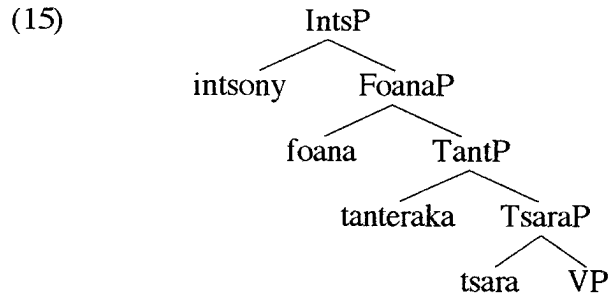
Examples of postverbal adverb order, taken from Rackowski, are given in (14):

- (14) a. Manasa lamba **tsara tanteraka** Rakoto
 wash:NT clothes well completely Rakoto
 “Rakoto completely washes clothes well”
 b. Manasa lamba **tanteraka foana** Rakoto
 wash:NT clothes completely always Rakoto
 “Rakoto always washes clothes completely”
 c. Manasa lamba **tsara foana** Rakoto
 wash:NT clothes well always Rakoto
 “Rakoto always washes clothes well”

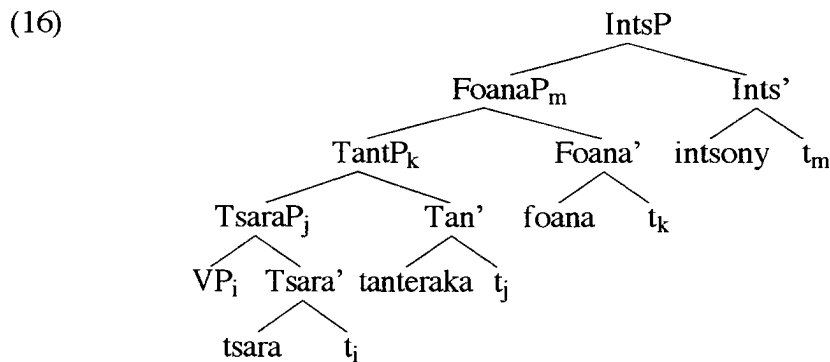
⁴ I return to this difference between Italian and Malagasy at the end of section 4.

- d. Tsy manasa lamba **tsara** **intsony** Rakoto
 Neg wash:NT clothes well any more Rakoto
 “Rakoto doesn’t wash clothes well any more”
- e. Tsy manasa lamba **foana** **intsony** Rakoto
 Neg wash:NT clothes always any more Rakoto
 “Rakoto doesn’t always wash clothes any more”

Rackowski argues that postverbal adverbs in Malagasy are generated as the heads of functional projections dominating VP - rather than as specifiers, as in Cinque. For instance, *tsara* “well” is taken to be the head of a projection (call it TsaraP) which selects VP as its complement. The underlying order of these projections, which conforms to the hierarchy in (12), is shown in (15) below:



Starting from the tree in (15), Rackowski derives the mirror-image surface order through successive XP movements. First VP raises to become the specifier of the phrase headed by the lowest adverb, after which that phrase raises to become the specifier of the next higher adverb phrase, and so on, resulting in the configuration in (16):



Rackowski’s analysis neatly predicts the order of adverbs in (13) without positing right-adjunction (in accordance with Kayne), while at the same time maintaining Cinque’s proposed universal hierarchy in (12). However, her approach has certain empirical limitations which need to be addressed.

In particular, Rackowski’s assumption that postverbal adverbs are heads is somewhat problematic. While this approach makes sense for those adverbs which are arguably monomorphemic (such as *foana* “always” and *tsara* “good, well”), it cannot easily be extended to other adverbial constituents which are clearly phrasal (locative PPs, for example). Phrasal modifiers are quite common in Malagasy. Even within the class of manner adverbs, Malagasy has complex expressions such as *an-tsirambina* “carelessly” (where the prefix *an-* is an oblique marker, perhaps of category P, which is also found in locative ex-

pressions such as *an-trano* “at home” and *any an-tokotany* “there in the garden”).⁵ Examples of *an-tsirambina*, which has the exact same distribution as simplex manner adverbs like *tsara*, are given in (17):

- (17) a. Manasa lamba **an-tsirambina** ny vehivavy
 wash:NT clothes carelessly Det woman
 “The woman washes clothes carelessly”
- b. Manasa lamba **an-tsirambina** **foana** ny vehivavy
 wash:NT clothes carelessly always Det woman
 “The woman always washes clothes carelessly”

Based on examples such as this, I will return to Cinque’s original claim that adverbs are generated in specifier positions, allowing for a unified treatment of monomorphemic and phrasal adverbials. Like Rackowski’s theory, the analysis which I present in the following section uses successive XP-movements to derive the order in (13), but the structures I propose are somewhat more complex.

3. Feature inheritance, movement, and postverbal adverbs

Before turning to my account of adverbs, let me briefly summarise the theory of feature inheritance and categorial reanalysis argued for in Pearson (1998). In that paper, I argued that when a head combines with its complement (an operation I refer to as *Selection*), the resulting category inherits just the features of the head; whereas when a specifier is concatenated with its target, or a head raises and adjoins to another head (an operation I call *Fusion*), the resulting category inherits the features of *both* input categories.

In the case of Fusion, then, merger results in the projection of a ‘mixed’ category. For example, when a DP specifier combines with a VP predicate, thereby ‘closing off’ that predicate, the result is an object which has all the features of the VP and the DP simultaneously.⁶ In order to preserve the notion of *headedness*, however, I stipulate that features of the target may ‘block the expression of’ the features of the specifier/adjunct in cases of mismatch. In particular, the *categorial* features of the target block the expression of the categorial features of the specifier/adjunct, rendering the latter invisible to the computational component (although crucially still present). See Pearson (1998) for details and applications of this theory.

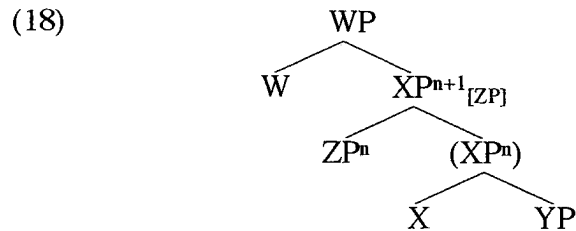
Categorial reanalysis involves the interaction of feature inheritance with head movement: When a head X^0 raises to adjoin to another head, I argue, all of the projected features of X are deleted from the projection out of which it raised, allowing any features which were blocked by features of X to become visible. For example, take the structure in (18) below: Here, the specifier ZP^n concatenates with a maximal projection, labelled XP^n , to form a new maximal projection, labelled XP^{n+1} .⁷ XP^{n+1} then combines with the head W to form WP . Note that since ZP^n and XP^n combined by means of Fusion, XP^{n+1} inherits the categorial features of Z , although these remain unexpressed since they are blocked by

⁵ Manner adverbs may also be formed with the preposition *amina* “with, at” – e.g. *amim-pitiavana* “with love, lovingly”, *amim-pantezerana* “angrily”. Note also idioms like *soa aman-tsara* “happily, fortunately”, which contains two predicate heads (*soa* “beautiful”, *tsara* “good, well”) conjoined by the element *amana* “with, together with”.

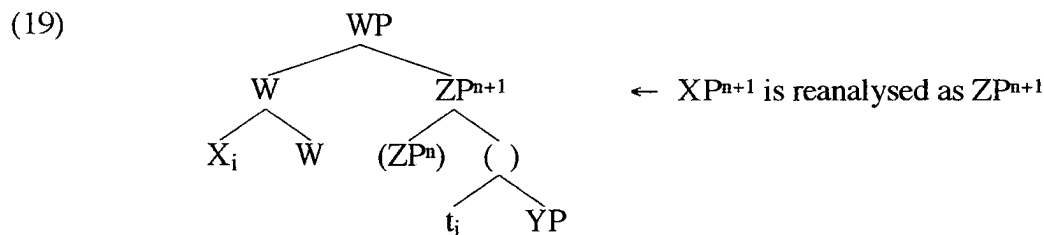
⁶ This may be thought of as a derivational analogue of ‘feature sharing’ between a specifier and its target, or ‘Spec-Head agreement’. (Cf. Moritz and Valois (1994), who argue for Spec-Head agreement of operator features as a way of avoiding the less constrained notion of ‘feature percolation’.)

⁷ Throughout this paper, I use parentheses around node labels to indicate non-maximal, non-minimal projections (which, according to Chomsky (1995), are invisible to the computational component).

the features of X , inherited from XP^n . In (18), I indicate the ‘recessive’ Z features of XP^{n+1} by means of a subscript $[ZP]$:



Suppose, however, that X^0 subsequently raises to adjoin to W^0 , as in (19). When this happens, the X features of XP^{n+1} are deleted, leaving the Z features of XP^{n+1} with nothing to block them. Since XP^{n+1} now retains only the categorial features of Z , it is reanalysed as a further projection of Z , labelled ZP^{n+1} in (19). Thus ZP , which began life as the specifier of the complement of W^0 , becomes the complement of the head-adjunction structure $[X^0+W^0]$ as a result of X^0 -raising.⁸ (Note also that ZP^n , which was originally the maximal projection of Z , becomes an intermediate projection of Z as a result of reanalysis.)⁹



With that background in place, I now return to the analysis of postverbal adverbs in Malagasy. Take as an example the sentence in (2a), repeated here as (20):

- (20) Nijinja vary an-tsirambina ny mpamboly
 Pst-cut:NT rice carelessly Det farmer
 “The farmer harvest the rice carelessly”

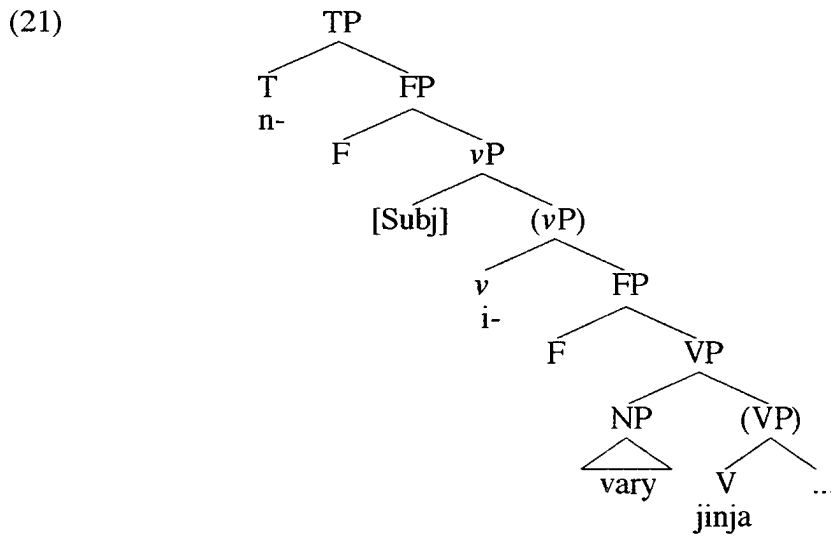
Consider first the structure of the verb *nijinja* “harvested”. This form consists of the root *jinja*, to which the verbal prefix *i-* and the past tense prefix *n-* have been added. I will assume here that *jinja* is generated in VP, where it assigns the Theme role to a noun phrase in its specifier.¹⁰ This root raises to form a unit with the prefix *i-*, which I tentatively analyse as I light verb in the head of vP (Chomsky 1995). Both VP and vP are dominated by a set

⁸ As Marcel den Dikken (p.c.) observes, the deletion of the categorial features of X from XP^{n+1} as a result of X^0 -raising may follow if one assumes that traces have no features, or have features which are somehow ‘impoverished’. That is, XP^{n+1} is reanalysed as ZP^{n+1} in (20) because the features of the trace t_i are not sufficient to block the features of the specifier.

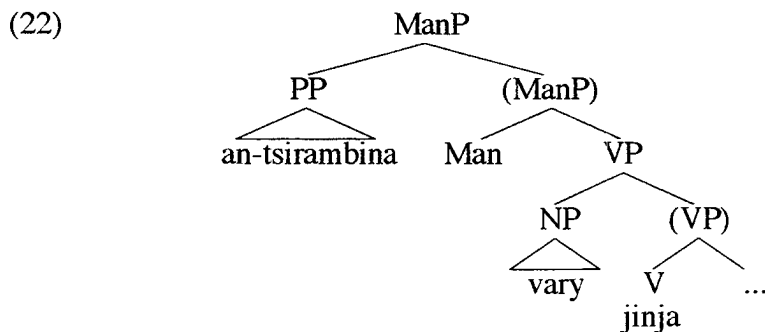
⁹ Notice that the structures derived through categorial reanalysis resemble structures of Pesetsky’s (1995) ‘cascade’ syntax, an independent level of representation wherein a head may select not only its complement, but also the specifier of its complement. It is possible that many of the empirical facts which Pesetsky explains in terms of cascade structures can be derived as a by-product of categorial reanalysis, making it unnecessary to posit an extra level of syntax. I intend to explore this possibility in future work.

¹⁰ For the sake of concreteness, I follow Sportiche (1992) and Bowers (1993) in assuming that internal arguments are assigned their theta roles in specifier positions by XP-level categories. The exact base position of the direct is not crucial to my analysis, however.

of functional projections, notated FP. The tense prefix *n-* I locate in the head of TP. The structure for this is shown in (21).¹¹

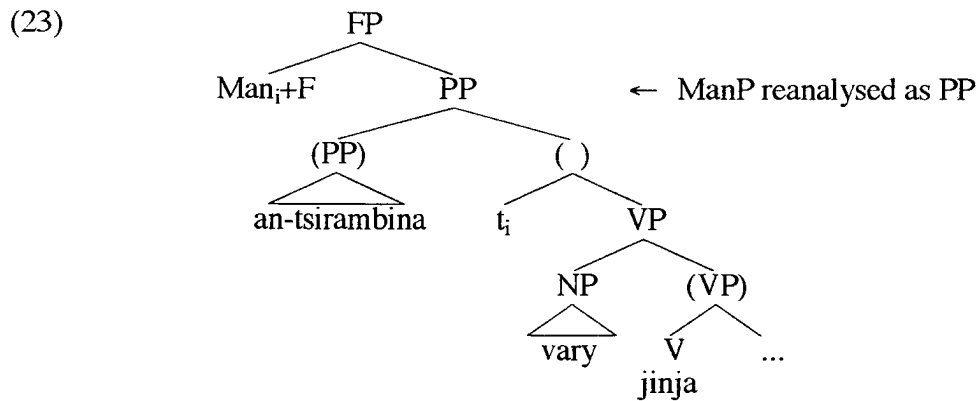


In the process of building up the structure in (21), the VP (or perhaps some event-denoting category containing the VP) may be selected by the head Man^0 , which projects a ManP , and takes a manner adverb such as *an-tsirambina* as its specifier, as shown in (22) below. (For the sake of argument, I will assume that *an-tsirambina* is of category PP.) The function of Man^0 in this structure is to establish a predication relation between the adverb and the VP: (22) may be interpreted along the lines of “carelessly (*an-tsirambina*) is the manner in which the event of harvesting the rice (*vary jinja*) is carried out”.

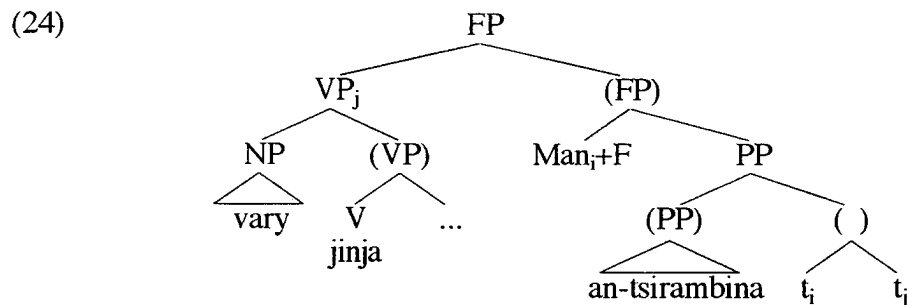


To derive the order in (20), where *an-tsirambina* follows the verb and its object, the VP must raise to some position above ManP (after which *jinja* raises out of VP to form a unit with the verbal prefix *i-*). I accomplish this by means of a two step process: Step one involves raising of Man^0 to adjoin to some higher functional head F^0 (presumably to check a feature of F). This in turn causes ManP to be reanalysed as a projection of the PP in its specifier, in accordance with categorial reanalysis. The results of this movement are shown in (23):

¹¹ Other analyses are also possible. However, the exact details of verbal/clausal structure in Malagasy are not crucial to my analysis, and so I adopt (21) without argument.



Step two involves the raising of VP to become the specifier of FP, as shown in (24). It is this movement (in combination with further raising of *jinja* out of its VP) which derives the order in (20).



Notice that in this configuration, the VP is the specifier of the projection headed by the adjunction structure [$\text{Man}^0 + \text{F}^0$], while the PP is its (derived) complement. A second predication relation between the VP and the adverb is thus established. Whether this is a desirable result remains an open question. Note, though, that the formation of a ‘double predication’ via movement of the VP over the adverb recalls Barbiers’s (1995) theory of verbal modification: Barbiers argues that verbal modifiers (adverbs and non-argument PPs) adjoin to the VP they scope over, after which the VP undergoes movement to become the specifier of the modifier (either overtly or at LF). This movement is required so that the modifier may be interpreted as a qualifier of the VP, in accordance with Barbiers’s theory that semantic relations such as predication are determined by X-bar configurations. (See Barbiers (1995) for details.)¹²

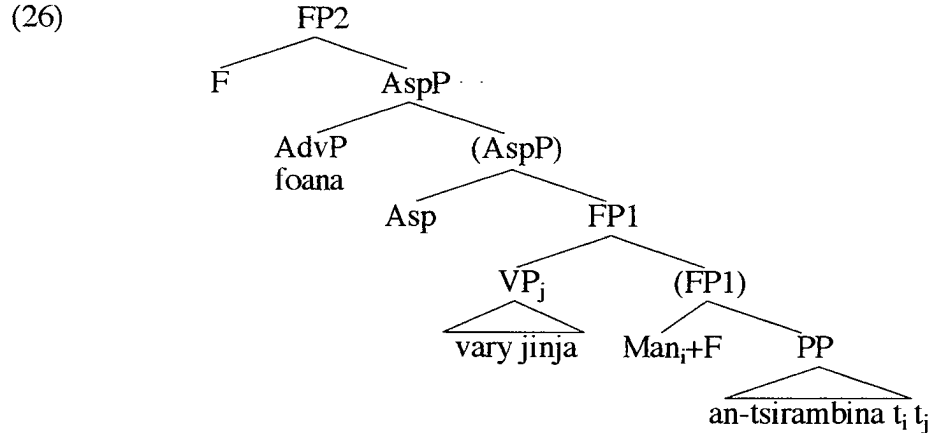
The VP-raising analysis outlined above extends in the expected way to sentences containing more than one adverb. Consider (25), for example, where the temporal/aspectual adverb *foana* “always” scopes over the manner adverb *an-tsirambina* “carelessly”:

- (25) Mijinja vary an-tsirambina foana ny mpamboly
 cut:NT rice carelessly always Det farmer
 “The farmer always harvests the rice carelessly”

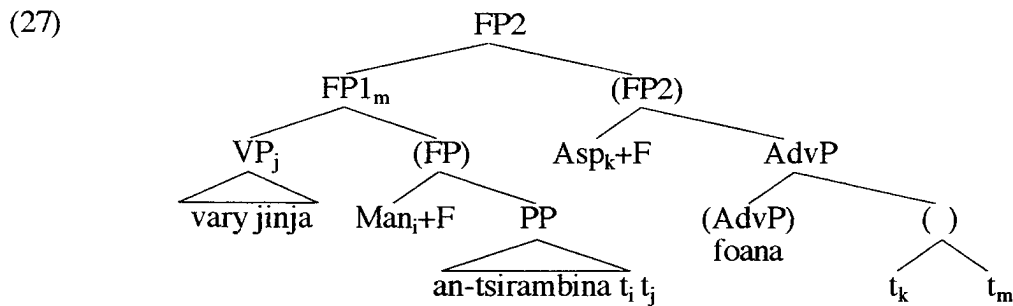
Sentences such as (25) involve multiple layers of adverbial predication, and multiple applications of the two-step movement process in (23)-(24). Following Cinque (1997, chapter 4), let us assume that adverbs like *foana* “always” are associated with some aspectual head

¹² Note that Barbiers’s theory of modification was adopted in a previous version of this paper, circulated as Pearson (1997b). (Cf. also Costa (1997), who argues for a Barbiers-style analysis of postverbal adverbs in English.)

Asp. As the tree in (26) shows, this Asp head selects an event-denoting functional category containing the VP and the manner adverbial (labelled FP1)¹³, and establishes a predication relation between this category and the adverbial *foana* in its specifier. AspP is in turn selected by a higher functional head, which projects an additional layer of functional structure (labelled FP2).



To derive the order in (25), Asp⁰ moves to adjoin to the head of FP2, while FP1 raises to become the specifier of FP2, producing the ‘stacked’ structure in (27). Sentences containing multiple adverbs would be built up in a similar fashion.

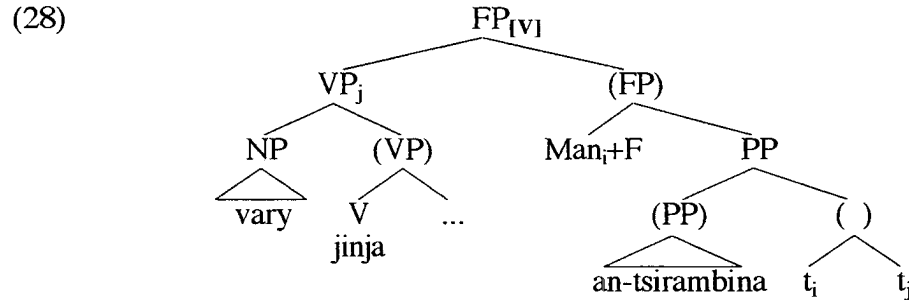


The analysis outlined above raises the question of why VP must move over the adverb into the SpecFP position. Here I would like to suggest that VP raises to SpecFP so that FP can get a [V] feature through inheritance, and thereby become an extended projection of the verb (in the sense of Grimshaw (1991)). Acquiring such a [V] feature is necessary if FP is to be eligible for selection by a higher V-related head (such as tense, or the light verb *v*⁰).

This hypothesis assumes a derivational approach to Grimshaw’s notion of extended projections, according to which functional heads acquire lexical features through inheritance, rather than having them specified in the lexicon: Under this approach, in order for a functional head F to become a part of the extended projection of a lexical head L, some element containing the lexical features of L must raise and adjoin to (or Fuse with) F, thereby enabling (some projection of) F to inherit those lexical features. This process is presumably motivated by selectional requirements: E.g., suppose that the tense head T selects for a constituent containing the lexical feature [V] (a plausible assertion on both syntactic and semantic grounds). It follows that this [V] feature, which originates in VP, must somehow be transmitted through inheritance to the complement of T⁰.

¹³ Here I show FP1 as being the same as FP in the tree in (24). However, it is possible that FP2 properly contains this FP - i.e. there may be multiple layers of functional structure between Asp⁰ and ManP.

In the canonical case, this kind of successive lexical feature transmission would occur by means of head adjunction (e.g. verb movement).¹⁴ However, suppose that head movement were blocked in certain cases. Feature transmission would then have to proceed via XP-movement. VP raising over the adverbial in (24) may be an example of this latter type of movement: In order to be selectable by a higher V-related head such as tense, FP must acquire a [V] feature from the verb. Let us assume that head raising of V^0 to F^0 is blocked - perhaps because incorporation of V^0 into Man^0 is disallowed in Malagasy.¹⁵ FP must therefore acquire its [V] feature by attracting VP into its specifier position (where concatenation of a specifier with its target, being a type of Fusion, leads to the inheritance of the features of the specifier by the resulting category). I show this schematically in (28), where the inherited [V] feature of FP is marked by a subscript: ¹⁶



By inheriting a [V] feature from the VP in its specifier, FP essentially becomes a further projection of that VP. This explains why adverbs display the properties of ‘transparency’ or ‘optionality’ which motivated traditional VP/IP-adjunction analyses of adverbs (e.g. Bowers 1993): If FP is in some sense a projection of VP, then it follows that FP and VP should have more or less the same syntactic distribution, hence the impression that the adverb is an optional element. Inheritance of the [V] feature by FP has other effects as well, I claim: In particular, it renders VP transparent for extraction of the verb and its object (see next section), movements which might otherwise be ruled out by the Left Branch Condition.

Note that in (27), FP2 inherits its [V] feature from the FP1 in its specifier, which in turn inherited a [V] feature from the VP in *its* specifier. (In this case, raising of FP1 may also be motivated by the need for the [Asp^0+F^0] complex to check its aspectual feature against the aspectual feature of the verb.)

4. Rightward object shift and adverb order revisited

Having discussed the syntax of adverbial elements, I now return to the phenomenon of rightward object shift. Recall from the examples in (2) (repeated below as (29)) that non-specific direct objects must occur right-adjacent to the verb, preceding the manner adverb, while specific direct objects appear to scramble away from the verb to a position following the manner adverb - an apparent case of rightward movement:

- (29) a. Nijinja vary an-tsirambina ny mpamboly
 Pst-cut:NT rice carelessly Det farmer
 “The farmer harvested rice carelessly”

¹⁴ Recall that head-adjunction is a kind of Fusion, which results in inheritance of the features of the moved element together with the features of the target.

¹⁵ Direct raising of V^0 to F^0 over Man^0 would of course violate the Head Movement Constraint.

¹⁶ In order for this story to work, we must assume that, in certain cases at least, the categorial features of functional heads fail to block the expression of the categorial features of lexical heads. In particular, we must assume that the [V] feature inherited from VP is not blocked by the categorial features of FP.

- b. Nijinja an-tsirambina **ny vary** ny mpamboly
 Pst-cut:NT carelessly Det rice Det farmer
 “The farmer harvested the rice carelessly”

Here I propose that the order in (29b) results from raising of the direct object out of the VP to an external licensing position, followed by leftward movement of some constituent XP, containing the VP remnant and the adverb, to a position above the raised object. In (29a), by contrast, the direct object fails to raise out of VP, and is thus carried along with the verb and the adverb when XP movement takes place.

The exact position targeted by object raising is unclear - as is the type of movement involved (A- versus A'-movement). Since the position in question appears to attract only [+specific] noun phrases, I will assume that it is an operator position, the specifier of a functional projection which I call the *inner topic phrase* (ITopP). The head of this phrase selects as its complement an event-denoting projection containing a [V] feature, as shown in (30):

- (30) $[_{ITopP} DP_i ITop^0 [_{FP[V]} \dots [_{VP} t_i V^0]]]$

In the case of the sentence in (29b), which contains both an adverb and a raised object, movement to SpecITopP takes place after the VP has raised to become the specifier of FP (which allows FP to acquire a [V] feature, as discussed in section 3). This is shown by the tree in (31). Recall that movement from SpecVP to SpecITopP does not violate the Left Branch Condition because the lexical [V] feature has been transmitted to FP, rendering VP transparent for extraction.¹⁷

- (31)
-
- ```

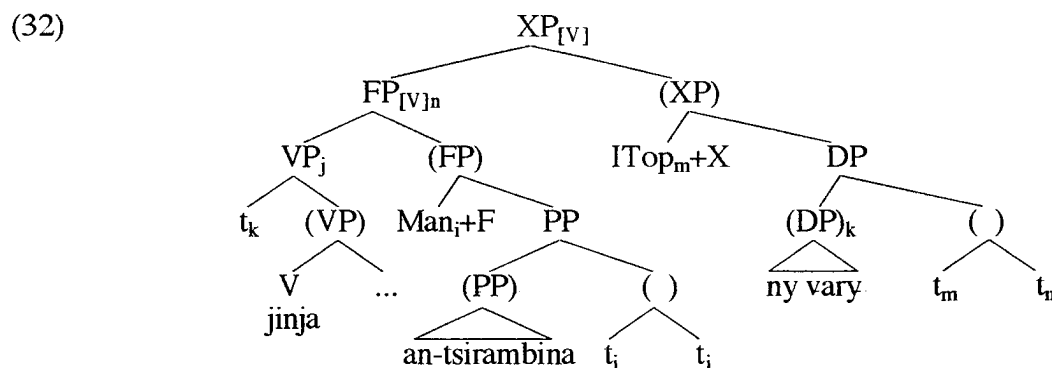
graph TD
 ITopP --> DP_k
 ITopP --> ITopP2["(ITopP)"]
 DP_k --> ny_vary["ny vary"]
 ITopP2 --> ITop
 ITopP2 --> FP_V["FP_{[V]}"]
 ITop --> ITop_text["ITop"]
 FP_V --> VP_j
 FP_V --> FP
 VP_j --> t_k
 VP_j --> VP2["(VP)"]
 VP2 --> V["V
jinja"]
 VP2 --> ellipsis["..."]
 FP --> Man_i_F["Man_i+F"]
 FP --> PP
 PP --> PP2["(PP)"]
 PP --> empty1["()"]
 PP2 --> an_tsirambina["an-tsirambina"]
 PP2 --> t_i["t_i"]
 empty1 --> t_j["t_j"]

```

After object raising, FP must move to a position above ITopP to derive the proper order. The exact identity of this position is unimportant for my analysis: If my account of [V] feature transmission is correct, then FP must necessarily raise to *some* position above the Inner Topic, if the verb is to be allowed to escape its VP. (In fact, FP raising may target different positions in different sentences, depending on the structure of the clause above ITopP.) Here I will simply refer to the landing site of FP as SpecXP.

For the sake of concreteness, I assume that ITop<sup>0</sup> first raises to adjoin to the head of XP, after which FP raises to SpecXP, as shown in (32). This derives the order in (29b), where the object *ny vary* follows *an-tsirambina*. As with VP movement to SpecFP, FP movement to SpecXP allows XP to inherit a [V] feature from the verb, which in turn allows the verb to raise out of XP (perhaps to adjoin to the light verb *v*<sup>0</sup>).

<sup>17</sup> I rule out extraction of the object *prior* to VP raising, since such a derivation would violate Cyclicity.



As a final note on this analysis, let us briefly return to the issue of adverb order in Malagasy versus adverb order in Italian. Recall from section 2, examples (12) and (13), that while Malagasy has roughly the same classes of postverbal adverbs as are found in Italian, the order of the adverbs belonging to these classes is the mirror image of what one finds in Italian. How can this fact be explained given the theory presented in this paper?

In section 3, I explained the order of adverbs in Malagasy in terms of XP movement of a constituent containing the verb to a position above the adverb. For example, I derived the order in (25) - repeated below as (33) - by first raising the VP (containing the verb and its object) into SpecFP1, above the specifier position occupied by the manner adverb *an-tsirambina* “carelessly”, and then raising FP1 into SpecFP2, above the position occupied by the aspectual adverbial *foana* “always”. (This derivation is shown in (26)-(27).)

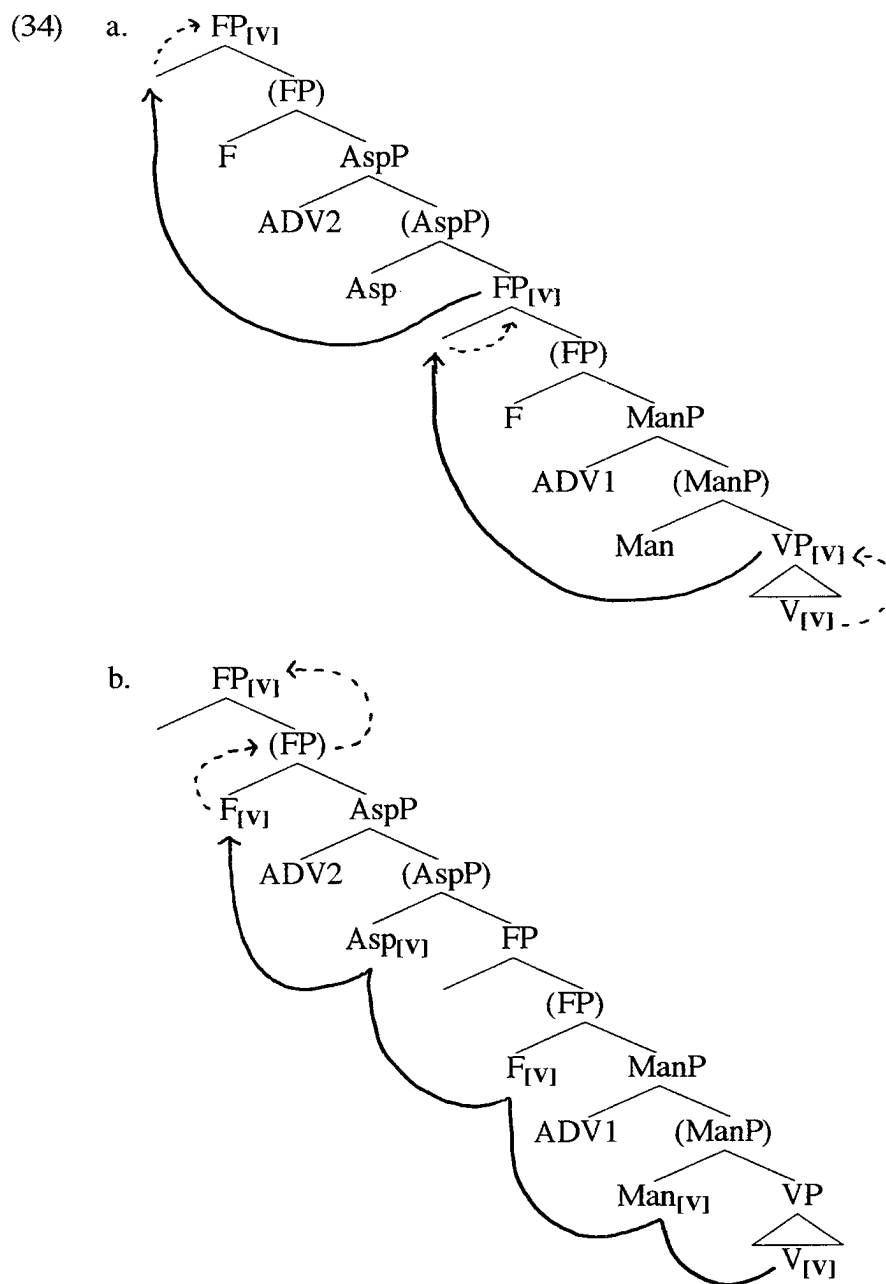
- (33)    Mijinja   vary   an-tsirambina   foana   ny   mpamboly  
          cut:NT   rice   carelessly   always   Det   farmer  
          “The farmer always harvests the rice carelessly”

At each step, XP raising was forced by the need to transmit the verb’s lexical feature to a higher projection through Fusion, since transmission of this feature via head movement was presumably ruled out. Why head movement should be ruled out is unclear, although I speculated that this might have to do with the inability of  $V^0$  to adjoin to the predicate head hosting the adverb in its specifier (see the discussion preceding example (28)).

Suppose, however, that adjunction of the verb to the predicate head *was* permissible in Italian, so that transmission of the [V] feature to FP could proceed by means of verb movement - viz., adjunction of  $V^0$  to  $\text{Man}^0$ , followed by adjunction of  $[\text{V}^0 + \text{Man}^0]$  to  $\text{F}^0$  - rather than by means of XP-movement. If such were the case, then feature inheritance and the creation of extended projections in Italian would not result in the pied-piping of adverbs to higher positions, as in Malagasy. Instead, the verb would raise around the adverbs (as in Cinque’s theory), and the adverbs themselves would remain in situ, with their relative scope reflected in their left-right order. This difference is schematised informally in (34), where (34a) represents Malagasy and (34b) represents Italian. Here, the path of [V] feature transmission from  $V^0$  to FP is indicated by means of arrows, with solid arrows indicating movement and broken arrows indicating feature inheritance:<sup>18</sup>

<sup>18</sup> Note that certain steps in (34b) - having to do with feature inheritance within head-adjunction structures - have been left out for the sake of simplicity.





(34a) results in an order where ADV1 precedes ADV2, whereas (34b) results in an order where ADV2 precedes ADV1. (Whether there is any independent evidence for saying that [V] feature transmission involves XP-movement in Malagasy and head-movement in Italian remains to be seen, however. I leave this as a question for future research.)

## 5. Conclusion

In this paper I argued that object shift in Malagasy can be successfully analysed within a theory - such as that advocated by Kayne (1994) - which excludes the possibility of rightward movement and right adjunction. I suggested that the apparent rightward movement of specific direct objects to a position following manner adverbs is illusory, and that the order in such sentences is the result of a series of leftward movements: (i) The VP, containing the verb and its object, raises to a SpecFP position above the manner adverb (where the adverb is generated in the specifier of a predicate head such as  $\text{Man}^0$  or  $\text{Asp}^0$ ). (ii) The

object extracts from VP and raises to the specifier of the Inner Topic phrase, where its [+specific] feature is checked. (iii) FP (containing the VP remnant and the adverb) raises to a higher specifier position, SpecXP, 'stranding' the object. Raising of VP to SpecFP and FP to SpecXP were motivated by the need to transmit the [V] feature of the verb to a higher projection, thereby creating an extended projection of the verb, as well as rendering the VP transparent for extraction.

I concluded by considering briefly how to derive the different orders of postverbal adverbs in Malagasy and Italian. I suggested that these languages differ in that Malagasy makes use of phrasal movement to transmit the [V] feature of the verb; whereas Italian makes use of head movement (resulting in a derivation essentially identical to that argued for by Cinque (1997)). Phrasal movement in the case of Malagasy results in the pied-piping of each adverb over the position occupied by the next higher adverb, yielding a surface linear order which is the mirror image of the underlying order. Additional work will need to be done to see if the theory of adverbs advocated here can be successfully applied to data in other languages.

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## Raising to object in Malagasy\*

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### 1. Introduction

This paper examines so-called raising to object<sup>1</sup> (henceforth, RTO) in Malagasy. RTO is a topic of long-standing debate within generative grammar. Our goal is therefore to introduce the Malagasy facts in hope that they will shed some light on this construction. While RTO may not be a unified phenomenon, it is important to explore the range of cross-linguistic variation. This paper begins with an overview of the relevant Malagasy data and then turns to a discussion of past analyses of RTO (mainly for English) and the implications for Malagasy. We leave a final analysis for future work, but point out some possible directions for further research on this topic.

#### 1.1 Introduction to Malagasy

The basic word order in Malagasy is VOS.

- (1) Nanoroka      an'i Rija   i Soa.  
pst.AT.kiss   acc-Rija   Soa  
'Soa kissed Rija.'

Predicates of all categories as well as verbs can act as matrix predicates. Note the absence of any copular verbs in (2).

- (2) a. ADJECTIVE  
Fotsy   ny gidro.  
white   det lemur  
'The lemur is white.'
- b. PREPOSITION<sup>2</sup>  
Tany      an-tokotany   ny gidro.  
pst.there   acc.garden   det lemur  
'The lemur was in the garden.'
- c. NOUN  
Biby      ny gidro.  
animal   det lemur  
'The lemur is an animal.'

Clausal complements and adjuncts appear to the right of the matrix subject, giving rise to the word order VSX.

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\* We would like to thank Ed Keenan and Lisa Travis for comments and suggestions. Any errors remain our own.

<sup>1</sup> Throughout this paper we use the term "raising to object" pretheoretically. That is, we intend it to describe a class of constructions without any implication as to the final analysis.

<sup>2</sup> The status of locative elements like *tany* 'there' in (2b) is unclear. For the present purposes, we classify them as prepositions.

- (3) a. Miaiky ny olona [CP fa nandoko trano izy ].  
 AT.admit det person comp pst.AT.paint house 3(nom)  
 ‘The people admit that he painted a house.’
- b. Narary izy [CP satria nihinana voankazo manta].  
 pst.sick 3(nom) comp pst.AT.eat fruit unripe  
 ‘He fell sick because he eat unripe fruit.’
- c. Homeko valisoa ianao [CP raha mety mihira].  
 fut.TT.give.1sg(gen) reward 2sg(nom) comp correct AT.sing  
 ‘I will give you a reward if you accept to sing.’

Other elements that follow the subject include temporal adverbials and (with a change in interpretation) locative PPs. (See Paul and Ranaivoson (1998) for some discussion of verbal complementation.)

- (4) a. Nanoroka an’i Rija i Soa omaly.  
 pst.AT.kiss acc-Rija Soa yesterday  
 ‘Soa kissed Rija yesterday.’
- b. Nanoroka an’i Rija i Soa [pp tany an-tokotany ].  
 pst.AT.kiss acc-Rija Soa pst.there acc.yard  
 ‘Soa kissed Rija in the yard.’

(4b) comes with the presupposition that Soa did something in the yard. A better translation therefore might be: ‘What Soa did in the yard was kiss Rija’.

## 1.2 Introduction to RTO in Malagasy

This paper focusses on a special construction which we call raising to object (RTO), as illustrated in (5). The brackets in (5) serve to delimit the embedded clause; see below for discussion of constituency.

- (5) Miaiky [azy ho nandoko trano] ny olona.  
 AT.admit 3(acc) comp pst.AT.paint house det person  
 ‘The people admit him to have painted a house.’

The example in (5) differs from that in (3a) in three ways. First, the embedded clause appears in the typical NP object position. In other words, it is not extraposed to the right of the matrix subject. Second, the embedded subject appears to the left of the embedded verb, i.e. between the matrix and the embedded verb. Third, the “complementizer” is *ho*. An analysis of RTO must therefore address the following issues: the constituency of the complement in (5) (e.g. CP, IP or other); the structural position of the embedded subject (matrix or embedded clause); the nature of *ho*. In other words, although we gloss *ho* as ‘comp’ for consistency, but it may turn out not to be a “true” complementizer. The first two questions arise in languages other than Malagasy whereas the third is Malagasy-specific, but clearly related to the first.

In section 2, we look at a wide range of RTO data in Malagasy, attempting to answer these three questions. Section 3 examines some past theoretical analyses of RTO and evaluates them in the light of the Malagasy data.

## 2. Data

### 2.1 Range of verbs

RTO is a very productive phenomenon in Malagasy, occurring with almost any verb that can take a CP complement. Drawing on Rabenilaina (1985), we have come up with over 50 such verbs, listed in the appendix. In this way, Malagasy differs from English, where RTO is a relatively limited process. Not only do many verbs enter into this alternation, but the embedded predicate can be of any category (compare (6) with the data in (2)).

- (6) a. ADJECTIVE  
 Mahafantatra ny gidro ho fotsy i Bema.  
 AT.know det lemur comp white Bema  
 'Bema knows the lemur to be white.'
- b. PREPOSITION  
 Nahafanatra ny gidro ho tany an-tokotany i Bema.  
 pst.AT.know det lemur comp pst.there acc.garden Bema  
 'Bema knew the lemur to be in the garden.'
- c. NOUN  
 Mahafantara ny gidro ho biby i Bema.  
 AT.know det lemur comp animal Bema  
 'Bema knows the lemur to be an animal.'

Moreover, the embedded verb can take any voice morphology. (7a) and (7b) illustrate the passive and circumstantial voices, respectively.<sup>3</sup>

- (7) a. Nilaza an'ilay akoho ho novonoiko  
 pst.AT.say acc.det chicken comp pst.TT.kill.1sg(gen)  
 tamin'ity antsy ity Rabe.  
 pst.with.this(gen) knife this Rabe  
 (lit.) 'Rabe said this chicken to have been killed with this knife.'
- b. Nilaza ity antsy ity ho namonoako ilay akoho Rabe.  
 pst.AT.say this knife this comp pst.CT.kill.1sg(gen) det chicken Rabe  
 (lit) 'Rabe said this knife to have been used to kill this chicken.'

Similarly, the embedded verb can appear in any tense. In other words, there is no apparent tense dependency between the matrix and embedded verbs.

- (8) Mihevitra an-dRabe ho namono /mamono /hamono ilay biby aho.  
 AT.think acc-Rabe comp pst.AT.kill /AT.kill /fut.AT.kill det animal 1sg(nom)  
 'I think Rabe to have killed/to be killing/will kill this animal.'

The data in (7) and (8) suggest that the embedded clause has rich enough structure to license voice and tense morphology.

<sup>3</sup> Malagasy, like many Malayo-Polynesian languages, has a complex voice system. As well as the familiar active and passive, there is the circumstantial voice which promotes obliques and adjuncts to the grammatical subject position.

## 2.2 Word order

As noted above, a change in word order arises in RTO constructions (9b), as compared to standard complement clauses (9a).

- (9) a. Nametra            ny mpitsara [CP    fa       iray ny valiny            marina ].  
       pst.AT.determine det judge                comp one det answer.3(gen) true  
       ‘The judge determined that there would be one right answer.’
- b. Nametra            [    ny valiny            marina ho       iray ] ny mpitsara.  
       pst.AT.determine det answer.3(gen) true       comp one       det judge  
       ‘The judge determined there to be one right answer.’

In (9a), the embedded CP appears in the clause-final position.<sup>4</sup> Due to VOS word order, the embedded subject *ny valiny marina* ‘the right answer’ also occurs at the right edge of its clause. In (9b), on the other hand, the embedded clause surfaces between the matrix verb and matrix subject, the standard direct object position.<sup>5</sup> Moreover, within the embedded clause the subject precedes the predicate, giving embedded SVO word order. Importantly, the embedded subject is not clause-final.

## 2.3 Comp

The second main difference between a RTO construction and other types of CP complementation lies in the complementizer. For standard subordinate clauses, the complementizer is *fa*, while in RTO contexts *ho* appears. The precise status of *ho* remains mysterious. In (9b), it looks like a complementizer, but the examples below illustrate its use as a future tense prefix and a benefactive particle (data from Abinal and Malzac (1888)):

- (10) a. Ho afaka izy.  
       fut free       3(nom)  
       ‘He will be free.’
- b. Ho anao ity.  
       for 2sg(acc) this  
       ‘This is for you.’

It remains to be shown whether or not these uses can be collapsed under one common meaning. Note that in RTO contexts, *ho* cannot be the same morpheme as tense as both can cooccur. This is shown in the examples in (4) and in (11) below.

- (11) Mihevitra ilay lamba ho efa hosasan-dRabe i Sahondra.  
       AT.think det cloth comp already fut.TT.wash.Rabe(gen) Sahondra  
       ‘Sahondra believes the clothes will have already been washed by Rabe.’

It seems, however, that *ho* and future tense cannot appear adjacent to each other; in these cases, the *ho* is either dropped (syncretism as in (12b)) or realized as *hoe* (12a).

<sup>4</sup> In fact, as shown earlier, all CPs (complement and adjunct) in Malagasy appear clause-finally.

<sup>5</sup> The brackets in (9b) are for expositional reasons, as mentioned above. At this point, we make no claims as to the constituency of the embedded clause.

- (12) a. Mihevitra an-dRabe hoe hanasa ilay lamba izy.  
 AT.think acc-Rabe ?? fut.AT.wash det cloth 3(nom)  
 ‘He believes Rabe will wash the clothes.’
- b. Mihevitra azy hahay aho.  
 AT.think 3(acc) fut.AT.able 1sg(nom)  
 ‘I believe he will be clever.’

This alternation with *hoe* is all the more mysterious as it is not possible in all cases and *hoe* is usually used adverbially to mean ‘thus, in this way’.

## 2.4 The embedded subject

In this subsection, we address the issue of the embedded subject in RTO contexts. In what ways does it acts like a matrix object and in what ways does it pattern with other embedded subjects?

### 2.4.1 Selectional restrictions

There are few restrictions on the nature of the “raised” NP. We have already seen some examples with animate NPs (proper names, personal pronouns), also possible are inanimate (13a,b), collective (13c), coordinate (13d), and quantified NPs (13e).

- (13) a. Mino ny orana ho avy aho.  
 AT.believe det rain comp come 1sg(nom)  
 ‘I believe the rain to be coming.’
- b. Mino izany ho marina aho.  
 AT.believe that comp true 1sg(nom)  
 ‘I believe that to be true.’
- c. Mino ny tafika ho tsy nataho-maty ny olona.  
 AT.believe det army comp not pst.fear-death det person  
 ‘The people believe the army to have not feared death.’
- d. Mino an-dRabe sy Rakoto ho kinga saina aho.  
 AT.believe acc-Rabe and Rakoto comp clever mind 1sg(nom)  
 ‘I believe Rabe and Rakoto to be intelligent.’
- e. Mino ny mpianatra tsirairay ho nitaraina aho.  
 AT.believe det student each comp pst.AT.complain 1sg(nom)  
 ‘I believe each student to have complained.’

This contrasts with control contexts where the matrix verb imposes selectional restrictions on its object.

- (14) a. Niampanga an’i Koto nangalatra akoho i Bema.  
 pst.AT.accuse acc-Koto pst.AT.steal chicken Bema  
 ‘Bema accused Koto of having stolen chickens.’
- b. \*Niampanga ny orana avy i Bema.  
 pst.AT.accuse det rain come Bema  
 ‘Bema accused the rain of coming.’

In this way, Malagasy patterns with English: the embedded subject in RTO constructions does not act like an argument of the matrix verb. On the other hand, the embedded NP in control constructions acts like an argument of the matrix verb.

There is, however, one rather surprising restriction on the embedded subject in a RTO construction: it must be specific.

- (15) a. \*Mihevitra zanaka ho hendry aho.  
 AT.think child comp wise 1sg(nom)  
 'I think that some child is well-behaved.'
- b. \*Hendry zanaka.  
 wise child  
 'Some child is wise.'

At first, this appears natural as all subjects in Malagasy must be specific, as shown by the ungrammaticality of (15b). There are, nevertheless, exceptions to this rule as seen in (16).

- (16) Lasa any an-dafy na Rabe na Ranaivo.  
 gone there acc-side or Rabe or Ranaivo  
 'Either Rabe or Ranaivo went overseas.'

Such a subject, however, cannot appear in a RTO context.

- (17) \*Mihevitra na Rabe na Ranaivo ho lasa any an-dafy aho.  
 AT.think or Rabe or Ranaivo comp gone there acc-side 1sg(nom)  
 'I believe either Rabe or Ranaivo to have gone overseas.'

Similarly, the specificity effect in (15) shows that the "raised object" is not like a base-generated object, which can be specific or nonspecific.

- (18) Nanoraka (ny) zanaka aho.  
 pst.AT.kiss det child 1sg(nom)  
 'I kissed (the) children.'

As an interesting exception to the specificity requirement, a bare reflexive may occur in RTO contexts.<sup>6</sup>

- (19) a. Mihevi-tena ho olo-marina izy.  
 AT.think-self comp person-true 3sg(nom)  
 'He thinks himself to be the right person.'
- b. \*Mihevitra izy fa olo-marina tena.  
 AT.think 3(nom) comp person-true self  
 'He thinks that himself is the right person.'

Like other nonspecific NPs, *tena* cannot appear as a matrix subject (19b). We therefore have a three-way contrast: the ungrammaticality of (15a) is not surprising as the source (15b) is ungrammatical; the ungrammaticality of (17) is surprising as the source (16) is grammatical; the grammaticality of (19a) is surprising as the source (19b) is ungrammatical. The specificity restrictions on the embedded subject in RTO therefore differ from those on regular subjects and base-generated objects.

<sup>6</sup> Note that in (19a), the reflexive *tena* has incorporated into the matrix verb. Such incorporation is generally optional.



### 2.4.2 Case

One important aspect of RTO constructions is the Case-marking on the raised NP. Like non-derived objects, it is marked with accusative Case (20a) and can passivize to subject (20b).

- (20) a. Nilaza an'ilay akoho ho novonoiko Rabe.  
 pst.AT.say-acc.det chicken comp pst.TT.kill.1sg(gen) Rabe  
 'Rabe said this chicken to have been killed by me.'
- b. Nolaizain-dRabe ho novonoiko ilay akoho.  
 pst.TT.say.Rabe(gen) comp pst.TT.kill.1sg(gen) det chicken  
 'The chicken was said by Rabe to have been killed by me.'

In this way, Malagasy RTO patterns with the familiar English facts. The data can be interpreted as either showing that the embedded subject is in the matrix clause (a raising analysis) or that the embedded clause is somehow "transparent" to Case-assignment (so-called Exceptional Case Marking).

### 2.4.3 Adverbs

As discussed in Pearson (1998a), adverb placement can be used as a test for the position of the embedded subject. He points out that the accusative Case-marked NP in RTO follows matrix PP adjuncts. An example is given below.

- (21) a. Nilaza tamin-katezerana an-dRabe ho mpangalatra Rasoana.  
 pst.AT.say pst.with-anger acc-Rabe comp thief Rasoana  
 'Rasoana angrily said that Rabe was a thief.'
- b. ??Nilaza an-dRabe tamin-katezerana ho mpangalatra Rasoana.  
 pst.AT.say acc-Rabe pst.with-anger comp thief Rasoana  
 'Rasoana angrily said that Rabe was a thief.'

At first blush, the data in (21) suggest that the embedded subject is not in the matrix clause (as indeed Pearson concludes). When compared with adverb placement in simple clauses, however, it is more difficult to draw any firm conclusions. As both Rackowski (1998) and Pearson (1998b) point out, adverbs precede indefinite (or nonspecific) object and follow definites (or specifics). This is illustrated in (22).

- (22) a. Manasa lamba tsara Rakoto.  
 AT.wash cloth good Rakoto  
 'Rakoto washes clothes well.'
- b. Manasa tsara ny lamba Rakoto.  
 AT.wash good det cloth Rakoto  
 'Rakoto washes the clothes well.'

Returning then to (21), the placement of the embedded subject after the adverb is not surprising as it is a definite NP. Since only definite NPs undergo RTO, it is impossible to show whether the order in (21b) improves with an indefinite NP. In other words, adverb placement remains an inconclusive test for the position of the embedded subject.

#### 2.4.4 Binding

Facts from binding have often shed light on the status of the embedded subject in RTO contexts. Lasnik and Saito (1991), for example, cite the following data from English as evidence that the embedded subject has raised into the matrix clause.

- (23) a. \*Jack<sub>i</sub> believed him<sub>i</sub> to be immoral.  
 b. Jack<sub>i</sub> believed himself<sub>i</sub> to be immoral
- (24) a. ?The DA proved [the defendants to be guilty] during each other's trials.  
 b. \*The DA proved [that the defendants were guilty] during each other's trials.

The contrast in (23) and (24) shows that the embedded subject acts like a matrix object for binding. In (23), the embedded subject appears in a position “close enough” to the matrix subject to allow binding of an anaphor and rule out a coreferent pronoun. Similarly, in (24a) the NP *the defendants* is “high enough” to license a reciprocal in an adverbial in the matrix clause. They go on to argue that this raising must take place by S-structure (or Spell-Out in minimalist terms) rather than at LF.

Once we turn to Malagasy, however, the picture is not so clear. Before going through the RTO facts, we note that binding in Malagasy is a complex phenomenon and a complete discussion is clearly beyond the scope of this paper. In this section, we limit ourselves to preliminary comments. For a detailed analysis of binding, see Travis (1997). On the one hand, a reflexive bound to the matrix subject is possible in the embedded subject position.

- (25) Mihevitra ny tenany<sub>i</sub>      ho      manaja      an'i Bakoly      Rakoto<sub>i</sub>.  
 AT.think det self.3(gen) comp AT.respect acc.Bakoly Rakoto  
 ‘Rakoto thinks himself to respect Bakoly.’

The binding in (25) is not possible if the reflexive subject is embedded in a “true” complement CP:

- (26) \*Mihevitra Rakoto<sub>i</sub> fa      manaja      an'i Bakoly ny tenany<sub>i</sub>.  
 AT.think Rakoto comp AT.respect acc.Bakoly det self.3(gen)  
 ‘Rakoto thinks that himself respects Bakoly.’

In this way, therefore, Malagasy patterns with English; (25) is parallel to (23b). Moreover, the embedded clause in (25) is not simply transparent to binding. (27) shows that the matrix subject cannot bind an embedded object.

- (27) \*Mihevitra an'i Soa ho      manaja      ny tenany<sub>i</sub>      Rakoto<sub>i</sub>.  
 AT.think acc.Soa comp AT.respect det self.3(gen) Rakoto  
 ‘Rakoto thinks Soa to respect himself.’

Interestingly, however, the embedded subject does not pattern uniformly with base-generated objects. For example, it can be a pronoun bound to the matrix subject, unlike the English (23a).

- (28) Mihevitra azy<sub>i</sub>      ho      manaja      an'i Bakoly Rakoto<sub>i</sub>.  
 AT.think 3(acc) comp AT.respect acc.Bakoly Rakoto.  
 ‘Rakoto thinks him to respect Bakoly.’

This contrasts with objects in simple clauses, as shown in (29).<sup>7</sup>

- (29) \*Manaja azy<sub>i</sub> Rakoto<sub>i</sub>.  
 AT.respect 3(acc) Rakoto  
 ‘Rakoto respects him.’

The embedded subject in a RTO construction must therefore be in a position distinct from true embedded subjects and from true objects.

#### 2.4.5 Coordination

One traditional test for constituency has been coordination. It is generally assumed that only constituents can be conjoined. Coordination facts, therefore, should tell us about the constituency of RTO sentences. Malagasy has two main coordinate conjunctions: *ary* is used for full clauses and *sy* is for smaller constituents. In the following discussion, we focus on the latter, as we are concerned with the internal structure of RTO constructions. The different coordinate structures are illustrated below.

- (30) a. [ V ] *sy* [ V ] acc-NP ho pred NP(nom)  
 Midera sy mihevitra an-dRakoto ho kinga saina aho.  
 AT.praise and AT.think acc-Rakoto comp clever mind 1sg(nom)  
 ‘I praise and think that Rakoto is intelligent.’
- b. V [ acc-NP ho pred ] *sy* [ acc-NP ho pred ] NP(nom)  
 Mino an’i Koto ho tonga sy an’i Bema ho lasa aho.  
 AT.belive acc-Koto comp arrived and acc-Bema comp left 1sg(nom)  
 ‘I believe Koto to have arrived and Bema to have left.’
- c. V acc-[ NP *sy* NP ] ho pred NP(nom)  
 Mino an-dRabe sy Rakoto ho kinga saina aho.  
 AT.believe acc-Rabe and Rakoto comp clever mind 1sg(nom)  
 ‘I believe Rabe and Rakoto to be intelligent.’
- d. V acc-NP ho [ pred ] *sy* [ pred ] NP(nom)  
 Mino an-dRabe ho kinga saina sy malemy fanahy aho.  
 AT.believe acc-Rabe comp clever mind and soft spirit 1sg(nom)  
 ‘I believe Rabe to be intelligent and nice.’
- e. \*[ V acc-NP ] *sy* [ V acc-NP ] ho pred NP(nom)  
 \*Midera an-dRabe sy mihevitra an-dRakoto ho kinga saina aho.  
 AT.praise acc-Rabe and AT.think acc-Rakoto comp clever mind 1sg(nom)

<sup>7</sup> Zribi-Hertz and Mbolatianavalona (to appear), however, points out that with certain verbs, the third person pronoun may be locally bound.

(i) Menatra azy io ankizy io.  
 ashamed 3(acc) this child this  
 ‘This child is ashamed of himself.’

(ii) Mieritreritra azy io ankizy io.  
 AT.think-about 3(acc) this child this  
 ‘This child is thinking about himself.’

The exact range of predicates requires further investigation.

- f. [V acc-NP<sub>i</sub>] s y [V acc-pro<sub>i</sub>] ho pred NP(nom)  
 Midera an-dRabe sy mihevitra azy ho kinga saina aho.  
 AT.praise acc-Rabe and AT.think 3(acc) comp clever mind 1sg(nom)  
 'I praise Rabe and think that he is intelligent.'

Given the wide range of coordination possibilities, the data in (30) appear at first confusing. (30a) is a simple case of V° coordination. (30b) and (30c) do provide an interesting contrast: in the former both embedded NPs are obligatorily marked with accusative Case while in the latter, only the first NP bears Case marking. (30c) could therefore be NP coordination with a single dominating KP. (30b) appears to show that the embedded subject and embedded predicate together form a constituent. In other words, no raising into the matrix clause. (30d) is another case of simple predicate coordination. Finally, the contrast between (30e) and (30f) is striking. On the one hand, the ungrammaticality of (30e) is not surprising, if no raising has occurred. On the other hand, this leaves unexplained the acceptability of (30f). (30f) is also unusual in the obligatory nature of the bound reading for the pronoun.

Summing up, the above data present a mixed picture of RTO in Malagasy. At the beginning of the paper, we asked three questions. As an answer to the first, the embedded clause appears to be smaller than a CP as it does not undergo extraposition. At the same time, it must be complex enough to license voice and tense morphology on the embedded verb. The status of *ho* remains unclear. Finally, the "raised object" appears to occupy a position that is neither identical to an embedded subject nor a base-generated object. To better evaluate the data, we now turn to past and present research on RTO.

### 3. Theory

The phenomenon of RTO has been the subject of much debate in the field of linguistics. (31) gives a typical example in English.

- (31) Felix considers Hannah/her to be intelligent.

Unusual to this construction is the lack of an overt complementizer between the two clauses, the infinitival nature of the embedded clause, and the accusative Case on the embedded subject.

#### 3.1 Raising to object

Starting with Postal (1974), linguists have analysed the structure in (31) as involving raising of the embedded subject to the matrix object position, as shown in (32).

- (32) Felix considers Hannah<sub>i</sub> [ t<sub>i</sub> to be intelligent ].

Once raising has occurred, the matrix verb can assign Case to the NP *Hannah*. Such an analysis is appealing in the context of the Malagasy data, as raising is not string vacuous. In other words, a typical Malagasy example would have the structure in (33).

- (33) Manantena azy<sub>i</sub> [ ho tonga t<sub>i</sub> ] ny olona.  
 AT.hope 3(acc) comp arrive det person  
 'The people hope him to have arrived.'

Note that in neither (32) nor (33) have we labelled the brackets of the embedded clause. Determining the nature of this constituent is tangential to the issue of raising. Similarly, the structure in (33) raises the question of the nature of the position from which the pronoun *azy* 'him' has raised. Suffice it to say that at first glance, the raising analysis is attractive.

Recent work in the Minimalist program has revived the RTO analysis. The one important issue within minimalist treatment of RTO is whether raising is overt or covert and the landing site of the raised NP. Under the standard minimalist approach, the embedded subject raises to [Spec, AgrOP] after Spell-Out in English. Consider the English example in (34a) and the LF representation in (34b).

- (34) a. Felix considers Hannah to be intelligent.  
b. Felix Hannah<sub>i</sub> considers t<sub>i</sub> to be t<sub>i</sub> intelligent.

Since raising in Malagasy appears to be overt, a minimalist analysis would propose that raising to [Spec, AgrOP] occurs before Spell-Out. (See, for example, Zidani-Eroglu (1997), who argues that raising to object occurs overtly in Turkish.) Assuming the position of derived objects to dominate VP, however, is problematic for Malagasy. This can be seen more clearly when the matrix verb appears in the circumstantial voice. In this case, the agent and theme arguably remain in-situ and an adjunct or oblique is promoted to matrix subject. A mono-clausal example is given below.

- (35) [[ Anapahan-dRakoto bozaka ] ny antsy ].  
CT.cut.Rakoto(gen) grass det knife  
'The knife is used by Rakoto to cut grass.'

As shown in (36), the "raised" object *Rabe* follows the matrix verb and genitive agent.

- (36) Izao ny antony izay heverin-dRakoto an-dRabe ho adala.  
here det reason rel TT.think.Rakoto(gen) Rabe(acc) comp crazy  
'Here is the reason why Rakoto thinks Rabe is crazy.'

The word order in (36) suggests that whatever position *Rabe* has moved to, it is dominated by the matrix VP. In other words, a minimalist-type analysis is possible only if AgrOP (or the equivalent) is dominated by the matrix VP. Such a position has been proposed in Travis (1991) and subsequent work by Travis (e.g. Travis (in preparation)).

### 3.2 Exceptional Case Marking

Within Government and Binding theory (e.g. Chomsky (1981)), it has been proposed that certain verbs permit S-bar deletion or IP complementation and can thus govern the embedded subject.

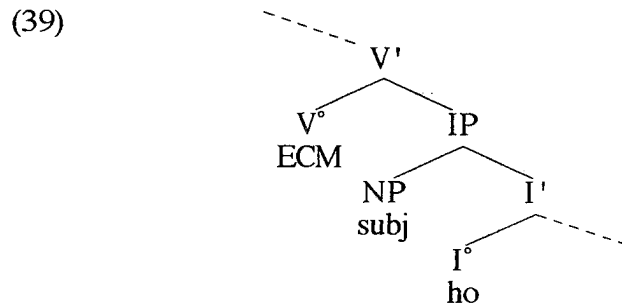
- (37) Felix considers [<sub>IP</sub> Hannah to be intelligent ].

At first glance, the Malagasy data are problematic for such an analysis: the embedded subject does not appear in the canonical subject position which is clause-final. Malagasy appears to illustrate a case of overt movement, as mentioned earlier.

- (38) a. Nihinana laisoa ny gidro.  
pst.AT.eat cabbage det lemur  
'The lemur ate cabbage.'  
b. Nilaza ny gidro ho nihinana laisoa izy.  
pst.AT.say det lemur comp pst.AT.eat cabbage 3(nom)  
'He said the lemur to have eaten cabbage.'

This can be seen by the position of *ny gidro* 'the lemur' with respect to the verb *nihinana* 'eat' in (38).

Massam (1984), however, suggests that in Malagasy, certain verbs select a special IP headed by *ho*. The verb governs and therefore Case-marks the embedded subject, which remains in [Spec, IP]. Under this analysis, *ho* is a particle in  $I^{\circ}$  which licenses exceptional external theta-role assignment to the left. [Spec, IP] therefore appears to the left rather than to the right. The relevant structure is shown below.



We note that Massam's analysis deserves reconsideration in the light of the VP-internal subject hypothesis and the proliferation of functional categories. For example, while Pearson (1998a) rejects a raising analysis, he suggests that the embedded subject in (38b) is neither in [Spec, VP] nor the standard "topic" position.

### 3.3 Small Clauses

In languages such as English, the difference between RTO (40a) and Small Clause (40b) constructions lies in the presence or absence of a copula, respectively.

- (40) a. Felix considers Hannah to be intelligent.  
 b. Felix considers Hannah intelligent.

Such a distinction cannot be made in Malagasy, which lacks a copular verb. As mentioned earlier, an analysis of the construction we are calling RTO must determine the nature of the complement clause. Could it be a SC? There are constructions in Malagasy that appear to closely resemble standard SC in English, but which differ from what we are calling RTO. A typical case is the complement to a perception verb.

- (41) Mijery [ ny namany miady ] izy.  
 AT.watch det friend.3(gen) AT.fight 3(nom)  
 'He watches his friends fight.'

The SC complement in (41) differs from RTO in the lack of any complementizer like *ho*. Moreover, the bracketed string acts like a constituent, passivizing to subject.<sup>8</sup> Of course, a complete theory of SC may posit different types, depending on the matrix verb.

Putting aside the above problems, a SC analysis of RTO is possible if we posit some functional category headed by *ho* dominating the SC. A RTO verb then selects either a CP or this functional category. One analysis along these lines for English SC is advanced in Bowers (1993). He proposes a functional head,  $Pr^{\circ}$  (for predication), which takes any lexical category as a complement. External arguments uniformly originate in [Spec,  $PrP$ ] while direct objects are generated in [Spec, VP]. Case and theta-roles are assigned via spec-head agreement following verb raising to  $Pr^{\circ}$ . For Bowers, then, *as* in (42) is an instance of  $Pr^{\circ}$ . We have indicated the relevant structure.

<sup>8</sup> See Pearson (1998a); Paul and Ranaivoson (1998) for more discussion of perception verb complements.

- (42) I regard [PrP John as [AP crazy]].

Malagasy appears to fit nicely into this analysis, if we treat *ho* as analogous to *as*; in other words, as the head of PrP.

- (43) Manantena [PrP azy ho [AP tonga]] ny olona.  
 AT.hope 3(acc) comp arrived det person  
 'The people hope him to have arrived.'

The one question that arises with Bowers' structure is the status of predicate raising in (42) and (43). Assuming external theta-role assignment to be local (as Bowers explicitly does), the embedded predicates should raise to Pr°. In both (42) and (43), however, this head is filled, by *as* and *ho*, respectively. Of course, the predicate could either adjoin to the head or raise at LF, but there is no mention of either possibility in Bowers' article. Bowers' account thus looks promising but requires further work. Moreover, it is not clear that PrP uniformly selects a lexical category. In Malagasy, the embedded predicate can be passive or have other complex morphology. Potential difficulties with this proposal thus include the presence of tense and voice morphology on the embedded predicate. Assuming a phrase structure that reflects morphology (e.g. Travis (to appear)), if we were to adopt Bowers' PrP, we would have to stipulate that it selects some category larger than a lexical category to account for complex morphology. On the other hand, once we add structure, the motivation for PrP becomes thinner. In other words, the complement to a RTO verb could simply be a TP, with *ho* as T°. TP complementation would closely resemble Massam's IP structure, mentioned earlier.

#### 4. Conclusion

We have discussed a wide range of data on RTO in Malagasy, which is a productive phenomenon and deserves further investigation. As for the structure of RTO, it is clear that the embedded clause is neither a CP nor a (perception) SC. With the current proliferation of functional categories, it should be possible to determine some in-between constituent which is selected by the raising verb. Turning now to the question of raising, data from binding and coordination suggest that the embedded subject does not raise into the matrix clause. On the other hand, it is not in its base position, either. Finally, we have no new insights into the nature of *ho*, but hope that by addressing the above issues, an answer will emerge. Much of the data needs further research, especially binding and coordination, but such a study would necessarily go far beyond the confines of this paper.

## Appendix

verbs that permit raising to object

|                                 |                            |                            |
|---------------------------------|----------------------------|----------------------------|
| miaiky - accept                 | mieritreritra - reflect    | manaiky - consent          |
| manambara - reveal              | manampo - intend           | miandry - wait             |
| manantena - hope                | mahadinika - examine       | mahafantatra - know        |
| mamaritra - limit               | mamepetra - order          | mametra - determine        |
| mamokatra - reveal              | mamongatra - reveal        | mampihahaka - spread       |
| manasohaso - mock               | maheno - hear say, sense   | mihevitra - think          |
| manitrikitrika - speak strongly | mino - believe             | maniry - desire            |
| manda - refuse                  | mahalala - recognize       | milaza - say               |
| manamarika - mark               | manamarina - verify        | manaporofa - prove         |
| mandre - hear                   | miresaka - speak           | miseho - show              |
| mahatadidy - remember           | mitana - seize             | mitandro - consider        |
| mahataratra - spy               | mitarona - ?               | mahatazana - watch         |
| miteny - announce               | mitetika - expect          | matoky - count on          |
| manombana - appreciate          | manondro - point out       | manoro - show              |
| mitory - preach                 | mitsaho - gossip           | mahatsapa - test           |
| mitsara - judge                 | mahatsiaro - remember      | mahatsikaritry - glance at |
| mahatsinjo - watch over         | mahatsipalotra - glance at | mamelabelatra - explain    |
| manazava - clarify              |                            |                            |

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## Raising from NP in Malagasy\*

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### 0. Introduction

We characterize a syntactic relation in Malagasy we call *Raising from NP* (RNP). Part I focusses on the special case of Possessor Raising (PossR). It largely conforms to Relational Grammar (RG) generalizations given in Allen et al (1990) for S. Tiwa, and is broadly consistent with the analysis in C. Rosen (1990) but not naturally reanalyzable as Benefactive complementation (Baker 1996). Part II extends the instances of RNP, in some of which the raised NP does not assume the grammatical function of the NP out of which it was raised (in violation of the Relational Succession Law of RG). Finally we note that while RNP creates complex predicates by incorporation, it is not associated with any distinctive morphology, as claimed by Donohue (1996) for PossR in general.

We illustrate the basic parameters of RNP in (1) with the case of PossR. Major constituents are bracketted. We use 'NP' rather than 'DP'; we use 'Pn' for *n place predicate phrase* – expressions that combine with n NPs to form a sentence. An NP sister to a P1 will be called its *subject*, an NP sister to a P2 its (*direct*) *object* (DO).

- |     |    |                                                                                             |   |                                                                          |
|-----|----|---------------------------------------------------------------------------------------------|---|--------------------------------------------------------------------------|
|     |    | RNP                                                                                         |   |                                                                          |
| (1) | a. | [Maty [ny vadin-dRabe]]<br>[died [the spouse-of-Rabe]]<br><i>Rabe's spouse died/is dead</i> | ⇔ | b. [[Maty vady] Rabe]<br>[[died spouse] Rabe]<br><i>Rabe was widowed</i> |

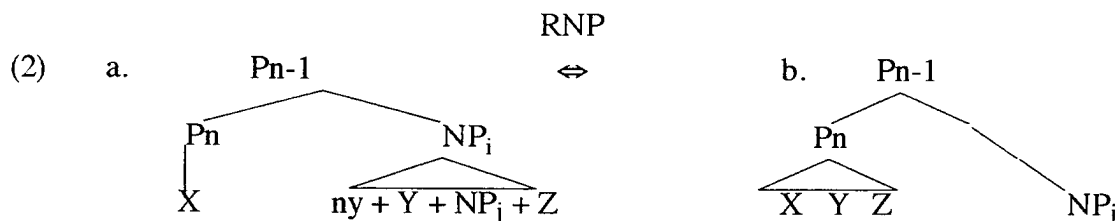
(1a) consists of an adjectival P1 *maty* 'dead/died' followed by its subject, *ny vadin-dRabe* 'the spouse of Rabe'. In (1b) the P1, *maty vady* 'died spouse', is built from *maty* incorporating the bare noun *vady* 'spouse'. Its subject is the name *Rabe*. (1b) entails (1a), whence *Rabe* in (1b) is understood as the possessor of *vady* 'spouse'. But crucially, the P1 in (1b) *essentially involves* *Rabe* whereas that in (1a) does not. It is an individual level predicate not a stage level one and as such expresses a stable property of its subject (though it may have come into existence suddenly) rather than an easily changed one. In (1b) *Rabe* is presented as affected by his spouse's death, but (1a) could be true without *Rabe* even knowing that his spouse died.

Syntactically a classical PossR transformation would derive (1b) from (1a) by stripping the subject of (1a) of its definite article *ny*, incorporating the possessive head *vady* 'spouse' into the predicate, eliminating the genitive morphology *-n-* and the consonant mutation /r/ - /dʀ/ in *Rabe*, and presenting the semantic possessor *Rabe* as sister to the derived P1. We do not defend such derivations here<sup>1</sup>, but we use the terminology they support: in the general formulation (2) of RNP, (2b) is said to be "derived", NP<sub>j</sub> in (2b) is called the "raised NP"; the Predicate X is said to "host" the raising and to "incorporate" the "remnant" Y+Z.

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<sup>1</sup> Overall we prefer to base generate P1s of the form [Adj + N], requiring that x satisfies its selectional restrictions iff x satisfies the SRs of a possessor of N and that [ny Gen(N,x)] satisfies the SRs of Adj. A stronger requirement would be that [Adj+N](x) imply Adj(ny Gen(N,x)), but this ignores the idiomacity differences in meaning.



We now consider the range of instances of RNP according to the value of  $n$  (just 1 or 2) and the syntactic nature of  $X$ ,  $Y$ , and  $Z$  and the types of  $\text{NP}_i$  and  $\text{NP}_j$  involved.

### I. Possessor Raising (PossR)

Here  $\text{NP}_j$  is the syntactic possessor of  $\text{NP}_i$ . We consider first cases in which  $n = 1$ , so  $\text{NP}_i$  is the subject of its clause and  $\text{NP}_j$  the subject after raising. In the most common case,

#### 1. P1 is Adjectival

(1), (3) and (4) are illustrative (with stress marked in (4)):

- |                                                                                                               |                                                                                            |
|---------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|
| (3) a. Marary ny zana-dRabe<br>sick the child-of-Rabe<br><i>Rabe's child is sick</i>                          | b. Marary zanaka Rabe<br>sick child Rabe<br><i>Rabe has/is afflicted with a sick child</i> |
| (4) a. Maráry ny kíboko<br>sick the belly-my<br><i>My stomach aches</i>                                       | a'. Maràry kíbo aho<br>sick belly I<br><i>I am sick in the stomach</i>                     |
| b. Róvitra ny vódin'ny hárona<br>torn the bottom-of-the basket<br><i>The bottom of the basket is torn</i>     | b'. Ròvi-bódy ny hárona<br>torn bottom the basket<br><i>The basket has a torn bottom</i>   |
| c. Téry ny trànonáy / Téry ízy<br>tight the house-our cramped it<br><i>Our house is cramped It is cramped</i> | c'. Tèry tráno ìzaháy<br>tight house we<br><i>We live in cramped quarters</i>              |
| d. Ráva ny tránony<br>destroyed the house-his<br><i>His house was destroyed</i>                               | d'. Ràva tráno izy<br>destroyed house he<br><i>He was house-wrecked</i>                    |

#### 1.1 The major constituent break

##### 1.1.1 Pronouns and particles

Pronominal sisters to P1s are drawn from the series *aho*, *ianao*, *izy*, ..., called *nominative* (possessors are drawn from the morphologically dependent series *-ko*, *-nao*, *-ny*, ..., called *genitive*). The presence of the nominative pronouns in (4a',c',d') thus supports that the preceding Adj+N is a P1. Equally the subject NPs in (4) are replaceable by nominative pronouns, as per (4c). Secondly, P1s in general are marked by rising intonation which peaks at the last main stress in the P1. This property clearly identifies the Adj+N as a P1 in the raised Ss. Further constituency tests (see Keenan 1976, 1995 and Pearson 1996) are illustrated in (5): interrogative particles are placed between the P1 and the subject, (5a). Negation plus negative polarity items frame the P1, (5b). The concessive particles *na dia ...aza* frame the P1 (5c), and only the subject NP may be relativized, (5d).

- (5) a. Marary ve ny zana-dRabe?  
sick Q the child-of-Rabe  
*Is the child of Rabe sick?*
- b. Tsy marary intsony/akory ny zana-dRabe  
not sick longer/at all the child-of-Rabe  
*Rabe's child isn't sick any longer / at all*
- c. na dia marary aza ny zana-dRabe...  
though sick even the child-of-Rabe...  
*even though the child of Rabe is sick...*
- d. ny zaza (izay) marary  
the baby (who) sick  
*the baby that is sick*

These tests show that the major constituent break in (3b) is between *zanaka* 'child' and *Rabe*, and cannot be placed between *marary* 'is sick' and *zanaka* 'child'.

- (6) a. Marary zanaka ve Rabe?  
*Does Rabe have a sick child?*
- a'. \*Marary ve zanaka Rabe
- b. Tsy marary zanaka akory Rabe  
*Rabe doesn't have a sick child at all*
- b'. \*Tsy marary akory zanaka Rabe
- c. na dia marary zanaka aza Rabe  
*although Rabe has a sick child*
- c'. \*na dia marary aza zanaka Rabe
- d. ny olona (izay) marary zanaka  
*the person (that) has a sick child*
- d'. \*ny zanaka (izay) marary Rabe  
*the child (that) Rabe has sick*

### 1.1.2 Coordination

Adj+N coordinates with other P1s, (7), supporting that they have the same category.

- (7) a. Efa fotsy volo sy antitrantitra Rabe  
already white hair and old(redup) Rabe  
*Rabe is already white haired and oldish*
- b. Sady mazoto no kinga saina izy  
both energetic and adroit mind she  
*She is both energetic and quick minded*
- c. Be sandry sady mihetraketraka Rabe  
big arms and looks+for+trouble Rabe  
*Rabe is strong and looks for trouble*
- d. Very hevitra ka miherikerika fotsiny Ranaivo  
lost thought and+so looks+around only Ranaivo  
*Ranaivo is confused and so just looks from side to side*

The second conjuncts in (7c,d) are tensed active intransitive verbs built from roots by prefixing the active *i-* and then *m-*, which varies with *n-* 'past' and *h-* 'future'.

### 1.1.3 Categorical status

The predicate formed by RNP retains the categorial status of its host. So Adj+N exhibits adjective-like behavior: it accepts modification, (8), enters comparative (9) and superlative (10) constructions, modifies nouns (11), and forms optatives (12).

- (8) a. Tena marary zanaka izy  
very sick child he  
*He is very afflicted with a sick child*
- b. Saika very vola be ianao  
almost lost money big you  
*You almost lost a lot of money*
- (9) a. Marary kokoa noho Ranaivo Rabe  
sick more than Ranaivo Rabe  
*Rabe is sicker than Ranaivo*
- b. Marary zanaka kokoa noho Ranaivo Rabe  
sick child more than Ranaivo Rabe  
*Rabe is more afflicted with a sick child than is Ranaivo*
- a'. Lehibe (kokoa) Rabe noho Ranaivo  
big emph Rabe against Ranaivo  
*Rabe is bigger than Ranaivo*
- b'. Lehibe vatana Rabe noho Ranaivo  
big trunk Rabe against Ranaivo  
*Rabe has a bigger body than Ranaivo*
- (10) Marary zanaka ny olona maro any, fa ny marary zanaka indrindra dia Rabe  
sick child the people many there, but the sick child most part. Rabe  
*Many people there have sick children, but the most afflicted with a sick child is Rabe*
- (11) a. Tsy tonga ilay olona maty vady  
not arrived that person died spouse  
*That (aforementioned) person who was widowed hasn't arrived*
- b. Manam-pahefana ireny firenena be vola ireny  
have-power those nations big money those  
*Those nations with wealth have power*
- (12) a. (?) Sóa ny dianao  
nice the trip-of-you:gen
- b. Soáva dia (ianao)!  
(You:nom) have a nice trip!

Equally, root adjectives commonly causativize with the prefix *-aha-*, creating of course a P2 (transitive verb) which takes pronouns from the *accusative* series *ahy* 'me', *anao* 'you', *azy* 'him,her,it,them', ...as arguments. E.g. *finaritra* 'is pleasing', *mahafinaritra* 'makes pleasing'; *tsara* 'good', *mahatsara* 'renders good', etc.

- (13) a. Gaga aho  
surprised I:nom  
*I am surprised*
- b. Mahagaga ahy izany  
surprises me:acc that  
*That surprises me*

And we find that P1s of the form [Adj + N] also causativize with *-aha-*; other prefixes, such as *amp-*, are used to causativize verbal P1s:

- (14) a. Ratsy ny fanahiny  
bad the spirit-his:gen  
*His character is bad*
- b. Ratsy fanahy izy  
bad spirit he:nom  
*He has a bad character*
- c. ny namany ihany no naha-ratsy fanahy azy  
the friends-his only foc past+cause-bad spirit him:acc  
*It was just his friends who made him mean spirited*

Of course the causative of the P1 *ratsy fanahy* 'bad spirit/character' is transitive so its argument is accusative as per (14c).

## 1.2 *Incorporation of the remnant.*

By *incorporation* we intend that (1) the remnant forms a tight constituent with the host predicate, and (2) the derived predicate has the same categorial status as its host, and so presents the range of syntactic and morphological behavior associated with that category. This is what we just showed in 1.1.3 for adjectival hosts. Below we support (1). We note that while incorporation in Malagasy does not involve inserting material properly within the verbal morphology, our usage is consistent with that in S. Rosen (1989) and Mithun (1984) who classify types of Incorporation across Ls.

But, like object incorporation into transitive verbs in Malagasy, possessive head incorporation into P1s is quite different from the noun incorporation in Mohawk (Baker 1996). Malagasy has no verb agreement with arguments, so argument incorporation is not motivated by the Morphological Visibility Condition. Nor are incorporated Ns "referentially active" in Malagasy. They cannot be definite and do not antecede pronouns. We note:

(15) Possessive head incorporees are always indefinite/generic (à la différence de Mohawk)

- |                                               |                                              |
|-----------------------------------------------|----------------------------------------------|
| a. *Maty ny vady Rabe<br>dead the spouse Rabe | b. *Maty azy ireo Rabe<br>dead 3:acc.pl Rabe |
|-----------------------------------------------|----------------------------------------------|

(16) Incorporees do not naturally antecede pronouns or empty categories.

- |                                                                                                                             |
|-----------------------------------------------------------------------------------------------------------------------------|
| a. Maty ny vadin-dRabe. Efa antitrantitra (izy) (izy, Ø = Rabe's spouse)<br><i>Rabe's spouse died. already oldish (she)</i> |
| b. ?*Maty vady Rabe. Efa antitrantitra (izy).<br><i>Rabe was widowed. already oldish (she)</i>                              |

In (16b) it is not natural to interpret the gap or the pronoun *izy* '3:nom' as referring to Rabe's spouse; only *Rabe* is a natural antecedent despite its pragmatic unnaturalness.

(17) Incorporees may not strand quantifiers or modifiers:

- |                                                                                                                                                                        |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| a. Marary ny zana-dRabe sasantsasany/rehetra/lehibe indrindra<br>sick the child-Rabe:gen some/all/biggest<br><i>Some/all/the eldest of Rabe's children are/is sick</i> |
| b. *Marary zanaka Rabe sasantsasany/rehetra/lehibe indrindra<br>sick child Rabe:nom some/all/biggest                                                                   |

We consider now some ways in which the remnant is tightly bound to its predicate host.

### 1.2.1 *Stress reduction*

The derived Pn is a prosodic word (in the simplest case). The P1 [Adj+N] reduces main stress on the Adj to secondary (noted `), with the effect that [Adj+N] has the stress pattern of a prosodic word: a single main stress (noted ^), occurring finally, inherited from the remnant. This pattern is noted in (4).

### 1.2.2 *Adverb placement*

Adverbs cannot separate Adj + N.

- (18) a. Madio lalandava ny akanjon-dRabe  
clean always the clothes-of-Rabe  
*Rabe's clothes are always clean*
- b. Madio akanjo lalandava Rabe  
clean clothes always Rabe  
*Rabe always dresses clean*
- c. \*Madio lalandava akanjo Rabe  
clean always clothes Rabe
- (19) a. Maty tampoka ny vadin-dRabe  
died suddenly the spouse-of-Rabe  
*Rabe's spouse died suddenly*
- b. Maty vady tampoka Rabe  
died spouse suddenly Rabe  
*Rabe was suddenly widowed*
- c. \*Maty tampoka vady Rabe  
died suddenly spouse Rabe
- (20) a. Fotsy tokoa ny nifiny  
white especially the teeth-her  
*Her teeth are especially white*
- b. Fotsy nify tokoa izy  
white teeth especially she  
*She really has white teeth*
- b'. \*Fotsy tokoa nify izy  
white especially teeth she

### 1.2.3 Phonological bonding

The phonological bonding between Adj+N and P2+ bare DO is the same. The final syllables *-na*, *-ka-*, and *-tra* of hosts drop and an initial continuant of the following word mutates to the corresponding non-continuant. See Keenan & Razafimamonjy 1996 for a detailed presentation. (21) illustrates Bonding with DOs of transitive verbs.

- (21) a. Manana vola izy                   ⇒   Manam-bola izy  
has money she
- b. Mangalatra fary izy               ⇒   Mangala-pary izy  
steals sugar-cane he
- c. Mandatsaka vato izy               ⇒   Mandatsa-bato izy  
drops stones (= votes) he

(22) is one case of possessive head bonding. Some others are (4b), (35b), and (69b).

- (22) a. Tapaka ny fe+ny               ⇒   Tapa-pe izy  
broken the leg+his               broken-leg he  
*His leg is broken*               *He has a broken leg*
- b. Tsotra ny fiaina+ny               ⇒   Tso-piaina izy  
simple the life+his               simple-life he  
*His life is simple*               *He has a simple life*

Bonding is basically obligatory between P1s and possessive heads; less so for DOs and P2s. Phonological bonding occurs in other contexts (e.g. reduplication) but not between a P1 of any sort and its subject: "Rabe is kneeling" = *Mandohalika Rabe*, \**Mandohali-dRabe*.

### 1.2.4 Nominalizations

Nominalizing Adj+N predicates arises in two ways, and both are remarkable in that possessors/agents of the nominalized predicates occur outside the incorporated material (which seems natural but which is in fact unusual in the Malagasy context).

Circumstantial forms of verbs are built from active ones by suffixing active verbs and shifting stress rightward. They are used (Keenan 1995) when an oblique is presented as subject. (23b) illustrates this with a Benefactive subject. (24b) is the *f*-nominalization.

- (23) a. *n+i+vidy akanjo ho an'ny ankizy Rasoa*  
 past+act+buy clothes for'the children Rasoa:nom  
*Rasoa buys clothes for the children*
- b. *n+ividi+anan-dRasoa akanjo ny ankizy*  
 past+buy+circ-Rasoa:gen clothes the children:nom  
*The children are bought clothes for by Rasoa*
- c. *ny fividianan-dRasoa akanjo*  
 the nom+buy+circ-Rasoa:gen clothes  
*Rasoa's clothes buying*

In (23b,c) the Agent phrase *Rasoa* is bound as a genitive complement of *nividianana*. *akanjo* 'clothes' is accusative in all three examples. The bare DO *akanjo* is arguably incorporated into the predicate in (23a). Adverbs, PPs or other accusative objects cannot separate it from the P2. But in non-active forms, such as passives and circumstantials, the Agent Phrase "n-bonds" as a genitive complement (See Paul 1996 for details) of the verb, separating the verb and its accusative complement. This is even true when the P2 + bare DO is idiomatic, as shown in (24), where *baraka* is a borrowing and essentially only occurs with verbs built from the root *ala*, and (25), where *mitsongo dia* 'lit: pinch step' is a pure idiom meaning 'spies on'.

- (24) a. *Manala baraka an'i Soa i Vao*  
 remove:act honor acc'art Soa art Vao  
*Vao dishonors Soa*
- b. *Alan'i Vao baraka i Soa*  
 remove:pass-art Vao:gen honor art Soa  
*Soa is dishonored by Vao*
- c. *Mahamenatra ny fanalan'i Vao baraka azy*  
 causes-shame the removal-art Vao:gen honor her:acc  
*Vao's dishonoring her is shameful*
- (25) a. *Mitsonga dia an'i Soa Rakoto*  
 pinch:act step acc'art Soa Rakoto  
*Rakoto spies on Soa*
- b. *Tsongoin-dRakoto dia i Soa*  
 pinch:pass-Rakoto:gen step art Soa  
*Soa is spied on by Rabe*
- c. *Lasa lavitra ny f+itsongoan-dRakoto dia an'i Soa*  
 goes far the nom+pinch:circ-Rakoto:gen step acc'art Soa  
*Rakoto's spying on Soa is extensive*

In contrast, the possessor of nominalizations of the circumstantial forms of causative verbs built from predicates that hosted RNP occurs obligatorily exterior to the incorporated possessive noun.<sup>2</sup> NB:

<sup>2</sup> Note that hyphens are present in standard Malagasy orthography; + is not, but is used by us to indicate morpheme boundaries.



- (26) a. Kinga ny sain-dRaso  
adroit the mind-Raso:gen  
*Raso's mind is adroit*
- b. Kinga saina Raso  
adroit mind Raso  
*Raso is quick thinking*
- c. ny f+aha+kingan-tsaina  
the nom+cause-adroit-mind  
*quick thinkingness*
- d. ny fahakingan-tsain-dRaso  
the nom+cause+adroit-mind-Raso:gen  
*Raso's mental agility*
- e. \*ny fahakingan-dRaso saina  
the nom+cause+adroit-Raso:gen mind  
*Raso's mental agility*

(27a) is taken from a recent newspaper article. Note that demonstratives frame the nominals they determine.

- (27) a. izany fahakingan-tana+ny dia fahakingan-tsai+ny izany...  
that adroitness-hand+his and adroitness-mind+his that ...  
*his manual and mental adroitness* (at playing cards)
- b. Ny f+aha-ratsi+am-panahi+n-dRabe no naha+faty azy  
the nom+cause-bad+circ-spirit+gen-Rabe foc made+dead 3:acc  
*It was Rabe's badness of character which killed him*

A second case concerns adjectival nominalizations formed from *ha...ana*:

- (28) a. tsára 'good' ⇒ hatsarána 'goodness, beauty'
- b. rátsy 'bad' ⇒ haratsíana 'badness'
- c. (ma)ránitra 'sharp' ⇒ haranítana 'sharpness'

And when *ha...ana* applies to adjectives of the form Adj+N, possessors of the resulting nominal go outside the incorporated possessive head:

- (29) a. Tsara tarehy i Soa  
good face art Soa  
*Soa is pretty*
- b. ny hatsaran-tarehin'i Soa  
the good+ness-face'art Soa:gen  
*Soa's beauty*
- b'. \*ny hatsaran'i Soa tarehy  
the good+ness'art Soa:gen face
- c. Voafidy i Soa noho ny hatsaran-tarehi+ny  
chosen art Soa because-of the good+ness-face+her  
*Soa was chosen because of her good looks*
- (30) a. Ratsy fanahy Rabe  
bad spirit Rabe  
*Rabe has a bad character*
- b. Iaraha-mahalala ny haratsiam-panahin-dRabe / \*haratsian-dRabe fanahy  
all-know the bad+ness-spirit-gen-Rabe  
*We all know Rabe's bad character*

- (31) a. Marani-tsaina (< maranitra + saina) Rabe  
sharp-mind Rabe  
*Rabe is sharp minded*
- b. Fatratra ny harani-tsain-dRabe / \*harani-dRabe saina  
extreme the sharp+ness-mind-Rabe:gen / \*sharp+ness-Rabe:gen mind  
*Rabe's intelligence is exceptional*

Positioning the possessor outside the incorporated noun is strong evidence that the incorporated noun forms a tight unit with the host predicate<sup>3</sup>.

### 1.2.5 The syntactic complexity of the incorporated remnant

Incorporated remnants in our examples have all been single lexical items. But they may accept a limited amount of modification as long as they preserve the stage level character of the derived predicate, which argues that Adj+Remnant P1s are not merely complex lexical items (as per S. Rosen 1989). In fact in (32d) the modifier itself is derived by RNP.

- (32) a. Maty zanaka hendry Rabe  
died child well-behaved Rabe  
*Rabe suffers the death of his well behaved child*
- b. Marary zana-dehibe ve Rabe?  
sick child-big Rabe  
*Is Rabe is afflicted by the illness of his eldest child?*
- c. Very kirarao mafy toto Rabe  
lost shoes strong pounding Rabe  
*Rabe suffers the loss of his force-withstanding shoes*
- d. Maty vady tsara fanahy Rabe  
died spouse good spirit Rabe  
*Rabe suffered the loss of his nice characterized wife*

On the other hand the host Adj (*maty*, *marary*, etc.) does seem to be limited to (possibly tensed marked) lexical items. One might attempt to say that e.g. in (19a) the P1 *maty tampoka* 'died suddenly' hosts the raising and the noun *vady* 'spouse' moves across the adverb. But this would leave a subtle semantic difference between (19a,b) unaccounted for. The difference is clearer replacing *tampoka* 'suddenly' with *indroa* 'two times'. Then (19a) suggests, implausibly, that Rabe's spouse died twice, whereas (19b) just says, plausibly, that Rabe was widowed twice. Even coordination of acceptable adjectival hosts is unnatural:

---

<sup>3</sup> And we note that there are a few cases of object incorporation into P2s that have become lexicalized and also present the possessor outside the incorporated noun (b), even when the non-nominalized, less idiomatic, form still has the Agent intervene (c):

- |    |                                                                                         |    |                                                                                                                  |
|----|-----------------------------------------------------------------------------------------|----|------------------------------------------------------------------------------------------------------------------|
| a. | Mamindra fo aminao Rabe<br>moves heart to+you:gen Rabe<br><i>Rabe takes pity on you</i> | b. | ny famindram-pon-dRabe aminao<br>the nom+move+circ-heart-Rabe:gen to+you<br><i>Rabe's compassion towards you</i> |
| c. | Amindra+ny fo ianao<br>move:circ+3:gen hear you:nom<br><i>You are pitied by him</i>     |    |                                                                                                                  |

- (33) a. Fotsy nify izy                      b. Kely nify izy                      c. \*?Fotsy sy kely nify izy  
       white tooth he                      small tooth he                      white and small tooth he  
       *He has white teeth*                      *He is small toothed*                      *He is white and small toothed*

### 1.3 Semantic aspects of Raising from NP

#### 1.3.1 The possessive head

The possessive head is often a relational noun - one that expresses a relation between objects rather than just a property of objects. Body parts and kin terms are common, but more abstract function nouns are not uncommon (34a-c), and non-relational Ns denoting commonly possessed things are also common, (34d,e).

- (34) a. Tsara endrika Rasoa                      a'. Tsara ny endri-dRasoa  
       good appearance Rasoa                      good the appearance-of-Rasoa  
       *Rasoa is pretty*                      *Rasoa's appearance is good*
- b. Saro-drafitra io fehezan-teny io                      b'. Sarotra ny rafitr'io fehezan-teny io  
       difficult-structure this sentence this                      difficult the structure-of-this sentence this  
       *This sentence has a difficult structure*                      *The structure of this sentence is difficult*
- c. Lava anarana ity fanafody ity                      c'. Lava ny anaran'ity fanafody ity  
       long name this medicine this                      long the name-of-this medicine this  
       *This medicine has a long name*                      *The name of this medicine is long*
- d. Madio akanjo Rabe                      d'. Madio ny akanjon-dRabe  
       clean clothes Rabe                      clean the clothes-of-Rabe  
       *Rabe dresses cleanly*                      *Rabe's clothes are clean*
- e. Be vola ity firenena ity                      e'. Be ny volan'ity firenena ity  
       big money this nation this                      big the money-of-this nation this  
       *This nation is wealthy*                      *The money of this nation is a lot*

#### 1.3.2 The possessor

The raised possessor may be human, inanimate (35a), abstract (35b), even mass, (35c):

- (35) a. Vaky kodiarana ny fiara                      a'. Vaky ny kodiaran'ny fiara  
       broken wheel the car                      broken the wheel-of-the car  
       *The car has a flat tire*                      *The wheel of the car is broken*
- b. Nihen-danja ny fahaizan-dRabe                      b'. Nihena ny lanjan'ny fahaizan-dRabe  
       decreased-weight the knowledge of R                      decreased the weight-of-the knowledge-of R  
       *Rabe's knowledge diminished in quality*                      *The quality of Rabe's knowledge decreased*
- c. Mitovy endrika ny rano sy ny toaka                      c'. Mitovy ny endrin'ny rano sy ny toaka  
       same form-the water and the rum                      same-the form-of-the water and the rum  
       *Water and rum look the same*                      *The appearance of water and rum is the same*

#### 1.3.3 Stage vs individual level predicates

The derived predicate is individual level, expressing a stable property of the derived subject, which explains the judgments in (36), whose predicates are stage level.

- (36) a. Tezitra/Vizaka ny zana-dRabe  
angry/tired the child-of-Rabe  
*Rabe's child is angry/tired*
- b. \*Tezitra/\*Vizaka zanaka Rabe  
angry/tired child Rabe  
*Rabe has an angry/tired child*

Subjects of the derived P1s are usually interpreted as "implicated" or "involved" in the state expressed by the P1. In some cases this overrides stability or permanence of the P1 property, as in (4a') *Marary kibo aho* 'I'm sick in the stomach'.

#### 1.3.4 Benefactive vs malefactive

The raised NP is not necessarily benefactive or malefactive (contra the analysis of C.Rosen/Baker for S. Tiwa). Stability may outrank affectedness.

- (37) a. Roa ny lelan'ny antsipikany  
two the blades-of'the pocket-knife-his  
*The blades of his pocket knife number two*
- a'. Roa lela ny antsipikany  
two blade the pocket-knife-his  
*His pocket knife is two bladed*
- b. Maro ny karazan'ny trano eto  
many the types-of-the houses here  
*The types of houses here are numerous*
- b'. Maro karazana ny trano eto  
many types the houses here  
*The houses here are of many types*
- c. Samihafa ny endrik'izy ireny  
diverse the appearance-of'3 dem+pl  
*Their appearances are diverse*
- c'. Samihafa endrika izy ireny  
diverse appearance 3 dem+pl  
*They look different*

(37c) is a simple matter of fact; (37c') is more of a judgment and awareness of perception on the part of the speaker. The predicates in these expressions are not activity predicates, and the subjects of the RNP Ss are in no sense Benefactive or Malefactive. And recall, (23a), that in apparent distinction to S. Tiwa, Malagasy does have a benefactive preposition *ho an-* (often written *hoan-*) and a grammatically regular way of presenting such NPs as subjects, (23b).

#### 1.3.5 Semantic shift

Many common predicates derived by PossR have an idiomatic meaning, whereas the expressions with possessive NP subjects have a literal meaning, more restricted in application, and occasionally even ungrammatical:

- (38) a. Tsara ny tarehi+ny / fo+ny / fanahi+ny  
good the face+her / heart+his / mind+his  
*Her face is good/pretty*  
*Her heart is good*  
*His spirit/mind is good*
- a'. Tsara tarehy / fo / fanahy izy  
good face / heart / spirit s/he  
*She/He/It is pretty*  
*She is good hearted*  
*He is a nice guy*
- b. Maranitra ny maso+ny / ny sai+ny  
sharp the eyes+his / the mind+his  
*His eyes are sharp / His mind is sharp*
- b'. Marani-maso/tsaina izy  
sharp-eye / mind he  
*He is sharp eyed / He is sharp*
- c. ??Mafy ny rafitry ny sezanao  
strong the structure-of-the chair-your  
*The structure of your chair is strong*
- c'. Mafy rafitra ny sezanao  
strong structure the chair-your  
*Your chair is well built*
- d. Lava ny tongo+ny  
long the feet+his  
*His feet are long*
- d'. Lava tongotra izy  
long feet he  
*He is always on the move*

- |                                                                                          |                                                                                                             |
|------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| e. Fotsy ny varavaran'i Soa<br>White the door-of'art Soa<br><i>Soa's door is white</i>   | e'. Fotsy varavarana i Soa<br>white door art Soa<br><i>Soa is never at home</i>                             |
| f. *Mafy ny toton'ity kirarao ity<br>hard the pounding-of-this shoe this<br>(no meaning) | f'. Mafy toto ity kirarao ity<br>hard pounding this shoe this<br><i>These shoes can take a lot of abuse</i> |

The PossR predicates above are all natural and express stable properties. Their putative sources on the left are less natural and differ from them in meaning. (38a) and (38a') differ in meaning as do *John's heart is good* and *John is good hearted*. Moreover something can be pretty (*tsara tarehy*) without having a face. (38c) is unclear in meaning; (38d') does not mean that he has long feet, nor does (38e') mean that Soa's door is white. (38f) is nonsensical.

## 2. P1 is non-adjectival

### 2.1 P1 = intransitive active verbs (IAVs)

- |                                                                                                                            |                                                                                      |
|----------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| (39) a. ?Miasa ny lohan-dRasoa<br>works the head-of-Rasoa<br><i>Rasoa's head is doing work</i>                             | a'. Miasa loha Rasoa<br>works head Rasoa<br><i>Rasoa is preoccupied</i>              |
| b. Miridiridy ny fihetsikin'i Be<br>is+rigid the movements-of'art Be<br><i>Be's movements are rigid</i> (Rabenilaina 1991) | b'. Miridiridy fihetsika i Be<br>is+rigid movement art Be<br><i>Be moves rigidly</i> |

These cases are less common than ones with adjectival hosts. Our consultants split on the acceptability of (40b), whereas the nearly synonymous (4d') with an adjectival host is fine.

- |                                                                                             |                                                                                           |
|---------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| (40) a. N+i+anjera ny trano+ny<br>past+act+fall the house+his<br><i>His house collapsed</i> | b. ??Nianjera trano izy<br>past+act+fall house he<br><i>He underwent house collapsing</i> |
|---------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|

In general the battery of properties exhibited for RNP predicates with adjectival hosts apply to ones with IAV hosts as well. We note just a few cases.

#### 2.1.1 Constituency

The constituency tests employed for adjectival predicates carry over directly: Question Particle Placement (41), Adverb Placement (42) and Coordination (43).

- |                                                                                                                                  |                                                            |
|----------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|
| (41) a. Miasa loha ve Rasoa?<br>works head Qu Rasoa<br><i>Is Rasoa preoccupied?</i>                                              | b. *Miasa ve loha Rasoa?<br>works Qu head Rasoa            |
| (42) a. Miasa loha lalandava Rasoa<br>works head always Rasoa<br><i>Rasoa is always preoccupied</i>                              | b. -*Miasa lalandava loha Rasoa<br>works always head Rasoa |
| (43) Miasa loha sady mifoka loatra i Soa<br>works head and smokes much art Soa<br><i>Soa is preoccupied and is smoking a lot</i> |                                                            |

### 2.1.2 Restrictions on P1

Verbs expressing temporary or accidental properties do not host RNP

- (44) a. Mihomehy ny zana-dRabe  
is+laughing the child-of-Rabe  
*Rabe's child is laughing*
- a'. \*Mihomehy zanaka Rabe  
is+laughing child Rabe

### 2.1.3 Semantic shift

The source of RNP Ss may be idiomatic or ungrammatical

- (45) a. Mikaon-doha ny mpivory  
join-heads the attendees  
*The attendees reflected together*
- b. \*Mikaona ny lohan'ny mpivory  
join the heads-of'the attendees

### 2.1.4 Categorical status

IAV+N behaves like active intransitive verbs: they have circumstantial forms, (46), and form imperatives, (47):

- (46) a. Inona no antony niasan-dRaso loha?  
what foc reason work+circ+gen-Raso head  
*For what reason was Rasoa preoccupied?*
- b. Malahelo i Be noho ny firidiridiany fihetsika  
sad art Be because-of the rigidity-her (of) movement  
*Be is sad because of her rigidity of movement* (Rabenilaina 1991)
- (47) a. Mijáiko famindra Rasoa  
is cautious manner-of-walking Rasoa  
*Rasoa is walking on eggs*
- b. Mijaikóá famindra (ianao)!  
cautious (imp) manner of walking (you)  
*Walk gingerly*

### 2.2 P2 is an (agented) passive verbs

- (48) a. Hetezan-dRabe ny volon-janany  
cut+by-Rabe the hair-of-child+his  
*The hair of Rabe's child is cut by him*
- a'. Hetezan-dRabe volo ny zanany  
cut+by-Rabe hair the child+his  
*Rabe's child has his hair cut by him*
- b. Didin'ny dokotera ny nonon'i Soa  
cut+by'the doctor the breast-of'art Soa  
*Soa's breast was cut by the doctor*
- b'. Didin'ny dokotera nona i Soa  
cut+by'the doctor breast art Soa  
*Soa had her breast cut by the doctor*

Note that (48b) expresses a specific event, but one that does determine a stable property of the derive subject *Soa*. We see shortly that RNP from DOs also has this interpretative possibility, one that is not natural for Adj-or IAV hosts. Agentless passives also host RNP, but passives are most usually agented ((Keenan & Manorohanta 1998) for text counts).

- (49) a. Mangana ny tongo-dRabe  
blue+pass the foot-Rabe:gen  
*Rabe's foot was bruised (by s.th./s.o.)*
- b. Mangan-tongotra Rabe  
blue+pass-foot Rabe:nom  
*Rabe got a bruised foot*

Again the constituency tests used previously apply: Question Particle Placement in (50), Adverb Placement (51,52), Coordination (53).

- (50) Tadidin'ny olona tarehy ve izy?  
recalled-by-the people face Qu he  
*Was he recognized by the people (by his face)?*
- (51) a. Ho tsaroan'ny olona anarana mandrakariva izy  
fut remembered-by'the people name always he  
*He will always have his name remembered by the people*
- b. \*Ho tsaroan'ny olona mandrakariva anarana izy  
fut remembered-by'the people always name he
- (52) a. Tadidin'ny olona tarehy avy hatrany izy  
remembered-by'the people face immediately he  
*He was immediately recognized by the people*
- a'. \*Tadidin'ny olona avy hatrany tarehy izy  
remembered-by'the people immediately fact he
- b. Soloan-dRaso lamba haingana ny zanany  
replaced-by-Raso clothes quickly the child-her  
*Raso's child had its clothes changed quickly by her*
- b'. \*Soloan-dRaso haingana lamba ny zanany  
replaced-by-Raso quickly clothes the child-her
- (53) a. Nororitin'i Vao volo sy notsongoiny i Soa  
pulled+out-by'art Vao hair and pinched-by-her art Soa  
*Soa had her hair pulled out by Vao and was pinched by her*
- b. Notsaboin'ilay dokotera nify ka nitomany i Soa  
was+treated-by'that doctor tooth and+so cried art Soa  
*Soa had her teeth treated by that doctor and cried*

Finally, passive hosts form imperatives in the usual way for passives:

- (54) a. Didio ny nonon'i Soa  
be-cut (by you) the breast'art Soa:gen
- a'. Didio nono i Soa  
Be-cut (by you) breast art Soa
- b. Soloy ny lamban'ilay zazakely  
be-changed (by you) the clothes'of that baby
- b'. Soloy lamba ilay zazakely  
be-changed (by you) clothes that baby

We see in 3 that RNP also applies to DOs of transitive verbs. We consider there the merits of deriving the passives above from their active counterparts.

### 2.3 *PI is an adverb*

(55b,b') illustrate the incorporation of a nominalized IAV into an adverb. These expressions are very natural, and stand in the PossR relation to the much less natural (55c,c').

- (55) a. m+i+tranga matetika izany  
pres+act+happen often that  
*That happens often*
- b. matetika f+i+tranga (mateti-pitranga) izany  
often nom+act+happen that:nom  
*That's a frequent happening*

- c. Matetika ny f+itranga+n+izany (fitrangan'izany)  
often the nom+ happen+gen+that  
*That's taking place is frequent*
- a'. m+aN+leha (mandeha) miadana ny fiara / Rasoa  
pres+act+go slowly the car/Rasoa  
*The car/Rasoa is going slowly*
- b'. miadana f+aN+leha (miadam-pandeha) ny fiara / Rasoa  
slow nom+act+go the car/Rasoa  
*The car/Rasoa goes slow*
- c'. miadana ny fandeha+n'ny fiara / ny fandeha+n-dRasoa  
slow the going+gen'the car / the going+gen-Rasoa  
*Rasoa's / the car's habitual manner of going is slow*

They further illustrate that the incorporee may be morphologically complex, containing at least the nominalizer *f-* and the active prefixes *-i-* and *-aN-*, also seen in (22).

Crucial to claim that RNP applies to the c-Ss is that the adverbs in question be able to occur as predicates. This is in fact the case: adverbs which do not occur as predicates do not host RNP, (56) - (58), nor do ones that do not take *f-* nominalized verbs as arguments, (59).

- (56) a. Miteny tokoa izy                      b. \*Tokoa fiteny izy                      c. \*Tokoa ny fiteniny  
speaks really he                      really nom+ speak he                      really the speaking+his  
*He really speaks*
- (57) a. Miteniteny foana izy  
speak(redup) always/in vain he
- b. \*Foa-piteniteny izy                      c. \*Foana ny fiteniteniny  
always/in vain nom+speaks he                      always/in vain the speaking-his
- (58) a. m+ifamp+i+resaka isan-andro Rabe sy Rakoto  
pres+rec+act+conversation every-day Rabe and Rakoto  
*Rabe and Rakoto talke with each other every day*
- b. \*Isan-andro f+ifampiresaka Rabe sy Rakoto  
every-day nom-rec-talk Rabe and Rakoto
- c. \*Isan-andro ny f+ifampiresa-dRabe sy Rakoto  
every-day the nom+rec-talk-Rabe and Rakoto[gen]
- (59) a. mipetraka ao an-trano i Koto                      b. \*Ao an-trano f+ipetraka i Koto  
is-sitting there in-house art Koto                      there in-house nom+set art Koto  
*Koto sits/is sitting in the house*
- c. \*Ao an-trano ny fipetrak'i Koto                      d. Ao an-trano i Koto  
there in-house the sitting-of'art Koto                      there in-house art Koto  
*Koto is in the house*

### 3. P2's which host RNP.

Here the raised possessor behaves as a DO of the derived P2. Such instances of RNP are less readily accepted than raising from subjects of P1s. We give many examples, all accepted by at



least two speakers, to guarantee that we are not mistaking a few idioms for a regularity.

- |      |                                                                                                                                        |                                                                                                               |
|------|----------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
| (60) | a. Manety ny volon-jana+ny Rabe<br>cut the hair-of-child+his Rabe<br><i>Rabe cut the hair of his child</i>                             | a'. Manety volo an-janany Rabe<br>cut hair acc-child+his Rabe<br><i>Rabe hair-cut his child</i>               |
|      | b. Manala ny fatoran'ny gadra Rabe<br>removed the bonds-of-the prisoner Rabe<br><i>Rabe removed the bonds of the prisoner</i>          | b'. Manala fatorana ny gadra Rabe<br>removed bonds the prisoner Rabe<br><i>Rabe bond-removed the prisoner</i> |
|      | c. Mandidy ny nonon'i Soa ny dokotera<br>cuts the breast-of'art Soa the doctor<br><i>The doctor cuts the breast of Soa</i>             | c'. Mandidy nono an'i Soa izy<br>cuts breast acc'art Soa he<br><i>He breast-cuts Soa</i>                      |
|      | d. Nanongotra ny nifin'i Soa ny reni+ny<br>pulled+out the tooth-of'art Soa the mother+her<br><i>Soa's mother pulled out her tooth</i>  | d'. Nanongotra nify an'i Soa izy<br>pulled+out tooth acc'art Soa she<br><i>She extracted a tooth from Soa</i> |
|      | e. Manolo ny lamban'ny zana+ny Rasoa<br>change the clothes-of'the child+her Rasoa<br><i>Rasoa is changing the clothes of her child</i> | e'. Manolo lamba azy Rasoa<br>change clothes him Rasoa<br><i>Rasoa is clothes-changing him</i>                |
|      | f. Mahatadidy ny tarehi+ny i Vao<br>remember the face+his art Vao<br><i>Vao remembers his face</i>                                     | f'. ?Mahatadidy tarehy azy i Vao<br>remember face him art Vao<br><i>Vao face-remembers him</i>                |
|      | g. Mampiasa ny lohako ity raharaha ity<br>make+work the head-my this matter this<br><i>This matter makes me think</i>                  | g'. Mampiasa loha ahy iny<br>make+work head me that<br><i>That gets me thinking</i>                           |

The same constituency tests as used previously apply: Question particles (61), Adverb Placement (62, 63), Coordination with clear P2s (64).

- |      |                                                                                                                                                   |                                                                          |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|
| (61) | a. Manolo lamba azy ve Rasoa?<br>change clothes him ? Rasoa<br><i>Did Rasoa change his clothes?</i>                                               | b. *Manolo ve lamba azy Rasoa?<br>change ? clothes him Rasoa             |
| (62) | a. Nanolo lamba azy haingana Rasoa<br>changed clothes him quickly Rasoa<br><i>Rasoa changed his clothes quickly</i>                               | b. *Nanolo haingana lamba azy Rasoa<br>changed quickly clothes him Rasoa |
| (63) | a. Nanendaka an-keriny ny akanjon-dRabe Rasoa<br>tore+off by+force the clothes-of-Rabe Rasoa<br><i>Rasoa tore off Rabe's clothes by force</i>     |                                                                          |
|      | b. Nanendaka akanjo an-keriny an-dRabe Rasoa<br>tore+off clothes by-force acc-Rabe Rasoa<br><i>Rasoa did clothes tearing off to Rabe by force</i> |                                                                          |
|      | c. *Nanendaka an-keriny akanjo an-dRabe Rasoa<br>tore+off by-force clothes acc-Rabe Rasoa                                                         |                                                                          |

- (64) a. Sady nanety volo no nanasa mafy an'i Koto Rasoa  
both cut hair and washed hard acc'art Koto Rasoa  
*Rasoa both hair-cut and washed hard Koto*
- b. Sady tsy niarahaba no tsy nahatadidy anarana azy aho  
both not greeted and remembered name him I  
*I both didn't greet and didn't name-remember him*  
(= I didn't greet him and didn't remember his name)
- c. Nandrori-bolo sy nanongo an'i Soa i Vao  
pulled+out-hair and pinched acc'art Soa art Vao  
*Vao pulled out Soa's hair and pinched her*

And some P2+Ns created by PossR are interpreted idiomatically and do not have a grammatical source or else differ in meaning considerably from that source:

- (65) a. Mitaingim-bozona ny mpiasa ny tale  
mount-neck the workers the director  
*The director oppresses the workers*
- a'. \*Mitaingina ny vozon'ny mpiasa izy  
mount the neck-of the workers he
- b. Manala baraka azy ny hava+ny  
remove honor him the relatives+his  
*His relatives dishonored him*
- a'. \*Manala ny baraka+ny ny hava+ny  
remove the honor+his the relatives+his

Finally, P2+N have properties of basic P2s, transitive verbs (TVs): they combine with accusative NPs to make P1s, (60); they coordinate with lexical P2s, (64), and for some but not all speakers they form imperatives, (66).

- (66) a. Manoló+a ny lamban'ny zanak+ao!  
change+imp the clothes-of the child+your  
*Change your child's clothes!*
- a'. ?Manolóa lamba azy!  
change+imp clothes him:acc  
*Change him!*
- b. Mikapá ny ranjon-dRabe!  
break the legs-gen-Rabe  
*Break Rabe's legs*
- b. ?Mikapá ranjo an-dRabe!  
Break legs acc-Rabe  
*Break him the legs*

Also if we take passivization as basic TV behavior then we see that RNP derived P2s passivize, just as TV+N idioms do (25a,b). Thus the passive corresponding to (60d') is (67a) and that corresponding to (60f') is (67b).

- (67) a. N+ongot+an'ny reniny nify i Soa  
past+extract+pass the mother-her:gen tooth art Soa:nom  
*Soa had her tooth extracted by her mother*
- b. Tadidi+n'i Vao tarehy izy  
remember+gen'i Vao face he:nom  
*He was recalled (by his face) by Vao*

But in fact deriving passives from actives in Malagasy is unnatural (Keenan 1995). In many common cases (Keenan & Manorohanta 1998) the active is visibly derived from the passive. E.g. in (67b) the passive *tadidy* is a root. The active *mahatadidy* is built from it by prefixing *-aha-* and then present tense active *m-*. More generally actives and passives are independently derived from roots. In (67a) the root *ongotra* yields the active (pres) *manongotra* and the passive (pres) *ongotana*. And active morphology is not meaningless (Keenan 1995) - it matches syntactic

arguments with theta roles. But in the passive none of that active meaning is present as the syntactic arguments are different (the passive having a genitive not present in the active, the active having an accusative not present in the passive).

In addition to the general failure to relate actives and passives directly we find cases specific to RNP, where RNP to passives is judged better than to actives: (68a) was accepted by all speakers, but about half rejected RNP from DOs in (68b).

- (68) a. Hadino+ko anarana izy                      b. M+aN+hadino (manadino) anarana azy aho  
           forget+1sg:gen name 3:nom                pres+act+forget name 3:acc 1sg:nom  
           *He has his name forgotten by me*        *I name forget him*

Equally, passive imperatives are judged by virtually all speakers to be better than active ones. Thus the passive of (66a'), *Soloy lamba izy* 'be replaced (by you) clothes he' is accepted by all speakers, whereas not all accept (66a') and those that do prefer the passive. The preference for passive over active imperatives is general and not specific to RNP contexts. But given Compositionality it renders implausible that passive imperatives would be derived from, and hence interpreted as a function of, active imperatives, as many speakers hesitate in associating a meaning with active imperatives, whereas none do with passives.

Lastly, note that in RNP to DOs, it is the derived DO which is portrayed as involved or to which a stable property ascribed: e.g. having his hair cut in (60a'), being freed in (60b'), etc. And here involvement seems to win out more than stability.

#### 4. Constraints on RNP

We exhibit several constraints on (1) which sorts of Pn's may host RNP, and (2) which sorts of NPs can be raised out of.

##### 4.1 Types of Pns which do not naturally host Raising from NP

In almost all the excluded cases the Pn is syntactically and semantically "complex", where containing two or more content words counts as complex, as does causative and reciprocal morphology, but not tense and active or passive voice morphology. The one exception would be agented passives. As well one caveat is in order: the claim that no expressions of a certain grammatical form are acceptable cannot be supported with just a few instances. Perhaps further work will uncover examples we overlooked. In particular, complexity seems to promote individual rather than stage level interpretations, so our examples will not always discriminate these two factors.

##### 4.1.1 Raising to Object Predicates

(68a) below illustrates sentence complementation with active matrix verbs. In (68b) the subject of the complement clause is presented as a DO of the matrix verb, replaceable by an accusative pronoun (*azy*). (68c) shows that PossR does not apply here. (69), not derived by Raising to Object, shows that incorporated Ns do not control *ho* complements, arguably small clause predicates, whence the problem lies with the non-referential status of incorporated Ns, not so much incorporating into complex predicates.

- (68) a. Mihevitra Rabe fa mpangalatra ny zana-dRakoto  
           thinks Rabe that thief the child-of-Rakoto  
           *Rabe thinks that Rakoto's child is a thief*  
       b. Mihevitra ny zana-dRakoto ho mpangalatra Rabe  
           thinks the child-of-Rakoto as thief Rabe  
           *Rabe claims the child of Rakoto to be a thief*

- c. \*Mihevi-janaka an-dRakoto ho mpangalatra Rabe  
thinks-child acc-Rakoto as thief Rabe

- (69) a. Nangataka ny zana-dRabe ho vady aho  
asked-for the child-of-Rabe as spouse I  
*I asked for Rabe's child as a wife*
- b. \*Nangata-janaka an-dRabe ho vady aho  
asked-for-child acc-Rabe as wife I

#### 4.1.2 Pns with incorporated N.

As in S. Tiwa, RNP doesn't iterate.

- (70) a. Maty vady ny zana-dRabe  
died spouse the son of Rabe
- b. \*Maty vady zanaka Rabe  
died spouse son Rabe

#### 4.1.3 Transitive verb + object

- (71) a. Nikapoka ny alika ny zanako  
hit the dog the child+my  
*My child hit the dog*
- a'. \*Nikapoka ny alika zanaka aho  
hit the dog child I
- a''. \*Nikapoka zanaka ny alika aho  
hit child the dog I
- b. Mamboly paraky ny havanay  
cultivate tobacco the relatives-our  
*Our relatives cultivate tobacco*
- b'. \*Mamboly paraky havana izahay  
cultivates tobacco relatives we
- b''. \*Mamboly havana paraky izahay  
cultivates relatives tobacco we
- c. Namono tena ny zana-dRabe  
killed self the child-of-Rabe  
*Rabe's child killed himself*
- c'. \*Namono tena zanaka Rabe  
killed self child Rabe  
*Rabe underwent his child's suicide*

(71c) shows that the reflexive pronoun, *tena*, counts as a DO for purposes of RNP.

#### 4.1.4 Circumstantial verbs

- (72) a. Ipetrahako ny sezanao  
sitting+in+by+me the chair+your  
*Your chair is being sat in by me*
- a'. \*Ipetrahako seza ianao  
sitting+in+by+me chair you
- b. Iafenan'ny jiolahy ny tranony  
hidden+in+by'the brigand the house+her  
*Her house is being hidden in by the brigand*
- b'. \*Iafenan'ny jiolahy trano izy  
hidden+in+by'the brigand house she

#### 4.1.5 Causatives of intransitive verbs used absolutely

- (73) a. Mampatahotra ahy Rabe  
cause+fear me Rabe  
*Rabe frightens me*
- a'. Mampatahotra Rabe  
cause+fear Rabe  
*Rabe is frightening (causes fear)*

Like *mampatahotra* we have *mampihomehy* 'makes laugh' and *mampalahelo* 'makes sad'. These PIs behave as transitive for purposes of PossR. The primed Ss below only have the causative reading, in which causative *amp-* scopes over the object, not the one associated with PossR in which we incorporate into the causative predicate.

- (74) a. Mampatahotra ny vadin-dRaso  
cause+fear the spouse-of-Raso  
*Raso's spouse is frightening*
- a'. Mampataho-bady Raso  
cause+fear spouse Raso  
*Raso makes her spouse afraid*  
*\*Raso suffers spouse-frightening*
- b. Mampihomehy ny zana-dRabe  
cause+laugh the child-of-Rabe  
*Rabe's child is funny*
- b'. Mampihomehy zanaka Rabe  
cause+laugh child Rabe  
*Rabe makes children laugh*  
*\*Rabe has laughing children*
- c. Mampalahelo ny zana-dRabe  
cause+sad the child-of-Rabe  
*Rabe's child is pitiful*
- c'. Mampalahelo zanaka Rabe  
cause+sad child Rabe  
*Rabe makes children sad*  
*\*Rabe has sad children*

#### 4.1.6 UOD (unspecified object deletion) predicates

- (75) a. Misotro toaka izy  
drink booze he  
*He drinks booze*
- a'. Misotro izy  
drink he  
*He drinks*

In the primed Ss below the postverbal N can only be understood as a direct object of the verb, not as an original possessive head.

- (76) a. Misotro ny zana-dRaso  
drinks the child-of-Raso  
*The child of Raso drinks*
- a'. \*Misotro zanaka Raso  
drinks child Raso  
*Raso suffers from children drinking*
- b. Mifoka ny zana-dRaso  
The child of Raso smokes
- b'. \*Mifoka zanaka Raso  
*Raso suffers from child smoking*

#### 4.1.7 Reciprocals of transitive verbs

- (77) a. n+ifamp+i+kapoka (nifampikapoka) ny zana-dRabe sy Ranaivo  
past+rec+act+strike the children-of-Rabe and Ranaivo  
*The children of Rabe and Ranaivo struck each other*
- a'. \*nifampikapoka zanaka Rabe sy Ranaivo  
*Rabe and Ranaivo underwent their children fighting with each other*
- b. n+if+aN-lainga (nifandainga) ny vadin-dRavelo sy Raso  
past+rec+act+lie the spouse-of-Ravelo and Raso  
*The spouses of Ravelo and Raso lie to each other*
- b'. \*nifandainga vady Ravelo sy Raso  
*Ravelo and Raso undergo spouse lying*

#### 4.1.8 Raising to Subject Predicates

In (78) we can treat the complement clause as subject, (79a) or we can treat the subject of that clause as the subject of the entire S, (79b)

- (78) Lazain-dRabe fa mpangalatra ny zana-dRakoto  
 said-by-Rabe that thief the child-of-Rakoto  
*That the child of Rakoto is a thief is said by Rabe, or*  
*The child of Rakoto is said by Rabe to be a thief*
- (79) a. Lazain-dRabe ve fa mpangalatra ny zana-dRakoto?  
 said-by-Rabe Q that thief the child-of-Rakoto  
*Was that the child of Rakoto was a thief said by Rabe?*
- b. Lazain-dRabe fa mpangalatra ve ny zana-dRakoto?  
 said-by-Rabe that thief Q the child-of-Rakoto  
*Is the child of Rakoto said by Rabe to be a thief?*

But PossR cannot apply to (78) analyzed with *ny zana-dRakoto* 'the child of Rakoto' as subject:

- (80) a. \*[[Lazain-dRabe fa mpangalatra] zanaka] Rakoto  
 said-by-Rabe that thief child Rakoto  
*Rakoto underwent that Rabe said that his (Rakoto's) son was a thief*
- b. i. [Lazain-dRabe fa mikapoka alika] ny zana-dRakoto  
 said-by-Rabe that hits dogs the child-of-Rakoto  
*Rakoto's child is said by Rabe to hit dogs*
- ii. \*[[Lazain-dRabe fa mikapoka alika] zanaka] Rakoto  
 said-by-Rabe that hits dogs child Rakoto  
*Rakoto underwent that Rabe said that his (Rakoto's) son beats dogs*

#### 4.1.9 Predicate nominals

RNP is uniformly ungrammatical with predicate nominals.

- |                                                                                             |                                                                                |
|---------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| (81) a. Dokotera ny nama+ny<br>doctor the friend+his<br><i>His friend is a doctor</i>       | a'. *Dokotera namana izy<br>doctor friend he<br><i>He is a doctor-friend</i>   |
| b. Mpangalatra ny rain-dRabe<br>thief the father-of-Rabe<br><i>Rabe's father is a thief</i> | b'. *Mpangala-dray Rabe<br>thief-father Rabe<br><i>Rabe has a thief-father</i> |

### 5. Constraints on the launching site for Raising

#### 5.1 Ditransitive verbs

Despite the fact that Malagasy admits double accusative, neither object of a ditransitive verb can undergo possessor raising.

- (82) a. Manome vola ny zanak'i Soa aho  
 give money the child-of-Raso I  
*I give money to the child of Rasoa*
- b. \*Manome vola zanaka an'i Soa aho  
 give money child acc'art Soa I
- b'. \*Manome zanaka vola an'i Soa aho  
 give child money acc'art Soa I

- (83) a. Nanome ny karaman-dRabe ny vadiny Rakoto  
gave the salary-of-Rabe the wife-his Rakoto  
*Rakoto gave Rabe's salary to his wife*
- b. \*Nanome karama an-dRabe ny vadiny izy  
gave salary acc-Rabe the spouse+his he
- (84) a. Nampianatra marika ny zana-dRabe aho  
cause+learn math the child-of-Rabe I  
*I taught Rabe's child math*
- b. \*Nampianatra marika zanaka an-dRabe aho  
taught math child acc-Rabe I
- b'. \*Nampianatra zanaka marika an-dRabe aho  
taught child math acc-Rabe I

## 5.2 Prepositions

Objects of prepositions do not allow RNP despite pragmatic acceptability.

- (85) a. Mivazivazy amin'ny vadin-dRabe aho  
joke with'the wife-of-Rabe I  
*I joke with Rabe's wife*
- b. \*Mivazivazy vady amin-dRabe aho  
joke wife with-Rabe I  
*I wife-joke with Rabe*

We may replace *mivazivazy* 'jokes' with *misakaizakaiza* 'flirts' or *mitsiky* 'smiles' above, without any change in grammaticality.

This concludes our discussion of PossR in Malagasy. We see that it satisfies the following generalizations, which also hold for S. Tiwa. Gen-2 is just the Relational Succession Law (RSL) of RG:

Gen 1 Possessors only raise from absolutes.

Gen 2 A raised possessor assumes the grammatical function of NP out of which it raises.

We turn now to two additional cases of RNP. The first is surprising but can perhaps be assimilated to PossR as previously given. The second cannot, and clearly violates the RSL.

## II. Extending RNP

### 1. Possessor Raising from Relative Clauses

- (86) a. Maro ny raharaha (izay) sahana+ina+ko (sahaniko)  
much the work (rel) confronted+pass+1sg:gen  
*The work faced by me is great*
- b. Maro raharaha sahanina aho  
much work confronted+pass I  
*I have much work to face*

We may replace *sahanina* 'to be faced' with other semantically comparable non-actives: *todihana* 'to be returned to by', *herehina* 'concerned with by', *iandraiketana* 'be responsible for by', *iantsorohana* 'shouldered by'. The invariable relativizer *izay* may occur as indicated in (86a), though it is more natural to omit it. Speakers reject its presence in (86b).

Clearly the subject of (86a) is *nyraharaha sahaniko* 'the work faced by me'. For example

question particles precede it, and cannot precede *-ko* '1sg:gen' or a full NP (genitive) agent phrase of the passive *sahanina* 'confronted by'.

- (87) a. Maro ve ny raharaha sahaniko?  
*Is the work to be faced by me voluminous?*
- b. \*Maro ny raharaha sahanina ve ko?

And *-ko* is not the possessor of this subject. It is the possessor (Agent Phrase) of the passive modifying *raharaha* 'work', the whole thing determined by *ny* 'the'. Here are some further examples of this surprising construction. They show that the verb in the relative clause may be either passive or circumstantial and that the agent phrase may be either pronominal or a full NP.

- (88) a. Tsy lany ny zavatra iry+ina+ny olombelona (irin'ny olombelona)  
 not exhausted the things desire+pass+the humans:gen  
*The things desired by humankind are unending*
- b. Tsy lany zavatra iry+ina (irina) ny olombelona  
 not exhausted things desire+pass the humankind:nom  
*Humankind has limitless need of things*
- (89) a. Iray ny lalana izor+an+tsika  
 one the route gone-straight-on+circ+1pl.incl.gen  
*The route we are taking directly is the same*
- b. Iray lalana izor+ana isika  
 one route gone-straight-on+circ we:incl.nom  
*We are taking the same route*
- (90) a. Tsy tonga ny vahiny n+asa+ina+ko (nasaiko)  
 not arrived the guests past+invite+pass+1sg:gen  
*The guests that were invited by me haven't arrived*
- b. Tsy tonga vahiny nasaina aho  
 not arrive guests invited I  
*I am in the state of having guests not show up*
- (91) a. Fohy/Kely ny andro n+i+velo+mana+Rabe (niveloman-dRabe)  
 short/few the days past+act+living+circ+Rabe:gen  
*The days during which Rabe lived were short/few*
- b. Fohy/Kely andro nivelomana Rabe  
 short/few days lived+through-circ Rabe:nom  
*Rabe had a short life*

These examples suggest that the NPs in question have been reanalyzed as possessive NPs with the lower possessor now taken to be the possessor of the entire NP. Observe in this regard the similarity with certain simple possessive constructions:

- (92) a. ny raharaha+ko  
 the work+1sg:gen  
*my work*
- b. ny raharaha kely+ko (=keliko)  
 the work little+my  
*my little work*



- c. ny raharaha sahan+i+ko  
the work faced+pass+1sg:gen  
*the work faced by me ≈ my work to be done*

Thus we suggest that a structural reanalysis along the lines of (93) is admitted in Malagasy, and once done, the RNP relation is established as in the cases already considered.

- (93) Reanalysis [N + [V<sub>-act</sub> + NP:gen]] ⇒ [[N+V<sub>-act</sub>] + NP:gen]

That is, the lower genitive NP comes to be a sister to the modified N. In this way it has the same structural position as an ordinary possessor and thus enters the ordinary PossR relation. We observe that these cases of PossR exhibit the properties characteristic of the simple cases. For example the incorporated N may be complex and move across adverbials:

- (94) a. Lavitra tokoa ny lalana h+a+leha+nay (halehanay)  
far very the route fut+pass+go+we[excl,gen]  
*The road that will be taken by us is far/long*
- b. Lavi-dalan-kaleha tokoa izahay  
far-route-fut-pass-go very we  
*We have a long road to travel*
- c. \*Lavitra tokoa lalan-kaleha izahay  
far very route-fut-pass-go we

Equally predicates that do not invite a stable, involvement interpretation are felt as bizarre or unacceptable in the raised expression

- (95) a. Mena / Manify ny lobaka tadiavin-dRabe  
red / thin the shirt sought-by-Rabe:gen  
*The shirt that Rabe is looking for is red / thin*
- b. \*Mena/\*Manify lobaka tadiavina Rabe  
*Rabe experiences the loss of a red/thin shirt*

Note that color adjectives alone host RNP and thus present the requisite "stability":

- (96) a. Manga feo izy  
blue voice he  
*He has a nice voice*
- b. Mena maso izy  
red eye he  
*He is red eyed*

So the lack of stage-levelness of the predicates in (95) is due to the modifier *tadiavina* 'is sought'. It is not a stable property of Rabe that he is seeking a red shirt. He could capriciously decide he wanted a green one.

### 1.1 Constraints on Reanalysis

#### 1.1.1 Reanalysis does not apply to DO's

- (97) a. Nahita ny vola veri+ko / notadiavi+ko Rabe  
saw(found) the money lost-by+1sg:gen / sought-by+1sg:gen Rabe  
*Rabe found the money I lost / was seeking*
- b. \*Nahita vola very / notadiavina ahy Rabe  
found money lost/sought me:acc Rabe

- (98) a'. Mamaky ilay boky tia+ko izy  
reads that book liked-by+1sg:gen he  
*He is reading that book I like*
- b'. \*Mamaky boky tiana ahy izy  
reads book liked me:acc he

1.1.2 Reanalysis does not apply to subjects of transitive verbs

- (99) a. Nanapaka (ny) seza ny vahiny nasai+ko  
broke(act) (the) chair the guests invited-by+1sg:gen  
*The guest(s) I invited broke my chair*
- b. \*Nanapaka (ny) seza vahiny nasaina aho (both are bad)  
broke (the) chair guest(s) invited I
- (100) a. Nisondrotra kilasy ny ankizy nampianari+ko  
went-up class the children taught-by+1sg:gen  
*The children taught by me were promoted to the next class*
- b. \*Nisondrotra kilasy ankizy nampianarina aho  
went-up class children taught I

The unacceptability of (101) however shows that further constraints on Reanalysis are necessary. The immediate suggestion that the reanalyzed NP must be clause final is counterexemplified in (102), so further work is needed here.

- (101) a. Very / Tsy hita ny entana napetrako tao am-bata  
lost / not found the things placed-by-1sg:gen there in-trunk  
*The things I put in the trunk were lost / not found*
- b. \*?Very / Tsy hita entana napetraka tao am-bata aho  
lost / not found thing placed-by-1sg:gen there in-trunk I
- (102) a. Maro ny zavatra ho+laza+ina+ko (holazaiko) anao  
many the things fut+say+pass+1sg:gen you:acc  
*The things that will be said by me to you are numerous*
- b. Maro zavatra holazaina anao aho  
many things will-be-said you:acc I:nom  
*I have many things to say to you*

For *holazaiko anao* in (102a) we can put *hohesahiko aminao* / *hambarako anao (aminao)* / *hatorako anao* (will be spoken about by me to you / will be revealed by me to you / will be shown by me to you, respectively).

In (102a) the possessor NP occurs internal to the relative clause, though semantically it has the entire relative clause in its scope. In (103a) the possessor is even still further inside:

- (103) a. Maro ny zavatra tia+ko ho+laza+ina anao  
many the thing liked-by+1sg:gen fut+say+pass you:acc  
*The things that are wanted by me to be said (by me) to you are numerous*
- b. Maro zavatra tiana holazaina anao aho  
many thing liked fut-be said you:acc I:nom  
*I have many things I want to tell you*

## 2. Raising of accusatives to nominatives

(104) - (106) violate the RSL:

- (104) a. Maro ny (tovolahy) tia an'i Soa  
many the (young-men) like:act acc'art Soa  
*The people (young-men) who like Soa are*
- b. Maro (tovolahy) tia i Soa  
many (young-men) like:act art Soa  
*Soa is very popular/well liked (by numerous young-men)*
- a'. Be ny asa manahirana ahy  
much the work bothers:act me:acc  
*The work that worries me is great*
- b'. Be asa manahirana aho  
much work bothers I:nom  
*I have a lot of bothersome work to do*

Other quantity adjectives like *vitsy* 'few' and *betsaka* 'numerous' may replace *maro* here.

- (105) a. Mahery ny mp+anohana an'i Soa  
strong the er+support acc'art Soa  
*The supporters of Soa are strong*
- b. Mahery mpanohana i Soa  
strong supporters art Soa  
*Soa has strong support*

For *mahery* here we can substitute other judgmental adjectives like *tsara* 'good', *matanjaka* 'strong', *malemy* 'weak,soft' and *mafy* 'strong,hard'.

- (106) a. Mafy ny (raha) nahazo azy  
hard the (thing) attained him:acc  
*The thing that struck him was hard*
- b. Mafy raha nahazo izy  
hard thing attained he:nom  
*He was struck (afflicted) with s.th. hard*

The raised NP presents all the characteristic properties of subjects: it is nominative, (107a), takes question particles in front of it (107b), extracts (107c,d), and negation and concessive expressions frame the derived VP, (107e,f).

- (107) a. Maro tia izy  
many like she  
*She is popular*
- b. Maro tia ve i Soa?  
many like ? art Soa  
*Is Soa popular?*
- c. olona izay maro tia  
people who many like  
*people who are popular*
- d. Iza no maro tia indrindra eto?  
who focus many like most here  
*Who is most popular here?*
- e. Tsy maro tia mihitsy/akory/intsony i Soa  
not many like at-all/at-all/longer art Soa  
*Soa isn't at all/any longer popular*
- f. Tsy faly i Soa; na dia maro tia aza e;  
not happy art Soa though many like even  
*Soa isn't happy even though (she) is popular*

Also the derived predicate is individual level, expressing a stable property. And not all raised NPs are Patients, (108a,b), and even when they are the raised NP may shift somewhat in theta role as determined by the main predicate rather than the one it was governed by originally.

- (108) a. Be ny mpiteny ny teny angilisy  
many the speaker the lg English  
*The speakers of English are numerous*
- a'. Be mpiteny ny teny angilisy  
many speaker the lg English  
*English has many speakers*

- b. Maro ny mpankafy io mozika io:acc  
many the delecter this music this  
*Those who prize this music are numerous*
- b'. Maro mpankafy io mozika io  
many delecter this music this:nom  
*This music has many fans*
- (109) a. Afaka ny aretina nanahirana ahy  
free the illness bothered me  
*The illness that was bothering me is over*
- a'. Afaka aretina nanahirana aho  
free illness bothered I  
*I am free from a bothersome illness*

And as before, Raising from stage level predicates is generally unacceptable:

- (110) a. Mihazakazaka / Matory ny mpanohana an'i Soa  
are-running / are-sleeping the supporters acc'art Soa  
*Soa's supporters are running / sleeping*
- a'. \*Mihazakazaka / Matory mpanohana i Soa  
*Soa has running / sleeping supporters*
- b. Tezitra/Vizaka ny mpividy an'io  
angry/tired the buyers acc'that  
*The people who are buying that are angry/tired*
- b'. \*Tezitra/Vizaka mpividy io  
angry/tired buyers that  
*That has angry/tired buyers*

Syntactically, the remnant of the relative clause is incorporated into the predicate. Question particles, negative polarity items, concessive particles, and adverbs cannot appear between the host predicate and the remnant. Paralleling the well formed (107) we have:

- (111) b'. \*Maro ve tia i Soa?  
e'. \*Tsy maro intsony tia i Soa
- d'. \*Iza no maro indrindra tia eto?  
f'. \*Tsy faly i Soa na dia maro aza tia

Similarly Causative *-aha-* combines with predicates created by Accusative Raising:

- (112) a. Izany no maha-marosy tia an'i Soa  
that foc cause-many likes acc'art Soa  
*It's that which makes Soa so popular*
- b. Izany no  
maha-vitsy mpanohana an'i Soa  
mahabe asa manahirana ahy  
mahafaka aretina nanahirana aho
- It is that which  
makes Soa's supporters few  
increases the work that's bugging me  
cured the illness that was bugging me"

And the derived predicates coordinate with other P1s:

- (113) a. Tsara fanahy ka maro tia i Soa  
good spirit and-so many like art Soa  
*So has a good character and is popular*
- b. Tena mahafinaritra sady/ka maro mpankafy io mozika io  
very pleasing and/and-so many delectors that music that  
*That music is very pleasing and has many fans*
- c. Be asa manahirana sy mandreraka aho  
much work bothersome and exhausted I:nom  
*I have much worrisome work and am exhausted*

Also in common with PossR, Accusative Raising (AccR) is not available from subjects of

transitive verbs:

- (114) a. Niantso ny polisy ny nahita izany zavatra izany / azy  
called the police the saw that thing that /3:acc  
*The ones who saw that thing / it called the police*

a'. \*Niantso ny polisy nahita izany zavatra izany / izy  
called the police saw that thing that / 3:nom

b. Mitady ny mpivarotra ny mpividy an'io  
seek the sellers the buyers acc'that  
*The buyers of that are looking for the sellers*

b'. \*Mitady ny mpivarotra mpividy io  
see the sellers buyers that:nom

Nor does AccR apply to DOs or OPreps:

- (115) a. Tsy mahalala ny tia an'i Soa aho  
not know the likes acc'art Soa I  
*I don't know the ones who like Soa*

a'. \*Tsy mahalala tia an'i Soa aho  
not know likes acc'art Soa I

b. Tsy tia ny mpankafy io mozika io aho  
not like the delectors that music that I  
*I don't like the people who appreciate that music*

b'. \*Tsy tia mpankafy io mozika io aho  
not like delectors that music that I

In one important respect however AccR differs from PossR: it is somewhat more productive syntactically, and somewhat more compositional semantically in the sense that the predicates it builds are less subject to idiomatic or idiosyncratic interpretation.

Regarding syntactic productivity we note that in distinction to the basic cases of Adjectival hosts of Possessor Raising, (33), here coordinate predicates do host AccR.

- (116) a. Maro sady/sy mahery mpanohana Rakotoarivony  
many and/and strong supporters Rakotoarivony  
*Rakotoarivony has many and strong supporters*

b. Tsy fantatro na maro na vitsy mpividy itony zavatra itony  
not known-by-me whether many or few buyers that thing that  
*Whether that sort of thing has many or few buyers is not known by me*

Also the incorporated Ns seem to coordinate more freely than in PossR:

- (117) a. Vitsy mpankafy sy mpividy io akanjo io  
few delectors and buyers that clothes that  
*That article of clothing has few people who like it and buy it*

b. Maro tia sy mividy ireto entana ireto  
many likes and buys those thing those  
*Those things have many people who like them and buy them*

This concludes our discussion of Accusative to Nominative Raising. Obviously the precise nature of this phenomenon and its relations to other derivational processes still needs much investigation, both internal to Malagasy and cross linguistically. At time of writing we know of no clear analogues to AccR in other languages.

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# Predicate Raising and ‘VOS’ Order in Malagasy

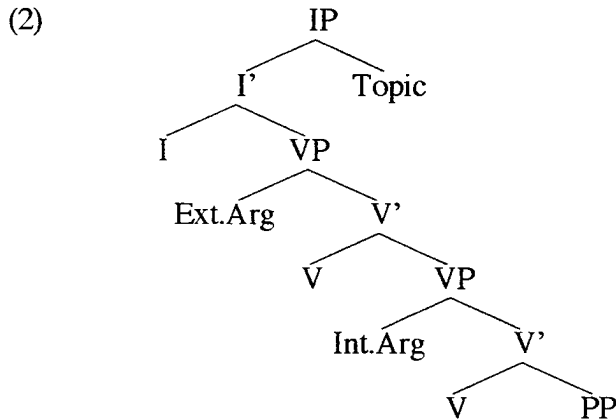
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## 1. Introduction<sup>1</sup>

Malagasy, an Austronesian language with rather fixed word order, has traditionally been described as a ‘VOS’ (or Predicate-Topic) language, based on examples such as (1):<sup>2</sup>

- (1) Namono ny akoho tamin’ny antsy ny vehivavy  
Pst-kill:NT Det chicken Pst-with-Det knife Det woman  
‘The woman killed the chicken(s) with the knife’

In Guilfoyle, Hung, and Travis (1992, henceforth GHT), and much subsequent work, this order is captured by positing a tree like the one in (2), where the verb undergoes head movement to  $I^0$ , and the Topic raises to a specifier position above and to the right of  $I^0$ .



Based on the position of Topics, Guilfoyle et al. stipulate that in Malagasy, lexical projections such as VP have their specifiers on the left, while functional projections such as IP have their specifiers on the right. In this paper, I present an alternative analysis which avoids this directionality stipulation, in accordance with Kayne’s (1994) ban on right specifiers and rightward movement. Under my analysis, surface Predicate-Topic order is derived from underlying Topic-Predicate order, through raising of the Predicate to the specifier of a functional category in COMP, located above the surface position of the Topic.<sup>3</sup> By positing movement of the Predicate over the Topic, I claim, a descriptively

<sup>1</sup> This paper is a somewhat reworked version of Pearson (1997). Many thanks to my Malagasy consultants, Noro Ramahatafandry and Saholy Hanitriniaina. Thanks also to Lisa Travis, Ileana Paul, Ed Keenan, and the audiences at NELS 27 (Montréal, Québec) and ConSOLE 5 (London, England), for discussing this material with me. All errors and oversights are my own.

<sup>2</sup> The following abbreviations are used in this paper: AT= Accusative-Topic form, Cleft = cleft particle, Comp = complementizer, CT = Circumstantial-Topic form, Decl = declarative, Det = determiner, DT = Dative-Topic form, Lnk = linking morpheme, Neg = negation, Nom = nominative, NT = Nominative-Topic form, Obl = oblique prefix, Pred = Predicate, Pst = past tense, Qu = question morpheme, Sub = subordinator, Top = topic.

<sup>3</sup> Note that this analysis is similar to one discussed in Pensalfini (1995).

adequate account of Malagasy word order can be obtained within a highly restrictive theory of projection and movement.

The analysis presented in this paper takes advantage of two recent ideas in the literature. The first of these is that cross-linguistic word order variation can be accounted for without assuming a directionality parameter on phrase structure, if we assume that large XP constituents can undergo pied-piping to the specifiers of functional projections (Nkemnji 1996 offers a recent example of this approach to word order; cf. also Koopman 1996).

The second idea which I exploit in my analysis is that COMP, much like INFL, is not a single projection, but rather a set of projections, which includes positions associated with features such as Topic, Focus, clause-type (or 'force'), and Wh (Bhatt and Yoon 1991, Rizzi 1995, Koopman 1996).

In the discussion which follows, I will assume a number of restrictions on phrase structure and movement: Following Kayne (1994), I will assume that there is no directionality parameter, and that phrase markers conform universally to a Specifier-Head-Complement order, where precedence on terminal elements corresponds to asymmetric c-command relations on non-terminal nodes. Given this restriction, in combination with the assumption that a moved element must c-command its trace, it follows that movement must always be to the left. I will also adopt the Minimalist assumption that elements move solely in order to enter into a checking relation with a feature of a higher head X, either through head adjunction to X° or through movement of a maximal projection to SpecXP. Finally, following Rizzi (1995) and others, I assume that there is no free adjunction to XP - or, in Kayne's terms (where specifiers are a kind of adjunct), only one XP adjunct is allowed per projection.

The structure of the rest of this paper is as follows: In section 2 I review Topic-Predicate structure and argument morphology in Malagasy. In section 3 I present some word order facts, focusing on elements which arguably occur above TP as part of the COMP system. These include complementizers, question particles, and negation. I then lay out my predicate raising analysis in section 4, and consider briefly how to implement it within a Minimalist theory of movement. Finally in section 5, I present some evidence for my analysis based on word order in certain kinds of embedded clauses. (This section includes discussion of certain constructions which, to the best of my knowledge, have remained unanalyzed in previous literature on Malagasy). In section 6 I present my conclusions.

## 2. Background: Topic, predicate, and argument morphology

As several authors have noted (Keenan 1994; Pearson 1995, 1996; Pensalfini 1995; etc.), there is evidence that clauses in Malagasy have a bipartite structure, consisting of a Predicate constituent, and what I will call the 'Topic field', which includes various positions outside the Predicate. In most cases the Topic field contains a Topic DP, which forms a chain with a gap inside the Predicate. This structure is illustrated in (3), where *e* indicates the gap. (The exact position of the gap within the Predicate phrase is unclear. I tentatively assume that Topics in Malagasy are base-generated in their surface position and co-indexed with a PredP-initial null operator. However, nothing in my present proposal hinges on this.)

- (3) [PredP *e*<sub>i</sub> namono ny akoho tamin'ny antsy ] ny vehivavy<sub>i</sub>  
           Pst-kill:NT Det chicken Pst-with-Det knife Det woman  
       "The woman killed the chicken(s) with the knife"

The thematic role of the Topic - or, perhaps more accurately, the abstract Case of the Topic - is indicated by the morphological form of the verb. A given verb may have up to



five ‘topic agreement’ forms (traditionally called ‘voice’ forms), allowing any argument of the verb to be topicalized.<sup>4</sup> For instance, compare (4a), where the verb occurs in the Nominative-Topic form, with (4b), where the verb occurs in the Accusative-Topic form:

- (4) a. Nihinana ny laisoa ny gidro  
 Pst-eat:NT Det lettuce Det lemur  
 “The lemur ate the lettuce”  
 or “The lemur, (it) ate the lettuce”
- b. Nohanin’ny gidro ny laisoa  
 Pst-eat:AT Det lemur Det lettuce  
 “The lemur ate the lettuce”  
 or “The lettuce was eaten by the lemur”  
 or “The lettuce, the lemur ate (it)”

These sentences have roughly the same propositional content, but differ in how they present the information: Intuitively speaking, the Topic presents some presupposed entity, while the Predicate asserts, denies, or questions some property of that entity. Thus sentence (4a) predicates some property of the Agent *ny gidro* “the lemur”, namely that it ate the lettuce, while (4b) predicates some property of the Patient *ny laisoa* “the lettuce”, namely that the lemur ate it. (See Keenan 1976, 1994 and Pearson 1996, 1997 for more examples and discussion.)

I will assume here that Topic DPs occupy the specifier of a functional projection TopP, the head of which selects the Predicate phrase (abbreviated PredP) as its complement.<sup>5</sup> I assume that the highest projection of PredP is associated with existential

<sup>4</sup> The five forms are listed below, together with examples built from the root *haro* “to mix”. The labels which I assign to these forms are inspired by Kroeger (1988), and reflect the observation that topic agreement appears to encode the abstract Case of the topicalized constituent. (Or put another way, topic agreement marking is the analogue of morphological case in languages like Russian or Hungarian - the former representing ‘head-marking’ and the latter ‘dependent marking’. Cf. Schachter 1976, Kroeger 1988.)

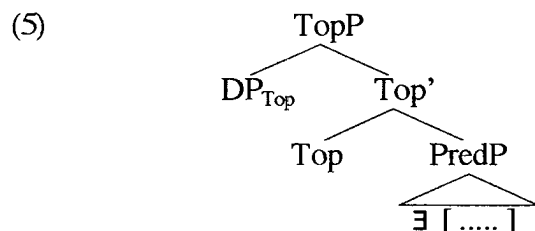
| <i>name</i>               | <i>morphology</i>          | <i>example</i>   |                       |
|---------------------------|----------------------------|------------------|-----------------------|
| Nominative-Topic (NT)     | <i>m-</i> + Prefix + Root  | <i>mangaro</i>   | ( <i>m-an-haro</i> )  |
| Circumstantial-Topic (CT) | Prefix + Root + <i>-an</i> | <i>angaroana</i> | ( <i>an-haro-an</i> ) |
| Translative-Topic (TT)    | <i>a-</i> + Root           | <i>aharo</i>     | ( <i>a-haro</i> )     |
| Dative-Topic (DT)         | Root + <i>-an</i>          | <i>haroana</i>   | ( <i>haro-an</i> )    |
| Accusative-Topic (AT)     | Root + <i>-in</i>          | <i>haroina</i>   | ( <i>haro-in</i> )    |

Roughly speaking, the NT form indicates topicalization of the subject, the AT form topicalization of the direct object, and the CT form topicalization of an oblique (e.g. benefactive, locative) argument. The TT and DT forms are typically used to topicalize the direct and indirect objects of ditransitive verbs, respectively, although the TT form is used with certain verbs to topicalize instruments. (Note that it is rare for a given verb to appear in all five forms. In general, there is great deal of variation from verb to verb, both with regard to the range of topic agreement forms attested, and with regard to the thematic role(s) of the arguments which each form topicalizes.)

<sup>5</sup> The position occupied by the Topic in Malagasy is perhaps analogous to the SpecRefP position in Beghelli and Stowell (1995, 1997) (cf. also Szabolcsi 1997 on Topics in Hungarian). Note also that in many respects, Topics in Malagasy are analogous to fronted (non-focused, non-wh) XPs in Germanic V2 clauses. In particular, Malagasy Topics share the following semantic and distributional characteristics with these XPs:

- (i) Topics must be specific (in the sense of Enç 1991), though they need not be definite.
- (ii) Abstracting away from ellipsis, Topic-drop, and certain kinds of imperatives, every clause in Malagasy must have an overt Topic (cf. the EPP in Germanic).
- (iii) Multiple Topics in the same clause are disallowed.

closure, as in the tree in (5). In this way I capture the fact that non-specific noun phrases may occur anywhere inside the Predicate, where they are bound by the existential operator, but are prohibited from occurring in the Topic field. This is very much in the spirit of Kratzer (1989) and Diesing (1992), except that I locate existential closure higher than they do, above TP rather than at the IP-VP boundary.<sup>6</sup>



Let me also briefly review morphological case marking in Malagasy, which will be relevant to the discussion in sections 4 and 5. Malagasy noun phrases are generally recognized as having (up to) three morphological forms. These forms are traditionally called the “nominative case”, “accusative case”, and “genitive case” forms (see Keenan 1976, 1994, Voskuil 1993); however I will avoid these terms here, and refer to them instead as the “Topic”, “non-Topic”, and “bound” forms, respectively.<sup>7</sup>

The Topic form is illustrated in (6). Topic pronouns have special morphological forms characterized by the prefix *i-*, as shown in (6a), while proper names and common noun phrases are unmarked. (Note that what I am calling the Topic form is also used to mark clefted DPs, as well as fronted contrastive topics, which I will not discuss here.)

- (6)
- |    |                               |     |          |                |
|----|-------------------------------|-----|----------|----------------|
| a. | Namangy                       | ny  | vehivavy | <b>izahay</b>  |
|    | Pst-visit:NT                  | Det | woman    | 1pExcl:Top     |
|    | “We visited the woman”        |     |          |                |
|    |                               |     |          |                |
| b. | Namangy                       | ny  | vehivavy | <b>Rabe</b>    |
|    | Pst-visit:NT                  | Det | woman    | Rabe           |
|    | “Rabe visited the woman”      |     |          |                |
|    |                               |     |          |                |
| c. | Namangy                       | ny  | vehivavy | <b>ny zaza</b> |
|    | Pst-visit:NT                  | Det | woman    | Det child      |
|    | “The child visited the woman” |     |          |                |

The non-Topic form is mainly used to mark non-topicalized objects of verbs. Here again, the pronouns have special morphological forms. In addition, proper names are marked with the oblique prefix *an-*.<sup>8</sup> Common noun phrases may also take the prefix *an-*, or they may be unmarked, depending on the definiteness of the noun phrase (and on the dialect of the speaker). The non-Topic form is illustrated in (7):

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(iv) Topics are mutually exclusive with focus-fronted and *wh*-fronted constituents.

These parallels suggest that whatever analysis we adopt to explain V2 phenomena (see Zwart 1993 for a recent approach) can be extended to cover topicalization structures in Malagasy - modulo the Predicate-raising operation argued for in this paper.

<sup>6</sup> Cf. É. Kiss (1996). My use of PredP as an ad hoc label for the Predicate phrase follows Kiss’s usage. This PredP projection should not be confused with the Predication Phrase (PrP) argued for in Bowers (1993), or other similarly named categories.

<sup>7</sup> I do this so as to avoid confusion between the names of the DP forms and the names of the ‘topic agreement’ forms (Nominative-Topic, Accusative-Topic, etc.).

<sup>8</sup> This prefix is also used in locative and adverbial expressions, e.g. *an-trano* “at home” and *an-tsirambina* “carelessly, with carelessness”.

- (7) a. Namangy     **anay**                    ny   vehivavy  
       Pst-visit:NT   1pExcl:non-Top   Det   woman  
       “The woman visited us”
- b. Namangy     **an-dRabe**     ny   vehivavy  
       Pst-visit:NT   Obl-Rabe     Det   woman  
       “The woman visited Rabe”
- c. Namangy     **ny zaza**     ny   vehivavy  
       Pst-visit:NT   Det   child   Det   woman  
       “The woman visited the child”

Finally, the bound form is used for non-Topic subjects of verbs, as shown in (8), as well as possessors and the objects of most prepositions, as shown in (9). The bound form is characterized by what Keenan (1994) calls “*n*-bonding”, whereby the determiner (or D°) element of the noun phrase is attached to the predicate head by means of a ‘linking’ morpheme *-n(y)*. The bound DP and the predicate head with which it fuses form a single phonological word, as indicated by the orthography.

- (8) a. Novangian**anay**                    ny   vehivavy  
       Pst-visit:DT-1pExcl   Det   woman  
       “The woman was visited by us”
- b. Novangian**-dRabe**     ny   vehivavy  
       Pst-visit:DT-Rabe     Det   woman  
       “The woman was visited by Rabe”
- c. Novangian**’ny zaza**     ny   vehivavy  
       Pst-visit:DT Det   child   Det   woman  
       “The woman was visited by the child”
- (9)    ny boky                    “the book”                    amin(a)                    “with/at”  
       ny bokin**ay**                    “our book”                    amin**ay**                    “with/at us”  
       ny bokin**’ny zaza**                    “the child’s book”                    amin**’ny zaza**                    “with/at the child”

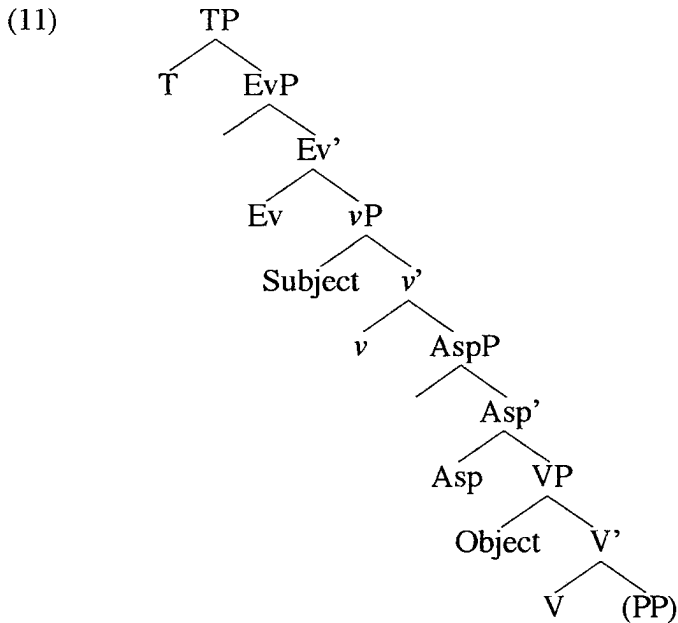
### 3. Word order

I now turn to some word order facts, starting with the order of the verb and its non-Topic arguments, which together form the core of the Predicate phrase. The order of these elements, which is fairly rigid, is given in (10):<sup>9</sup>

- (10)   Verb   Subject   Object(s)   Obliques (PPs)

To account for this order, I assume the structure in (11), based on Travis (1991, 1994).

<sup>9</sup> In certain poorly understood cases, an oblique may precede a definite direct object, although this order is somewhat marked. Indefinite direct objects must be immediately right-adjacent to the verb (or the bound subject if a non-subject has been topicalized, as in (12)).



Here  $v$  is a light predicate, which assigns a theta-role to the external argument (Chomsky 1995). Ev(ent)P and Asp(ect)P are functional heads which select VPs, and may play a role in the Case licensing of arguments (e.g. Travis 1991 considers SpecAspP to be the Case position for non-Topic objects). I assume that the verb raises at least to  $Ev^\circ$ , and perhaps to  $T^\circ$ , either by head movement or by XP movement.

For present purposes, the crucial thing about this tree is that it is strictly right-branching, such that non-Topic subjects both precede and asymmetrically c-command non-Topic objects. Evidence for c-command comes from examples like (12), where *ny zanaka* “the children” is a benefactive Topic (as indicated by CT morphology on the verb). Here we see that an Actor antecedent may bind a Theme anaphor within the Predicate phrase (this example taken from Keenan 1993):

- (12) Amonoan’ny ray aman-dreny rehetra<sub>i</sub> tena<sub>i</sub> ny zanaka  
 kill:CT Det parents all self Det children  
 “All parents<sub>i</sub> kill themselves<sub>i</sub> for (their) children”

Turning to projections above TP, (13) shows that the negative morpheme *tsy*, which presumably occupies the head of NegP, immediately precedes the verb, occurring at the leftmost edge of the Predicate phrase. Complementizers such as *fa* (which heads finite complement clauses) occur clause-initially, immediately preceding negation, as in (14):

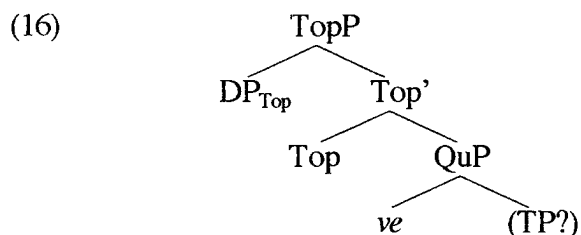
- (13) **Tsy** namaky ny boky ny mpianatra  
 Neg Pst-read:NT Det book Det student  
 “The student didn’t read the book”
- (14) Fantatro **fa** tsy namaky ny boky ny mpianatra  
 known-1s Comp Neg Pst-read:NT Det book Det student  
 “I know that the student didn’t read the book”

Malagasy also possesses various particles associated with clause-type, among them the yes/no question particle *ve*. As illustrated in (15), *ve* obligatorily occurs at the rightmost edge of the Predicate, following Predicate-internal obliques but preceding the Topic:

- (15) Namaky ny boky tany an-tokotany **ve** ny mpianatra?  
 Pst-read:NT Det book Pst-there Obl-garden Qu Det student  
 “Did the student read the book in the garden?”

cf.: \* Namaky **ve** ny boky tany an-tokotany ny mpianatra?  
 \* Namaky ny boky **ve** tany an-tokotany ny mpianatra?  
 \* Namaky ny boky tany an-tokotany ny mpianatra **ve**?

Since particles like *ve* occur at the boundary between the Predicate and the Topic field, and since they act as functions over properties or situations, I will locate them in the head of the highest PredP-internal projection, which I label QuP, as in (16). (In simple statements, the head of QuP would presumably be occupied by a phonetically null declarative morpheme.)<sup>10</sup>



Finally, there are a certain number of elements which can occur outside the Predicate, usually after the Topic. For instance, adverbials like *omaly* “yesterday”, which provide the temporal context for the event, typically occur clause-finally (or sometimes between the Predicate and the Topic), as shown in (17):

- (17) a. Namaky ny boky **ve** ny mpianatra **omaly**?  
 Pst-read:NT Det book Qu Det student yesterday  
 “Was the student reading the book yesterday?”
- b. Namaky ny boky **ve omaly** ny mpianatra?  
 Pst-read:NT Det book Qu yesterday Det student  
 “Was the student reading the book yesterday?”

In addition, certain elements are regularly ‘stranded’ after the Topic. Among these are locative PPs in ‘have/be’ constructions, as in (18), and finite clause complements headed by *fa*, as in (19) (as opposed to ECM/raising complements, which occur within the Predicate; cf. (30) below). These elements presumably extract from inside the Predicate, perhaps for scope reasons.<sup>11</sup>

- (18) Manana penina **ve** Rasoao ao anatin’ny poketrany?  
 have:NT pen Qu Rasoao there inside-Det purse-3s  
 “Does Rasoao have a pen in her purse?”

<sup>10</sup> There is some cross-linguistic evidence for locating *ve* below TopP. In the Mayan language Tz’utujil (Aissen 1992), the yes/no question particle follows the Topic and precedes the Predicate. (Topics in Tz’utujil share a number of important properties with Topics in Malagasy, and could be argued to occupy the same position.)

<sup>11</sup> PP stranding in ‘have/be’ constructions may be an instance of obligatory locative preposing (Hoekstra and Mulder 1990), where the surface order is derived by raising of the Predicate over the preposed locative. The existence of CP-complement extraction has been documented in a number of languages, although the reasons for it remain obscure.

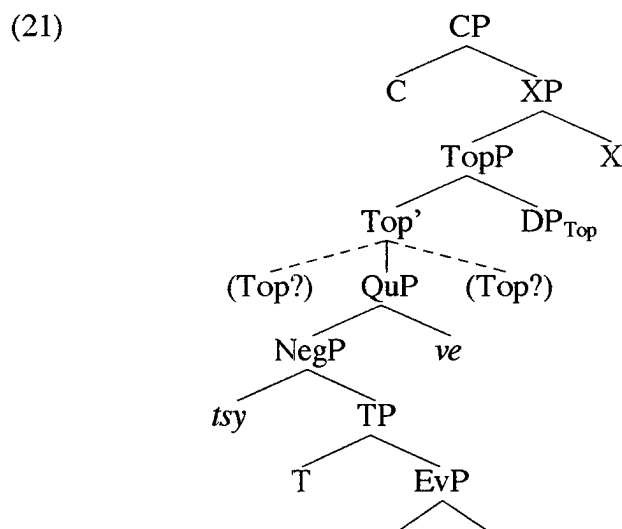
- (19) Manantena Rasoa fa mianatra ny ankizy  
 hope:NT Rasoa Comp study:NT Det children  
 "Rasoa hopes that the children are studying"

The word order facts presented in this section may be summarized by means of the template in (20):

- (20) Comp Neg [<sub>TP</sub> Verb Arguments Adjuncts] *ve* Topic, *omaly*, etc.

#### 4. Deriving predicate-initial word order

So how do we draw a tree that captures the word order facts discussed above? By expanding the GHT structure in (2) in order to accommodate negation, *ve*, post-Topic elements, etc., we arrive at a tree like (21). (Note that XP is used as an ad hoc abbreviation for the positions occupied by elements generated - or raised - to the right of the Topic, such as *omaly* in (17).)



Clearly the unusual thing about the tree in (21) is that the lower part (NegP and below) is right-branching, while the upper part is at least partially left-branching. Although this fact alone is not sufficient grounds for rejecting the tree, I will argue that an entirely right-branching structure can capture the word order facts just as well, if we allow for raising of the Predicate above the Topic, and that such an analysis has at least one empirical advantage (see section 5). As a lead-in to this analysis, let me turn to the issue of expanded COMP.

In recent literature it has been proposed that CP, like IP, should be broken up into a series of functional projections. Positing a more articulated structure for COMP has a number of advantages, in that it allows us to (a) provide feature-specific landing sites for operators (cf. Zwart 1993, Koopman 1996), (b) explain various ordering restrictions between operators and complementizer heads (cf. Rizzi 1995); and (c) account for morphologically complex complementizers in languages like Korean.

One such proposal is offered by Bhatt and Yoon (1991). Bhatt and Yoon observe that morphemes within COMP can have at least two potentially distinct roles: First, they can function as simple subordinators, which close off the clause and allow it to act as an argument of a higher predicate (*hogy* in Hungarian would be an example of such a morpheme). Secondly, complementizers may mark clause-type, or 'force'. Force morphemes introduce interpretable features such as [Q], and may be selected by a higher head. In English and many other languages, these two functions, subordination and force marking,

are conflated into a single set of elements such as *that* and *whether*. But in other languages, the two functions are marked by separate morphemes. Korean is one such language, as illustrated in (22)-(23). Here force is marked (in both root and embedded clauses) by the declarative morpheme *-ta* and the question morpheme *-ni/-nya*, while subordination is marked by the morpheme *-ko* (examples from Bhatt and Yoon 1991).

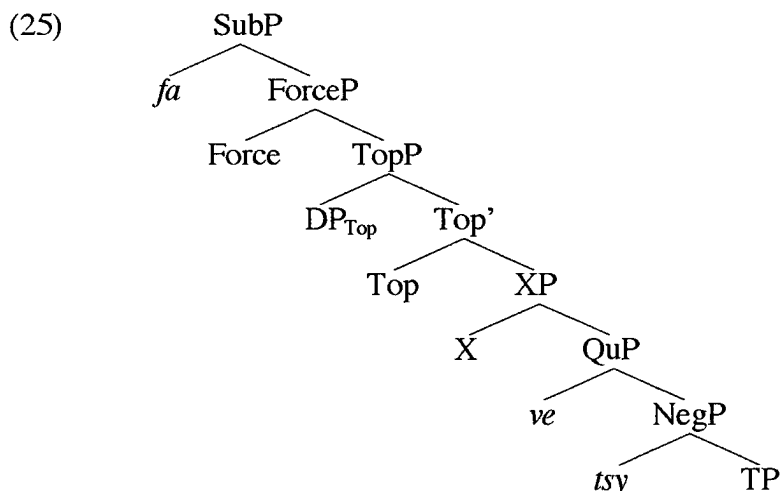
- (22) a. John-i        wa-ss-**ta**  
           John-Nom   come-Pst-Decl  
           "John came"
- b. Bill-un    [ John-i        wa-ss-**ta-ko**        ] sayngkakhanta  
           Bill-Top   John-Nom   come-Pst-Decl-Sub   thinks  
           "Bill thinks that John came"
- (23) a. John-i        wa-ss-**ni**?  
           John-Nom   come-Pst-Qu  
           "Did John come?"
- b. Bill-un    [ John-i        wa-ss-**nya-ko**        ] mwulessta  
           Bill-Top   John-Nom   come-Pst-Qu-Sub   asked  
           "Bill asked whether John came"

Bhatt and Yoon propose that COMP in languages like English consists of a single CP projection, the head of which marks both force and subordination; whereas in languages like Korean, COMP consists of a force phrase (or "mood" phrase, to use their term), to which the subordinator head is adjoined in embedded clauses. However, since adjunction to XP - and especially head-adjunction to XP - is prohibited under my assumptions, I will adopt the structure in (24) for all languages (where the SubP layer is present in embedded clauses, but absent in root clauses):

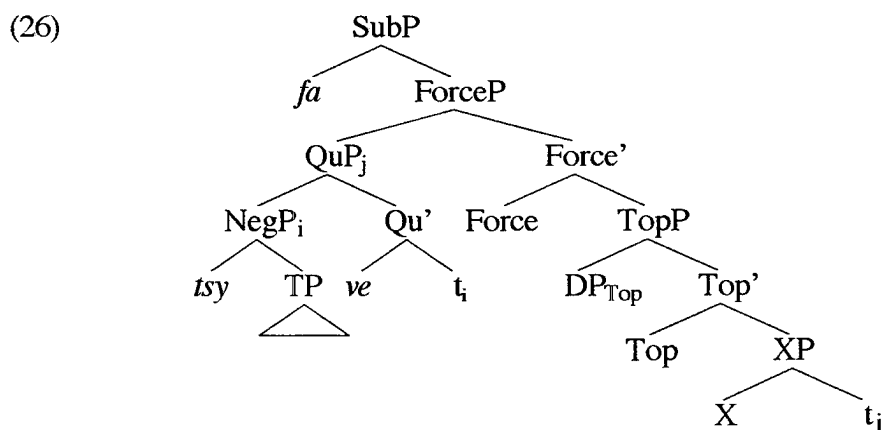
- (24)    [SubP   Sub°   [ForceP   Force°   [XP   ...   ]   ]   ]

For Korean, we would say that *-ko* is generated in Sub°, while *-ta* and *-ni/-nya* are generated in Force°. For complementizers like *whether* in English, a number of possible derivations can be explored: We might say that *whether* is generated in Sub° and selects a phonetically null ForceP complement containing a [Q] feature, or we might say that *whether* is itself a [Q] morpheme in the head of ForceP which undergoes obligatory raising to Sub° (thus explaining the absence of *whether* in root clauses).

As for Malagasy complementizers like *fa*, I will assume that they are generated in Sub° and that Force° is null. (Note that there is presumably some sort of feature matching between Qu° and Force°, so that when Force° has the feature [Q], Qu° must contain the particle *ve*.) Adding SubP and ForceP to the structure already assumed for Malagasy yields the tree in (25), which I argue represents the underlying structure for clauses (other functional heads which I have not discussed may also appear in this structure).



From this right-branching structure, it is a simple matter to obtain the surface order in (20) by means of XP movement: First NegP (or more likely, some projection containing NegP) raises to SpecQuP, after which QuP raises to SpecForceP. The derived structure is shown in (26):



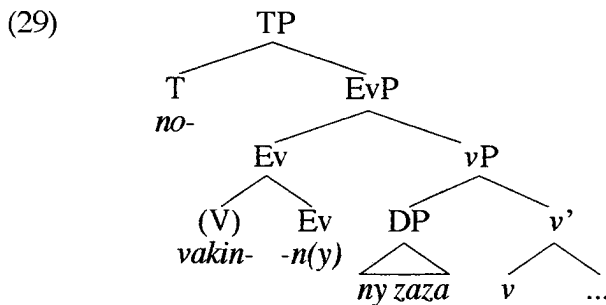
At this point we must ask: What motivates these movements? While the answer to this question remains obscure, I will present one possible approach to the problem below, based on recent Minimalist ideas of movement, as expounded in Chomsky (1995).

Chomsky argues that the operation Move should be reformulated as Attract-F(eature). Thus, for example, suppose that a head contains a feature [F] which needs to be checked for convergence. At some point in the derivation, this [F] will attract the closest available compatible feature [F'], causing [F'] to raise into the checking domain of [F]. If this movement is covert, Chomsky assumes, then [F'] will raise by itself, in accordance with principles of economy. However, if movement is overt (that is, if the target feature [F] is strong), then [F'] will carry along additional material - in particular phonological material. Chomsky calls this approach to movement 'generalized pied-piping'. Following his interpretation of economy, [F'] will carry along the minimum amount of material necessary for convergence, as determined by various output conditions (e.g. constraints on PF) which are independent of feature movement itself.

Chomsky gives an example of this involving wh-movement in English. In wh-questions, there is a feature in COMP which attracts [Wh] elements. This feature is strong in English, so the closest available [Wh] will raise overtly. Suppose that the [Wh]







So, given that the functional head *-n(y)* to which the verb *vakin-* has adjoined must form a phonological unit with the DP in SpecvP, it follows that if a [V] feature of *vakin-* is to raise overtly, it must carry the subject DP along with it (as well as the tense prefix in T°). Assuming that the tree in (29) is correct, the smallest category which can move to a higher position is thus TP. Hence, rather than head movement of V to Force° by way of Qu°, we get TP moving to SpecQuP, and QuP moving to SpecForceP. (It remains to be seen whether a PF constraint-based approach to movement, of the type outlined above, can be made to work for *all* cases of PredP raising in Malagasy. I intend to pursue this question in future research.)

## 5. A consequence of the predicate-raising story

Let me conclude this paper by discussing some evidence in favour of the Predicate raising story outlined in the previous section, based on word order in certain kinds of embedded clauses.

We know from a variety of languages that some clausal complements and adjuncts are smaller than others. For example, infinitival complements of control verbs in English are generally taken to be full CPs, while ECM and raising complements are IPs of some sort, and complements of verbs like *see* in *Lise saw Helen leave* are smaller still. Suppose we find evidence of clausal complements in Malagasy which are small enough that they arguably lack the ForceP projection. The traditional GHT account of Malagasy phrase structure, as illustrated in (2)/(21), would have nothing special to say about such clauses, since according to that analysis, the Predicate phrase is always below and to the left of the Topic. However, the Predicate raising story presented here makes a very clear prediction: In clauses which lack the ForceP projection there will be no attraction of PredP, and hence no leftward movement of PredP over the Topic. Such clauses should thus have Topic-Predicate order instead of Predicate-Topic order.

In fact, Topic-Predicate order *does* appear to be attested in a variety of clauses which appear to be smaller than ‘CP’, and which arguably lack force specifications of their own. For instance, take the case of ECM constructions, as illustrated in (30). Here the Topic *i Noro* appears to precede the Predicate within the ECM complement, and to receive the oblique marking characteristic of non-Topic direct objects:

- (30) Nanantena [ an’i Noro ho nianatra tsara ] Rakoto  
 Pst-hope:NT Obl-Det Noro Comp Pst-study:NT good Rakoto  
 “Rakoto hoped for Noro to study well”

Now, it is possible that the order in (30) is derived by overt raising of the embedded Topic into a higher position (say, to SpecAspP within the matrix clause, as suggested in Travis 1991). If such were the case, then ECM constructions would not be a convincing example of Topic-Predicate order in embedded clauses, since the Topic could have raised from its canonical position following the Predicate, as shown by the placement of the trace in (31):

- (31) Nanantena an'i Noro<sub>i</sub> [ ho nianatra tsara t<sub>i</sub> ] Rakoto  
 Pst-hope:NT Obl-Det Noro Comp Pst-study:NT good Rakoto  
 "Rakoto hoped for Noro to study well"

However, there is some evidence to suggest that ECM Topics do not raise into the matrix clause overtly, and that the analysis in (31) is thus incorrect. Recall from examples like (1) above that adjunct PPs follow direct objects in Malagasy. We would thus predict that if the ECM Topic had raised out of its clause to the matrix direct object position, it should precede a matrix PP adjunct.<sup>13</sup> In fact, as (32a-b) show, the preferred order is for the ECM Topic to follow a matrix PP adjunct.

- (32) a. Nanantena *tamin'ny fony manontolo* an'i Noro ho nianatra tsara Rakoto  
 "Rakoto<sub>i</sub> hoped *with all his<sub>i</sub> heart* for Noro to study well"
- b. ? Nanantena an'i Noro *tamin'ny fony manontolo* ho nianatra tsara Rakoto  
 "Rakoto<sub>i</sub> hoped for Noro *with all his<sub>i</sub> heart* to study well"

This fact suggests that *an'i Noro ho nianatra tsara* "for Noro to study well" is acting as a constituent. (Notice, though, that (32b), with the ECM Topic preceding the matrix adjunct, is not completely out, thus casting a certain amount of doubt on this conclusion.)

Whatever the proper analysis of ECM constructions turns out to be, other less controversial examples of Topic-Predicate order in embedded clauses can also be found. Take for instance the adverbial clauses shown in (33).

- (33) a. Faly Rabe tamin' [ iza mbola nipetraka tany Antsirabe ]  
 happy Rabe Pst-when 3s:Top still Pst-live:NT Pst-there Antsirabe  
 "Rabe was happy when he (still) lived in Antsirabe"
- b. Aza mitabataba satria [ ny rainareo mamaky ny bokiny ]  
 don't make noise because Det father-2p read:NT Det book-3s  
 "Don't make noise because you're father is reading his book"

Here we might suppose that the embedded Topic has raised over the Predicate in order to get (exceptional) Case from the preposition which heads the clause. For example, the Topic *iza* may have raised from a position following *Antsirabe* in order to get Case from *tamin(a)* "at, when". However, there is reason to doubt this possibility: Case-marked pronominal objects of most prepositions (including *tamin(a)*) occur in the bound form, as shown (9) above. By contrast, *iza* is the Topic form of the third person singular pronoun. I thus assume that *iza* is getting Case clause-internally rather than from *tamin(a)*, and that the order Topic-Predicate results from an absence of PredP raising - rather than from an underlyingly Predicate-Topic structure, where the Topic raises above the Predicate to get Case.

Finally, consider the example in (34), containing a clausal complement of a verb of perception. Here again we find Topic-Predicate order, where *Rabe* is in the unmarked Topic form. Evidence that the bracketed string in (34) is a constituent comes from (35), where *Rabe niditra tao an-trano* "Rabe came into the house" have undergone clefting:<sup>14</sup>

<sup>13</sup> Thanks to Diane Massam for suggesting this test to me.

<sup>14</sup> Note that *re* "heard" in (34)-(36) - along with *hita* "seen" in (37) - is an uninflected predicate with a stative/completive meaning, what Keenan (p.c.) refers to as a "root passive". Root passives pattern with AT forms of inflected verbs, in that it is the object of the root passive which appears in Topic position. In (34), it is the entire complement clause, *Rabe niditra tao an-trano* "Rabe came into the house", which has

- (34) Ren'ny zaza [ Rabe niditra tao an-trano ]  
 heard-Det child Rabe Pst-enter:NT Pst-there Obl-house  
 "The child heard Rabe come into the house"
- (35) [ Rabe niditra tao an-trano ] no ren'ny zaza  
 Rabe Pst-enter:NT Pst-there Obl-house Cleft heard-Det child  
 "Rabe coming into the house is what the child heard"

Now in this case, we might suppose that verbs of perception take VP complements, and that *Rabe* is a VP-internal subject. If this were the case, then the attested order would be predicted both by my tree and by the tree in (2), where the VP-internal subject position precedes the highest VP-internal head position for the verb. However, it seems unlikely to me that the bracketed constituent in (34) is a VP: First of all, the embedded verb is marked for tense. Secondly (and more importantly), the embedded verb can take the full array of 'voice' markings, as illustrated in (36) below, where the embedded verb is in the DT form. Furthermore, *Rabe* in (34)-(36) has the properties of a Topic rather than a VP-internal subject - e.g. it must be specific, and it need not be an Agent, but can carry any theta role. Thus the embedded clause in (34) must be large enough to include TopP.

- (36) Ren'ny zaza Rabe norosoan-dRasoana vary  
 head-the child Rabe Pst-serve:DT Rasoana rice  
 "The child heard Rabe being served rice by Rasoana"

Alternative analyses must also be considered, however. For instance, Ed Keenan (p.c.) notes that since relative clauses in Malagasy follow the relativized noun, and receive no special marking, it is possible that the bracketed string in (34) is not a clausal complement with Topic-Predicate order, but a nominal complement containing a relative clause. In other words, it may be the case that (37a), rather than (37b), is the correct analysis for such sentences:

- (37) a. Hitan'ny lehilahy [DP ny zaza [Rel namaky ny vilia ] ]  
 saw-Det man Det child Pst-break:NT Det dish  
 "The man saw the child who broke the dish"
- b. Hitan'ny lehilahy [(IP) ny zaza namaky ny vilia ]  
 saw-Det man Det child Pst-break:NT Det dish  
 "The man saw the child break the dish"

Given the availability of the structure in (37a), we might wonder if the structure in (37b) is available or not. In order to decide this question, we must determine whether *namaky ny vilia* is contained within the DP (as in (37a)), or not (as in (37b)).

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been topicalized - as shown by the position of *ve* in (i). It is also possible to topicalize just the embedded Topic *Rabe*, leaving the rest of the complement clause inside the Predicate, as in (ii):

- (i) Ren'ny zaza ve Rabe niditra tao an-trano?  
 heard-Det child Qu Rabe Pst-enter:ST Pst-there Obl-house  
 "Did the child hear Rabe come into the house?"  
 i.e. "Is (the fact that) Rabe came into the house such that the child heard (it)?"
- (ii) Ren'ny zaza niditra tao an-trano ve Rabe?  
 heard-Det child Pst-enter:ST Pst-there Obl-house Qu Rabe  
 "Did the child hear Rabe come into the house?"  
 i.e. "Is Rabe such that the child heard (him) come into the house?"

Luckily, Malagasy has a handy device for detecting the right edge of a DP, namely so-called “framing demonstratives”: A framing demonstrative consists of a pair of copies, where the first copy occurs at the leftmost edge of the DP, and the second copy occurs at the rightmost edge - regardless of how ‘heavy’ the DP is:

- (38) a. **ity** boky **ity**  
           this book this  
           “this book”
- b. **ity** boky mena **ity**  
           this book red this  
           “this red book”
- c. **ity** boky novakin’ny zaza tany an-tokotany **ity**  
           this book Pst-read:AT-Det child Pst-there Obl-garden this  
           “this book which the child was reading in the garden”
- d. \* **ity** boky **ity** novakin’ny zaza tany an-tokotany  
           this book this Pst-read:AT-Det child Pst-there Obl-garden  
           “this book which the child was reading in the garden”

Note in particular examples (38c-d), which show that the second copy of the framing demonstrative must follow a relative clause. Thus if *namaky ny vilia* “broke the dish” in (37) were a relative clause modifying *zaza*, we would expect the second copy of the framing demonstrative to follow it. On the other hand, if *namaky ny vilia* were the Predicate of an embedded clause, we would expect the second copy to precede it. As it turns out, both orders are attested, showing that verbs of perception may take either a DP complement containing a relative clause (39a), or a clausal complement with Topic-Predicate order (39b):

- (39) a. Hitan’ny lehilahy [DP **ity** zaza namaky ny vilia **ity** ]  
           saw-Det man this child Pst-break:NT Det dish this  
           “The man saw this child who broke the dish”
- b. Hitan’ny lehilahy [IP **ity** zaza **ity** namaky ny vilia ]  
           saw-Det man this child this Pst-break:NT Det dish  
           “The man saw this child break the dish”

We thus have considerable evidence for the existence of Topic-Predicate order in certain kinds of embedded clauses in Malagasy. This ‘inverted’ order is unexpected given the tree in (2)/(21). However, it is fully consistent with an analysis whereby the ‘normal’ Predicate-Topic order is derived by leftward movement of the Predicate over the Topic.

As a final note, compare the situation in Malagasy with that in Irish, where (finite) matrix clauses are VSO while (non-finite) embedded clauses are SOV or SVO (depending on dialect). Bobaljik and Carnie (1996), et al., explain this difference by claiming that the verb undergoes head movement to a position above the subject in finite clauses, but remains lower in non-finite clauses. If the analysis presented above is correct, then we have an analogous situation in Malagasy: The verb moves *above* the Topic in matrix clauses, but stays *below* the Topic in (certain kinds of) embedded clauses - the major difference being that verb raising in matrix clauses involves head movement in Irish, but XP movement (PredP raising) in Malagasy.

## 6. Conclusion

In this paper I have argued that Malagasy has a bipartite clause structure consisting of a Predicate constituent and a Topic field. I have also argued that the linear ordering of these elements, where the Predicate precedes the Topic, can be obtained without assuming that Malagasy has specifiers to the right of heads, if we assume that clauses have Topic-Predicate order underlyingly, and that the Predicate undergoes overt raising to a position above the Topic within an expanded COMP structure. In contrast to the traditional view of Malagasy phrase structure (as exemplified by the tree in (2)), the predicate raising theory makes a major prediction about word order in embedded clauses, namely that, in clauses where the landing site for PredP raising is absent, the order should be Topic-Predicate rather than Predicate-Topic. Initial evidence suggests that this prediction is borne out in a variety of cases.

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## Complex verbal constructions in Malagasy\*

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### 1. Introduction

Clausal complements have received mixed treatment within the principles and parameters approach to syntax. Some attention has focussed on the difference between the distribution of NPs compared to CPs (e.g. Stowell (1981)). Similarly, the possibility of sentential-like complements other than CPs (e.g. IPs, VPs) has stimulated much debate (see e.g. Rochette (1988)). For example, Chomsky (1981) analyzes Exceptional Case Marking as consisting of S-bar deletion, allowing government by the matrix verb into the embedded clause. With the development of the X-bar system, ECM was later seen as an instance of IP complementation.

Throughout these various discussions, Germanic and Romance have been the main languages of inquiry. Often, however, useful evidence has been drawn from more “exotic” languages. The goal of this paper is therefore to bring to light some interesting facts from Malagasy. Hopefully this paper will provide enough details for interested researchers to be able to draw upon. In other words, we will concentrate on the data, rather than on the theory.

Before turning to the data at hand, however, we begin with some important introductory comments on Malagasy. Malagasy is VOS, with NP complements following the verb and preceding the matrix subject. As will be seen below, this order is different with clausal complements. Like many Malayo-Polynesian languages, Malagasy has a complex verbal voice system: actor topic, theme topic and circumstantial topic. The first two correspond roughly to the active (1a) and passive (1b) of Indo-European languages, the third is used to make any oblique or adjunct the subject (1c).<sup>1</sup>

- (1) a. Nividy mofo hoan'ny ankizy ny vehivavy.  
pst.AT.buy bread for.det(gen) child det woman  
'The woman bought bread for the children.'
- b. Novidin'ny vehivavy hoan'ny ankizy ny mofo.  
pst.TT.buy.det(gen) woman for.det(gen) child det bread  
'The bread was bought by the woman for the children.'

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\* This paper draws on Ranaivoson (1984; 1985) for most of the tests and data. Unfortunately, not all of the data could be covered in this paper. The first author wrote the introductory sections, added some tests and translated the second author's work into English. Many thanks to Saholy Hanitriniaina for additional data.

<sup>1</sup> Abbreviations used in this paper:

|                |                       |                           |
|----------------|-----------------------|---------------------------|
| 1 - 1st person | nom - nominative      | AT - actor topic          |
| 2 - 2nd person | acc - accusative      | TT - theme topic          |
| 3 - 3rd person | gen - genitive        | CT - circumstantial topic |
| sg - singular  | det - determiner      | Apass - a passive         |
| pl - plural    | comp - complementizer | pst - past                |
| ex - exclusive | cl - cleft particle   | fut - future              |

Note also that lexical nouns are not marked for number and that all proper names are preceded by a determiner, either *i* or *Ra*.



- c. Nividianan'ny vehivavy mofo ny ankizy.  
 pst.CT.buy.det(gen) woman bread det child  
 'The children were bought bread for by the woman.'

The voice morphology interacts in an important way with certain syntactic processes in Malagasy. For an element to be extracted (e.g. by cleft, relativization, or wh-question) it must be the matrix subject.<sup>2</sup> This restriction is illustrated by the following contrast: for the object to be relativized the verb must bear passive voice morphology, as in (2b).

- (2) a. \*ny mofo izay nivity hoan'ny ankizy ny vehivavy  
 det bread comp pst.AT.buy for.det(gen) child det woman  
 'the bread the woman bought for the children'
- b. ny mofo izay novidin'ny vehivavy hoan'ny ankizy  
 det bread comp pst.TT.buy.det(gen) woman for.det(gen) child  
 'the bread bought by the woman for the children'

The voice alternation will be a useful diagnostic for the (non-) argument status of nominals in the complex verbal constructions to be discussed below.

We will first briefly survey different types of sentential complementation in Malagasy in section 2 and then turn our attention to what look like verbal complements to verbs in section 3. Section 4 presents some syntactic tests which distinguish different types of verbal complements. We do not propose an analysis, but end with some discussion of the directions future research may take.

## 2. Clausal complements

### 2.1 CP

This section draws on the discussion and data in Rajemisa-Raolison (1966). Here we introduce some examples of types of CP in Malagasy. Standard clausal complements in Malagasy are introduced by the complementizer *fa* 'that'.

- (3) Nino ny Malagasy taloha [CP fa misy Andriamanitra].  
 pst.AT.believe det Malagasy pst.before comp AT.exist god  
 'The Malagasy people used to believe that god exists.'

Comparing (3) and (1) we note that the clause introduced by *fa* appears to the right of the subject, rather than to the left like a regular NP object. Descriptively, the CP complement has been extraposed rightward to the clause-final position. Under one standard analysis, such "movement" may be due to the Case Resistance Principle, proposed by Stowell (1981): a CP cannot receive Case and therefore moves to preclude Case assignment. As we will see below, all CPs (complement or adjunct) appear to the right of the matrix subject.

Purpose clauses are marked with the complementizer *mba* as illustrated below:

- (4) Naka ity olona ity aho [CP mba hampianatra anao].  
 pst.AT.take this person this 1sg(nom) comp fut.AT.teach 2sg(acc)  
 'I took this person to teach you.'

<sup>2</sup> We do not have an explanation for these facts but assume them to be descriptively true. For a structural account, see Nakamura (1996). Note also that the subject of a sentential subject can extract. Keenan (1976) suggests this may be due to subject raising.

Note again that the clausal constituent is extraposed to the right of the matrix subject. Similarly causal (5), conditional (6), and temporal (7) clauses appear clause-finally.

- (5) Narary izy [CP satria nihinana voankazo manta].  
 pst.sick 3(nom) comp pst.AT.eat fruit unripe  
 'He fell sick because he ate unripe fruit.'
- (6) Homeko valisoa ianao [CP raha mety mihira].  
 fut.TT.give.1sg(gen) reward 2sg(nom) comp correct AT.sing  
 'I will give you a reward if you accept to sing.'
- (7) Nalahelo aho [CP tamin'ny zanako nandao ahy ].  
 pst.sad 1sg(nom) pst.at.det(gen) child.1sg(gen) pst.AT.leave 1sg(acc)  
 'I was sad when my child left me.'

We have uniformly labeled the clauses in (4) - (7) as CP for consistency, despite the differences in complementizer. While the exact category may in fact differ in each case,<sup>3</sup> all of these clauses appear in the same position. Summing up, Malagasy has many CP-like constituents which give rise to VSX word order. As we will see below, this word order does not occur in the complex verbal constructions that are the focus of this paper.

## 2.2 Raising to object

This section provides a brief overview of a phenomenon that is more extensively discussed in Paul and Rabaovalolona (1998). Raising to object is very productive in Malagasy, occurring optionally with most verbs that take a *fa* complement. This alternation is shown in (8).

- (8) a. Mihevitra Rabe [CP fa hanasa lamba Rakoto ].  
 AT.think Rabe comp fut.AT.wash cloth Rakoto  
 'Rabe thinks that Rakoto will wash clothes.'
- b. Mihevitra an-dRakoto ho hanasa lamba Rabe.  
 AT.think acc-Rakoto comp fut.AT.wash cloth Rabe  
 'Rabe thinks that Rakoto will wash clothes.'

Note that the clause introduced by *ho* is no longer in the extraposed position in (8b). Moreover, the embedded subject, *Rakoto*, has "moved" from its clause-final position in (8a) to before the embedded verb in (8b). Finally, *Rakoto* is marked with accusative Case like a standard direct object.<sup>4</sup> Here we have glossed *ho* as 'comp', but the exact nature of this particle remains mysterious; *ho* also serves as the future tense marker and the benefactive preposition. The construction in (8b) raises the question as to whether the NP *Rakoto* has raised into the matrix clause or remains within the subordinate clause. In other words, (8b) could be a case of raising to object or exceptional case marking, as illustrated by the structures in (9a) and (9b), respectively.<sup>5</sup>

<sup>3</sup> For example, the temporal clause in (7) resembles a PP. This may stem from the long-acknowledged indeterminacy between PPs and CPs (Emonds (1985)).

<sup>4</sup> Accusative Case is not overtly realized on all NPs as shown by the lack of Case-marking on the embedded object *lamba* in both (8a,b). Accusative Case surfaces on proper names, pronouns and nouns with certain demonstratives.

<sup>5</sup> In fact, other structures are possible. In (9), we have given the two standard views of RTO in the literature. For ease of exposition, in (9) we have omitted the "comp" *ho*. The position of *ho* has little bearing on the question as to whether raising has occurred or not, although it certainly bears on the question

- (9) a. V NP-acc<sub>i</sub> [ t<sub>i</sub> VP] NP-nom  
 b. V [ NP-acc VP] NP-nom

Whatever the final analysis, it is interesting to note that the subordinate clause in (8b) appears in the standard object position, unlike the CPs discussed above. We take this to be suggestive evidence that the structure in question does not involve an embedded CP.

Summing up, this section examined sentential complements in Malagasy. In general, CPs appear clause-finally. Raising to object constructions are an exception, however, and arguably the complement clause is not a CP. We now turn to verbal complements, which also differ from CPs in word order.

### 3. Verbal complements

The main body of this paper addresses complex verbal constructions. Descriptively, complex verbal constructions consist of a string of two verbs followed by any embedded arguments (e.g. *mofo* ‘bread’ and *ilay vehivavy* ‘that woman’ in (10e)) and the matrix subject.<sup>6</sup> We give some examples below:

- (10) a. Miditra mivoaka i Soa.  
 AT.insist AT.exit Soa  
 ‘Soa insists on going out.’
- b. Matory mitsangana ny akoho.  
 AT.sleep AT.stand det chicken  
 ‘The chickens sleep standing up.’
- c. Mijery miady ny namany izy.  
 AT.watch AT.fight det friend.3(gen) 3(nom)  
 ‘He watches his friends fight.’
- d. Manazatra miteny ny mpianany Rakoto.  
 AT.get.used.to AT.speak the student.3(gen) Rakoto  
 ‘Rakoto gets his students used to speaking.’
- e. Maniraka mividy mofo an’ilay vehivavy ianareo.  
 AT.send AT.buy bread acc’t that woman 2pl(nom)  
 ‘You are sending that woman to buy bread.’
- f. Mivoaka hitady hanina ny biby.  
 AT.exit fut.AT.look for food det animal  
 ‘The animals go out to look for food.’

Compared to the clausal complements described in section 2, complex verbal constructions lack an (overt) complementizer and there is no rightward extraposition past the matrix subject of the embedded “clause”.<sup>7</sup>

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of the constituency of the embedded clause. Note that in (9a) we also abstract away from word order: once raising has occurred, the base position of the NP is unclear.

<sup>6</sup> See section 4.4.1 for more discussion of word order in these constructions.

<sup>7</sup> We note here that we set aside certain sentence types that on the surface resemble those in (10). An example is given below.



- d. \*Manazatra ny miasa ny rahalahiko aho. (trans)  
 AT.get used to det AT.work det brother.1sg(gen) 1sg(nom)  
 'I get my brother used to working.'

As for *f* nominals, the verb appears with circumstantial topic morphology and the *f* prefix. The *f* nominalization of the second verb is even more limited than the zero nominalization. In fact, there is a one-way implication between the two tests: if the *f* nominal is grammatical then the zero nominal is as well, but not vice-versa. Thus although (12a) is grammatical, (12b) is not.

- (12) a. Miomana ny hikabary ny filoha.  
 AT.prepare det fut.AT.make-speech det president  
 'The president prepares the speech.'
- b. \*Miomana ny fikabariana ny filoha.  
 AT.prepare det f.CT.make-speech det president  
 'The president prepares the speech.'

*f* nominals are described in detail in Paul (1996).

#### 4.1.2 *amin'*

One of the most widespread prepositions in Malagasy, *amin'* can mean 'at', 'with', 'among', 'in'. (13) illustrates one of its uses.

- (13) Miresaka amiko i Soa.  
 AT.speak at.1sg(gen) Soa  
 'Soa speaks with me.'

In many cases where the *f* nominalization of the second verb in a complex verbal construction is ungrammatical, the sentence is improved with the addition of *amin'*.

- (14) a. Mikiry \*(amin') ny fianarana i Soa.  
 AT.insist at.det(gen) f.CT.study Soa  
 'Soa insists on studying.'
- b. Mifofotra \*(amin') ny fanetsana vary ny tantsaha.  
 AT.apply at.det(gen) f.CT.plant rice det peasant  
 'The peasants apply themselves to planting rice.'

Preposition insertion in (14) suggests that the relation between the matrix and subordinate verb is indirect. Interestingly, both verbs in (14) can select a zero nominal. This difference may arise from the difference between the two types of nominalization: the zero nominal is more clause-like while the *f* nominal is more noun-like and can be replaced with a nonderived NP.

#### 4.1.3 *eo amin'*

In certain cases, where the second verb can be interpreted as locative, the *f* nominal is preceded by *eo amin'*, where *eo* is a locative element meaning 'here'.<sup>8</sup>

<sup>8</sup> Here we simplify greatly; Malagasy has a very complex system of locative elements.

- (15) a. Manosika eo amin'ny fidirana anay ianareo.  
 AT.push here at.det f.CT.enter 1plex(acc) 2pl(nom)  
 'You push us toward the entrance.'
- b. Mirohotra eo amin'ny fivoahana ny olona.  
 AT.rush here at.det f.CT.exit det person  
 'The people rush to the exit.'

This last test is the most limited of the three with nominalizations, being possible only when the second verb can be a location. As mentioned above, the *f* nominal can be replaced with a nonderived NP.

- (16) Mirohotra eo amin'ny varavarana ny olona.  
 AT.rush here at.det(gen) door det person  
 'The people rush to the door.'

#### 4.2 *The second verb as subject*

As mentioned in section 1, Malagasy has an intricate voice system with active, passive and circumstantial topic morphology on verbs. Interestingly, in complex verbal constructions the second verb can in some cases be promoted to matrix subject with the circumstantial voice on the matrix verb. This is in fact possible with most of the verbs considered in this study. Those that are not possible ((19) and (20)) seem to form a natural class: the second verb acts more like an verbal modifier rather than a complement.

- (17) a. Manosika miditra anay i Sahondra.  
 AT.push AT.enter 1plex(acc) Sahondra  
 'Sahondra urges us to go in.'
- b. Anosehan'i Sahondra anay ny hiditra.  
 CT.push.Sahondra(gen) 1plex(acc) det fut.AT.enter  
 'Sahondra urges us to go in.'  
 lit. 'To go in is urged us by Sahondra.'
- (18) a. Mikiry hianatra i Soa.  
 AT.insist fut.AT.study Soa  
 'Soa insists on studying.'
- b. Ikirizan'i Soa ny hianatra.  
 CT.insist.Soa(gen) det fut.AT.study  
 'Soa insists on studying.'
- (19) a. Mikanakana miteny i Bozy.  
 AT.stammer AT.speak Bozy  
 'Bozy stammers while speaking.'
- b. \*Iakanakanan'i Bozy ny miteny.  
 CT.stammer.Bozy(gen) det AT.speak
- (20) a. Mandrora mitsilany i Rija.  
 AT.spit AT.lie Rija  
 'Rija spits while lying on his back.'

- b. \*Androran'i Rija ny mitsilany.  
CT.spit.Rija(gen) det AT.lie

Despite the wide range of constructions considered, the above test appears to divide the verbal complements into two categories: complement-like ((17) and (18)) and adjunct-like ((19) and (20)).<sup>9</sup>

There is a third type of verb which does not allow the alternation in (17) and (18): perception verbs.

- (21) a. Mijery ny namany miady i Sahondra.  
AT.watch det friend.3(gen) AT.fight Sahondra  
'Sahondra watches her friends fight.'
- b. \*Ijeren'i Sahondra ny namany ny miady.  
CT.watch.Sahondra(gen) det friend.3(gen) det AT.fight

We believe that the ungrammaticality of (21b) stems from the nature of the complement to the perception verb. The test suggests a three-way split: VP complements ((17) and (18)), VP adjuncts ((19) and (20)), and SC complements ((21)). In other words, the SC predicate cannot be promoted to the matrix subject. We discuss perception verbs in more detail in section 5.

#### 4.3 Predicate cleft

In contrast to the test in 4.2 which appears to make a distinction between the types of complex verbal constructions, predicate cleft is grammatical with all types. Predicate cleft fronts the second verb, leaving the pronoun *izany* 'that' in the focus position.<sup>10</sup> A more accurate description might be the left dislocation of a cleft. In some cases, the preposition *amin'* is optionally inserted. Surprisingly, the appearance of *amin'* does not correlate with the examples mentioned in 4.1.2. Examples of predicate cleft are given below. The comma marks an intonational pause.<sup>11</sup>

- (22) a. Miditra, (amin') izany no anosehanareo anay.  
AT.enter at.that cl CT.push.2pl(gen) 1pl(acc)  
'To go in, that's what you urged us to do.'

<sup>9</sup> The reader may at this point consult the table in the appendix and note that neither of the verbs in (19) and (20) can take a zero nominal complement. This fact alone, however, does not rule out the structures in the (b) examples. For instance, several verbs which do not allow the zero nominal as a complement do allow the zero nominal to appear as subject. These include *mirohotra* 'rush', *mifaninana* 'compete', and *manazatra* 'make someone used to'.

<sup>10</sup> This test was modified to conform to Saholy Hanitriniaina's judgements. The original test simply left-dislocated the predicate, leaving the pronoun in the original position.

<sup>11</sup> Predicate cleft does not distinguish most types of complex verbal constructions. There is, however, one construction which refuses the predicate cleft.

- (i) a. Mitsambika-mikimpy ny adala.  
AT.jump AT.eyes closed det crazy  
'Crazy people jump with their eyes closed.'
- b. \*Mikimpy, (amin') izany no itsambikinanany adala.  
AT.eyes closed at.that cl CT.jump.det crazy  
'Their eyes closed, that's how crazy people jump.'

At this point, the difference between examples like (i) and (22c) are not clear and require further investigation.

- b. Miady, izany no ijerevany ny namany.  
 AT.fight that cl CT.watch.3(gen) det friend.3(gen)  
 ‘Fighting, that’s what he watched his friends doing.’
- c. Mitsangana, (amin’) izany no atorian’ny akoho.  
 AT.stand at.that cl CT.sleep.det chicken  
 ‘Standing, that’s how chickens sleep.’

The across-the-board grammaticality of predicate cleft suggests that complex verbal constructions do indeed form a unified class, despite other differences.

#### 4.4 *Position of embedded arguments*

The tests in 4.1 and 4.2 looked at the nature of the relation between the first and second verbs. The nominalizations tested whether the second verb could be a direct complement, the object of a preposition or a locative. The subject test gave a first approximation of whether or not the second verb is a complement to the first. We now examine the position and nature of embedded arguments.

##### 4.4.1 *Word order*

For those verbs identified as object control verbs, there arises a certain optionality of ordering between the embedded subject and the embedded verb. This is shown below.

- (23) a. Manosika hiditra anay ianareo.  
 AT.push fut.AT.enter 1plex(acc) 2pl(nom)  
 ‘You push us to enter.’
- b. Manosika anay hiditra ianareo.  
 AT.push 1plex(acc) fut.AT.enter 2pl(nom)  
 ‘You push us to enter.’

Interestingly, however, the word order in (23b) is preferred with pronouns (with some variation depending on the matrix verb). This recalls clitic climbing constructions in Romance languages.

##### 4.4.2 *Extraction*

The following tests were suggested by the first author to examine the nature of the relation between the first verb and the “arguments” of the second verb. More precisely, if the embedded verb has an overt subject and object, can these be extracted? If so, what voice morphology is necessary? Recall that voice morphology indicates the role of extracted NP (agent, theme, other). To illustrate extraction, we use *wh*-question formation, a sub-type of clefting. In the examples below, the voice morphology of each verb appears in bold. We begin with extraction out of CP complements, for comparison.

- (24) a. Mihevitra ianao fa hividy mofo ilay vehivavy.  
**AT**.think 2sg(nom) comp fut.**AT**.buy bread det woman  
 ‘You think that woman will buy bread.’
- b. Inona no heverinao fa hovidin’ily vehivavy?  
 what cl **TT**.think.2sg(gen) comp fut.**TT**.buy.det(gen) woman  
 ‘What do you think will be bought by that woman?’



- c. Iza no heverinao fa hividy mofo?  
 who cl TT.think.2sg(gen) comp fut.AT.buy bread  
 'Who do you think will buy bread?'

In (24b), the embedded object has been extracted and both the matrix and embedded verbs are passive. For embedded subject extraction, as in (24b), the matrix verb is again passive, while the embedded is passive. Such extraction is only possible, however, out of CP complements, not adjuncts. An illustrative example is given below.

- (25) a. Nalahelo i Sahondra tamin'ny Rasoana nanoroka an-dRabe.  
 pst.sad Sahondra pst.at.det(gen) Rasoana pst.AT.kiss acc-Rabe  
 'Sahondra was sad when Rasoana kissed Rabe.'
- b. \*Iza no nalahelo i Sahondra tamin'ny nanoroka an-dRabe?  
 who cl pst.sad Sahondra pst.at.det(gen) pst.AT.kiss acc-Rabe  
 'Who was Sahondra sad when kissed Rabe?'

In general, (overt) extraction is impossible out of all adjunct CPs.

Turning now to complex verbal constructions, it is interesting to note the use of both passive and circumstantial for the matrix verb.

- (26) a. Maniraka mividy mofo an'ilay vehivavy ianareo.  
 AT.send AT.buy bread acc'that woman 2pl  
 'You are sending that woman to buy bread.'
- b. Inona no anirahanareo an'ilay vehivavy vidina?  
 what cl CT.send.2pl(gen) acc'that woman TT.buy  
 'What are you sending that woman to buy?'
- c. Iza no irahinareo mividy mofo?  
 who cl TT.send.2pl(gen) AT.buy bread  
 'Who are you sending to buy bread?'
- (27) a. Manosika anay mividy mofo ianareo.  
 AT.urge 1plex(acc) AT.buy bread 2pl(nom)  
 'You urge us to study English.'
- b. Inona no anosehanareo anay ho vidina?  
 what cl CT.urge.2pl(gen) 1plex(acc) fut.TT.buy  
 'What do you urge us to buy?'
- c. Iza no atosikareo mividy mofo?  
 who cl Apass.urge.2pl(gen) AT.buy bread  
 'Who do you urge to buy bread?'

Generally, if an embedded subject is to be extracted, the lower verb remains active, while the matrix is passive, as in (26c) and (27c). For embedded objects, the lower verb is passive while the higher must be in the circumstantial voice, as seen in (26b) and (27b). These facts suggest that the embedded subjects are in fact matrix objects. In other words, these examples resemble control constructions in English, as in (28), where the matrix object controls a PRO in the embedded subject position.

- (28) Hannah forced Eve<sub>i</sub> [ PRO<sub>i</sub> to dance ].

Since the NP in question is an object, it extracts with passive voice. The embedded objects, on the other hand, are not arguments of the matrix verb and therefore the circumstantial voice is used for extraction. This suggests that the embedded subject is an argument of the matrix clause, as shown in the structure in (29).<sup>12</sup>

- (29) Manosika anay<sub>i</sub> [ PRO<sub>i</sub> hilitra ] ianareo.  
 AT.push 1plex(acc) fut.AT.enter 2pl(nom)  
 'You push us to enter.'

#### 4.5 Exceptional tense marking

As mentioned earlier, all verbs in Malagasy are inflected for tense. It would therefore be useful to examine any restrictions on the tense of the second verb in a complex verbal construction. Unfortunately, preliminary investigation has shown us that such a study lies well beyond the scope of the present paper. We only mention here some general patterns. First, many verbs force the second verb to have the same tense as the first verb: we call this "tense matching". Second, some verbs require a future tense on the second verb. The second group includes most verbs of intention and volition (control verbs). Further complicating this picture of tense marking, some prepositions and all locative elements are inflected for tense. In (30) below, the matrix verb selects a future second verb, but the locative element *any* can vary for tense: past (30a) or nonpast (30b). The difference in tense results in a difference in interpretation: the past tense (30a) indicates that Rasoa is no longer in Antananarivo, while with nonpast marking (30b) she may still be there.

- (30) a. Niakatra hiasa tany Antananarivo Rasoa.  
 pst.AT.go up fut.AT.work pst.there Antananarivo Rasoa  
 'Rasoa went up to work in Antananarivo.'
- b. Niakatra hiasa any Antananarivo Rasoa.  
 pst.AT.go up fut.AT.work there Antananarivo Rasoa  
 'Rasoa went up to work in Antananarivo.'

Importantly, all verbs in complex verbal constructions impose some kind of restriction on the tense of the second verb, whether it is a fixed tense (future) or tense matching.

### 5. In guise of a conclusion

#### 5.1 Complement vs. adjunct

We now return to the questions asked at the beginning of the paper. First, are complex verbal constructions an instance of complementation or adverbial modification? Our tentative answer is that there are both types. If the second verb can appear as the matrix subject, it is some kind of (direct or indirect) complement to the matrix verb. Otherwise the second verb is an adjunct to the first. Hopefully, more constructions will be found to test the validity of this claim.

#### 5.2 Embedded arguments

Second, what is the relation between the first verb and the arguments of the second? The data in 4.4 suggest that when the embedded subject is overt, it is in fact an argument of the matrix verb. In this way, the verbs in question, *manosika* 'urge', *manazatra* 'make someone used to something', *maniraka* 'send', all act like standard control verbs. A study

<sup>12</sup> In the structure in (29), we abstract away from the possible constituency of the embedded clause and hence the exact position of PRO.

of control verbs in Malagasy is necessary to fully develop this claim. It is interesting to note that although embedded objects are not arguments of the matrix verb, they can still be extracted. This suggests that the circumstantial voice is a kind of default voice, used for nonarguments in general. Clearly, a better understanding of circumstantial topic is necessary. Is it purely structural, resulting from some form of P-incorporation, as suggested by Guilfoyle, Hung and Travis (1992)? The data in this paper imply that this is not the correct approach. On the other hand, the predicate building analysis of Keenan (in press) posits that the circumstantial voice maps to a function of the sort denotable by a preposition. Here, too, the data in 4.4 are problematic as in no way can the embedded object be interpreted as the object of a preposition with respect to the matrix verb.

### 5.3 *Constituency*

Third, what is the constituency of the embedded XP? This last question is a little thornier than the others. Since all verbs are inflected for tense in Malagasy, the standard distinctions between CPs, IPs and VPs are even more blurred than in languages such as English. We conjecture here that the constituent in question is probably smaller than either a CP or an IP. The lack of a complementizer and rightward extraposition combined with the tense dependencies suggest an XP smaller than a full clause. At the same time, the second verb does carry complete tense and voice morphology which implies something larger than a single VP. With the development of articulated IP structure and the subsequent increase in functional projections, there are quite a few possibilities: AgrP, TP, EP, etc.

### 5.4 *Perception verbs*

Finally, we point out that among all the verbs we looked at there may be differences in the constituency of the complement. For example, perception verbs appear to take a complement that differs from other complex verbal constructions. The first difference, noted in 4.4.1, arises in the word order. Unlike other complex verbal constructions, the preferred order is V NP-acc V NP-nom. The second difference involves the embedded subject. On the one hand, the embedded subject acts like an argument of the matrix verb: it can passivize to subject, as in (31a). On the other hand, the embedded subject and the embedded verb together form a constituent that can passivize to subject. This is illustrated in (31b).

- (31) a. Jeren'i Sahondra miady ny namany.  
 TT.see.Sahondra(gen) AT.fight det friend.3(gen)  
 'Sahondra watched her friends fight.'
- b. Jeren'i Sahondra [ izy miady ].  
 TT.see.Sahondra(gen) 3(nom) AT.fight  
 'Sahondra watched them fight.'

That the bracketed string in (31b) is in subject position can be shown by certain subject tests, such as the placement of the question particle and the possibility of clefting.

- (32) a. Jeren'i Sahondra ve [ izy miady ]?  
 TT.see.Sahondra(gen) Q 3(nom) AT.fight  
 'Did Sahondra watch them fight?'

- b. [ Izy miady ] no jeren'i Sahondra.  
 3(nom) AT.fight cl TT.see.Sahondra(gen)  
 'It was them fighting that Sahondra watched.'

It therefore appears that perception verbs take something like a SC complement. This complement acts like a real argument of the matrix verb, something like a CP complement, as shown by the passive in (31b). As discussed in Pearson (1998), the bracketed constituent is (not always) a nominal containing a relative clause. Demonstratives in Malagasy frame the NP: the first appears on the left edge and the second at the right edge.

- (33) Hitan'ny lehilahy [ ity zaza ity namaky ny vilia ].  
 seen.det(gen) man this child this pst.AT.break det dish  
 'The man saw this child break the dish.'

The placement of the demonstrative *ity* 'this' in (33) indicates that the complement to perception verbs is clausal rather than nominal.

### 5.5 *Future research*

As mentioned in the introduction, we hope that the data presented in this article will stimulate reflection on complex verbal constructions in Malagasy. We have pointed out some initial sub-groupings which future research may prove to be valid. For example, some control verbs seem to exhibit restructuring. This suggestion could be followed up by looking at long passives and word order. Moreover, the proposed distinction between the complements to perception verbs and other verbs could be tested by looking at binding. For example, binding by a matrix subject to a reflexive in the complement to a perception verb is possible.

- (34) Mandre ny tenany mitomany Bakoly.  
 AT.hear det self AT.cry Bakoly  
 'Bakoly hears herself cry.'

Whether or not binding in complex verbal constructions is possible remains to be investigated.

## Appendix

verbs and tests used in this study

|                                    | zero nominal | <i>f</i> nominal | <i>amin'</i> | <i>eo amin'</i> | 2nd V as subj | predicate cleft | extraction of subj2 |
|------------------------------------|--------------|------------------|--------------|-----------------|---------------|-----------------|---------------------|
| <b>CONTROL</b>                     |              |                  |              |                 |               |                 |                     |
| <i>mangataka</i><br>'ask'          | ✓            | ✓                | *            | *               | ✓             | ✓               | n/a                 |
| <i>maniry</i><br>'wish'            | ✓            | ✓                | *            | *               | ✓             | ✓               | n/a                 |
| <i>mizatra</i><br>'get used to'    | ✓            | ?                | ✓            | *               | ✓             | ✓               | n/a                 |
| <i>mikiry</i><br>'insist'          | ✓            | ?                | ✓            | *               | ✓             | ✓               | n/a                 |
| <i>mifofotra</i><br>'apply'        | ✓            | ?                | ✓            | *               | ✓             | ✓               | n/a                 |
| <i>miomana</i><br>'prepare'        | ✓            | *                | ✓            | *               | ✓             | ✓               | n/a                 |
| <i>mirohotra</i><br>'rush'         | *            | *                | *            | ✓               | ✓             | ✓               | n/a                 |
| <i>mifaninana</i><br>'compete'     | *            | ?                | ✓            | *               | ✓             | ✓               | n/a                 |
| <i>mianatra</i><br>'study'         | ?            | ✓                | *            | *               | ✓             | ✓               | n/a                 |
| <i>miditra</i><br>'insist'         | ✓            | ✓                | *            | *               | ✓             | ✓               | n/a                 |
| <i>maniraka</i><br>'send'          | *            | *                | *            | *               | *             | ✓               | passive             |
| <i>manosika</i><br>'push, urge'    | ✓            | ✓                | ✓            | ✓               | ✓             | ✓               | passive             |
| <i>manazatra</i><br>'make used to' | *            | ?                | ✓            | *               | ✓             | ✓               | passive             |
| <b>PERCEPT</b>                     |              |                  |              |                 |               |                 |                     |
| <i>mijery</i><br>'watch'           | *            | ✓                | *            | *               | *             | ✓               | passive             |
| <b>ADVERB</b>                      |              |                  |              |                 |               |                 |                     |
| <i>mandrora</i><br>'spit'          | *            | *                | ?            | *               | *             | ✓               | n/a                 |
| <i>miakanakana</i><br>'stammer'    | *            | *                | ✓            | *               | *             | ✓               | n/a                 |
| <i>matory</i><br>'sleep'           | *            | *                | ?            | *               | *             | ✓               | n/a                 |
| <i>mivoaka</i><br>'go out'         | *            | *                | *            | *               | *             | ✓               | n/a                 |

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