

THE SYNTAX OF THE MALAGASY RECIPROCAL
CONSTRUCTION: AN LFG ACCOUNT

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ABSTRACT

The verbal reciprocal construction in Malagasy is formed by a reciprocal morpheme prefixing on the main verb with a corresponding loss of an overt argument in c-structure. Analyses of similar constructions in Chichewa and Catalan both treat the reciprocalized verb's argument structure as undergoing an alteration whereby one of its thematic roles is either suppressed or two thematic arguments are mapped to one grammatical function. In this paper I propose that the reciprocal morpheme in Malagasy creates a reciprocal pronoun in f-structure - thus maintaining its valency and leaving the argument structure of the verb unchanged, while at the same time losing an argument at the level of c-structure.

1. INTRODUCTION

Malagasy is an Austronesian language and is the dominant language of Madagascar. The Malagasy sentences used in the analysis below are from the literature - in particular from a paper by Keenan and Razafimamonjy (2001) titled "Reciprocals in Malagasy" whose examples are based on the official dialect of Malagasy as spoken in and around the capital city Antananarivo.

The Malagasy reciprocal construction is formed by the addition of a prefix *-if-* or *-ifamp-* to the stem of the verb accompanied by the loss of an overt argument in object position. Compare sentence (1a) below with its reciprocated equivalent (1b):

(1) Malagasy

a. *N-an-daka an-dRabe Rakoto*
pst-act-kick acc.Rabe Rakoto
V O S

'Rakoto kicked Rabe'

b. *N-if-an-daka Rabe sy Rakoto*
pst-rec-act-kick Rabe and Rakoto
V S

'Rabe and Rakoto kicked each other'

(Keenan & Razafimamonjy 2001:47)

Like Malagasy, the verbal reciprocal constructions in Chichewa and Catalan are similarly formed by a reciprocal morpheme attaching to the verb with a corresponding loss of an overt argument in c-structure. Furthermore, all the participants involved in the reciprocal relation are grouped into a plural NP:

(2) Chichewa (for same gender nouns)

a. *Galimoto inagunda njinga*
car it-past-hit-fv bicycle (where car and bicycle have the same gender)
'The car hit a bicycle'

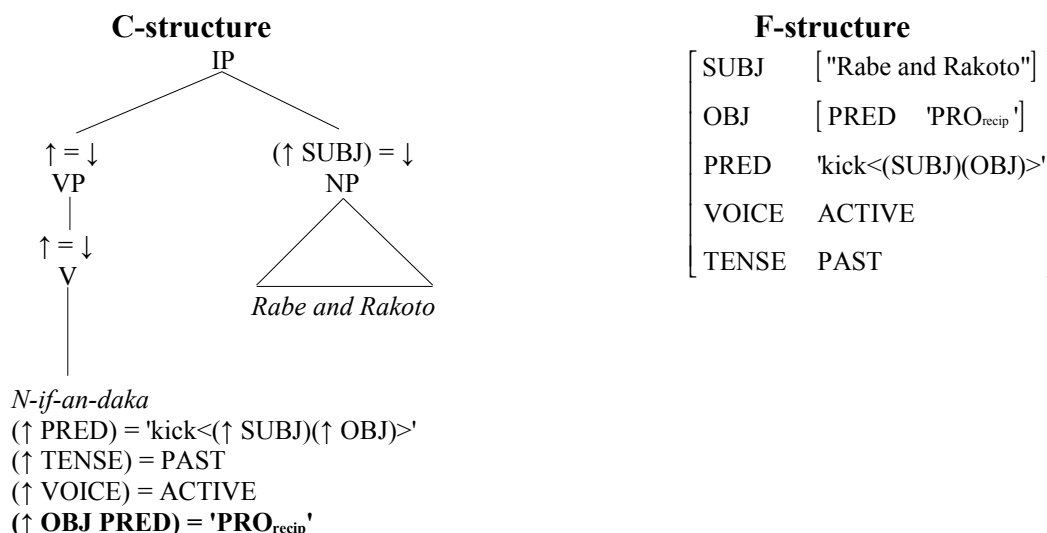
b. *Njinga inagunda galimoto*
bicycle it-past-hit-fv car
'A bicycle hit a car'

c. *Galimoto ndi njinga zinagundana*
car and bicycle it-past-hit-rec-fv
'A car and a bicycle hit each other'

(Mchombo & Ngalande 1980)

However, the architecture of LFG allows for another way of representing reciprocal constructions. Under this representation, the a- and f-structures of the verb remain unchanged when it is reciprocated and instead, a reciprocal pronoun sits in the object position of the f-structure of the clause. Under this analysis, sentence (1b) has the f- and c-structures given in figure 3:

Figure 3. The Valency Preserving Analysis of 'Rabe and Rakoto respect each other'



I call this analysis the “valency preserving analysis” because the verb's valency at the level of f-structure doesn't change when it's reciprocated. This is because the object position in the f-structure is filled by a reciprocal pronoun. This reciprocal pronoun is created by the reciprocal morpheme which has the definition given in (4):

(4) *-if-* / *-ifamp-* (↑ OBJ PRED) = 'PRO_{recip}'

The definition for this reciprocal morpheme can be found in the lexical entries associated with the verb in which it appears (for example, see the lexical entries for the verb *Nifandaka* in figure 3 above.)

The reciprocal pronoun is a place-holder for reciprocal semantics. The mechanics of how it's linked to reciprocal semantics are beyond the scope of this paper - however, this idea of a reciprocal pronoun is compatible with the work by Dalrymple, Kanazawa, Kim, Mchombo and Peters (1998) where they treat reciprocal expressions as quantifiers. For example, sentence (1b) expresses a proposition like (5) below which has a quantifier RECIP, a domain of *Rabe* and *Rakoto*, and a scope, or expression to which the quantifier is applied:

(5) RECIP({Rabe,Rakoto}, λxy.kick(x,y))

To conclude, the valency preserving analysis of reciprocal constructions exploits the parallel structures in LFG, allowing an object to be missing at the level of c-structure, yet present at the level of f-structure. This creates a mismatch in the valency of the verb - and in the following sections I explain how this mismatch can account for the behaviour of the Malagasy reciprocal construction.

2. THE MALAGASY RECIPROCAL CONSTRUCTION

In this section I examine the Malagasy reciprocal construction in more detail - in particular, the more complex syntactic environments which will prove instrumental in demonstrating the efficacy of the valency preserving analysis of the Malagasy reciprocal construction.

Sentence (6a) below shows a typical transitive sentence with VOS word order. The object, when it is a pronoun or a proper noun, receives an ACC case marker. The verb has two prefixes, a tense marker *N*, and a voice marker *-an-*. In general, verbal morphology can also indicate aspect, reciprocity and causality. Sentence (6b) shows the corresponding reciprocal construction and sentence (6c) shows a typical intransitive sentence:

(6) Transitive Verb

a. *N-an-daka an-dRabe Rakoto*
 pst-act-kick acc.Rabe Rakoto
 V O S
 'Rakoto kicked Rabe'

b. *N-if-an-daka Rabe sy Rakoto*
 pst-rec-act-kick Rabe and Rakoto
 V S
 'Rabe and Rakoto kicked each other'

Intransitive Verb

c. *M-i-jaly Rabe*
 pres-act-suffer Rabe
 V S
 'Rabe suffers'

(Keenan & Razafimamonjy 2001:47,70)

As can be seen, the reciprocal construction is formed by:

- Prefixing the *-if-* morpheme to the verb.
- Gathering the participants into a plural (usually subject) NP.
- The loss of an overt, non-subject argument.

It is clear when examining these simple sentences that the reciprocal construction resembles an intransitive construction. It should be noted that treating *Rabe* and *Rakoto* in (6b) as the subject of the sentence is uncontroversial and can be demonstrated by a variety of tests. For example, Keenan and Razafimamonjy (2001) demonstrate that the subject NP in (6b) can be relativized - an operation only available to subject NPs in Malagasy:

(7) *Ny olona (izay) n-if-an-daka*
 the people rel pst-rec-act-kick
 The people (that) were kicking each other

(Keenan & Razafimamonjy 2001:22)

Keenan & Razafimamonjy (2001:22) provide further evidence demonstrating that the remaining argument is in fact the subject of the clause. For example, *Rabe* and *Rakoto* can be substituted with the nominative pronoun *izy*, but not its accusative equivalent *azy*. Keenan & Razafimamonjy (2001:22) state that comparable claims regarding the subjecthood of the NP hold for the other reciprocal sentences they studied (and which appear below) such as those formed from ditransitive or semi-transitive verbs.

The reciprocal construction in Malagasy is very productive, appearing with verbs with a variety of arities and in a variety of constructions. The examples below are by no means exhaustive. In (8) below, the ditransitive verb *manome* 'give' is missing its indirect object rather than its direct object when reciprocated:

(8) Ditransitive Verb

- a. *M-an-ome vola an-dRabe Rakoto*
 pres-act-give money acc.Rabe Rakoto
 V DO IDO S
 'Rakoto gives money to Rabe'

- b. *M-if-an-ome vola Rabe sy Rakoto*
 pres-rec-act-give money Rabe and Rakoto
 V DO S
 'Rabe and Rakoto give money to each other'

(Keenan & Razafimamonjy 2001:49)

In (9a) below the semi-transitive verb *mipetraka* 'sit' takes the prepositional phrase “near Ranaivo” as a complement. The reciprocal equivalent to (9a) retains the preposition, but the NP it selected is now missing:

(9) Semi-transitive Verb

- a. *M-i-petraka akaikin-dRabe Ranaivo*
 pres-act-sit near-Rabe Ranaivo
 V OBL S
 'Ranaivo is sitting near Rabe'

- b. *M-ifamp-i-petraka akaikin Rabe sy Ranaivo*
 pres-rec-act-sit near Rabe and Ranaivo
 V Prep S
 'Rabe and Ranaivo are sitting near each other'

(Keenan & Razafimamonjy 2001:50)

Sentences (10) and (11) are examples of causative and circumstantial constructions - both of which can co-occur with the reciprocal construction:

(10) Causative Constructions

- a. *N-if-an-daka Rabe sy Rakoto*
 pst-rec-act-kick Rabe and Rakoto
 'Rabe and Rakoto kicked each other'

- b. *N-amp-if-an-daka an-dRabe sy Rakoto aho*
 pst-caus-rec-act-kick acc.Rabe and Rakoto 1sg.nom
 'I made Rabe and Rakoto kick each other'

(Keenan & Razafimamonjy 2001:67)

(11) Circumstantialization

- a. *N-if-an-tao farafara amin'ity vy ity Rabe sy Rakoto*
 pst-rec-act-do bed with.this metal this Rabe and Rakoto
 'Rabe and Rakoto made each other beds from this metal'

- b. *N-if-an-tao-van-dRabe sy Rakoto farafara ity vy ity*
 pst-rec-act-do-circ.Rabe and Rakoto bed this metal this
 lit. 'This metal was made by Rabe and Rakoto beds for each other'
 'This metal was made into beds for each other by Rabe and Rakoto'
 (Keenan & Razafimamonjy 2001:56)

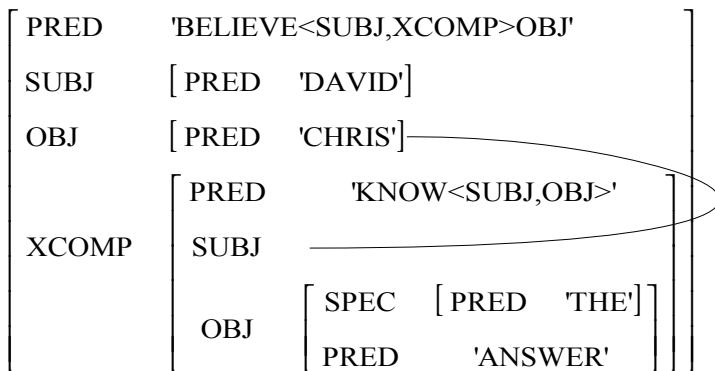
The analysis of reciprocalized circumstantial, nominalization and causative constructions will not form part of this paper.¹

The first thing we see is that the reciprocal construction in Malagasy involves the loss of an overt argument. When simple transitive sentences are reciprocalized (e.g., 6b), they look just like intransitive sentences (e.g., 6c). In fact, if we were to examine only simple sentences, it would seem that the valency reducing analysis Mchombo made for Chichewa could be simply applied to Malagasy. What is needed are some syntactic environments which can tease apart these two analyses by showing that the valency of the verb has actually changed. I turn to two of these environments in sections 3 and 4 below.

3. FUNCTIONAL CONTROL

One environment which can be used to test the valency of a verb at the level of f-structure is functional control. In figure 4 below, I have reproduced the standard LFG analysis for the verb *believe* when used in a functional control sentence.

Figure 4. “David believed Chris to know the answer.”



(Dalrymple 2001:314)

In the sentence *David believed Chris to know the answer*, *Chris* is acting as both the object of the main verb *believe* and as the subject of the lower verb *know*. Functional control constructions can be used to test the valency of the main verb because of the presence of the shared object. The valency preserving analysis of the Malagasy reciprocal construction predicts that the main verb in functional control sentences should be able to be reciprocalated because the object is still present at the level of f-structure and is able to act as the subject of the lower clause. On the other hand, the valency reducing analysis of reciprocal constructions predicts the main verb should not be able to be reciprocalated. This is because the object is no longer present at the level of f-structure - leaving the lower clause without a subject.

¹ See Hurst (2003) for an account on how these constructions can be analysed in LFG.

3.1 Functional Control in Malagasy

I now turn to functional control in Malagasy. Among other features, Paul and Rabaovololona (1998) use the following criteria to identify a construction they call RTO: 'Raise to Object' in Malagasy:²

1. The embedded clause appears in typical object position (as opposed to other complements and sentential adjuncts which appear after the subject).
2. The embedded clause has atypical word order (SVO instead of VOS).
3. The complementizer *ho* is used instead of *fa*.

Compare (12a) and (12b) below to see the difference between a regular complement construction and an RTO construction:

(12)

- a. *N-i-laza an-dRaso a ho nambo ly vary Ravelo*
 pst-act-say acc.Raso a Comp pst.cultivate rice Ravelo
 [V O Comp V O] S]
 lit. 'Ravelo said Raso a to have cultivated rice'
 'Ravelo said Raso a has cultivated rice' -- 'RTO' Construction
- b. *N-i-laza Ravelo fa nambo ly vary i Soa*
 pst-act-say Ravelo Comp pst-cultivate rice Art Soa
 [V Subj] [Comp V Obj Subj]
 'Ravelo said that Soa cultivated rice' -- Complement Construction
 (Keenan & Razafimamonjy 2001:50-51)

The RTO construction in (12a) is indicated by the embedded clause *ho nambo ly vary* - 'to have cultivated rice' between the object and the subject of the main clause. In contrast to this, the complement construction in (12b) has a complement clause appearing after the subject of the main clause. Furthermore, the complement clause is a complete clause with an overt subject and it is introduced by the complementizer *fa*, whereas the RTO construction in (12a) uses *ho*.

The construction which Paul and Rabaovololona identify as RTO has all the hallmarks of functional control - and this is seen in the unusual status of the NP *Raso a* in (12a). *Raso a* receives accusative case marking suggesting that it is the object of 'say'. However, although *Raso a* in (12a) is marked as an object, it must also conform to the general requirement that all subjects in Malagasy be specific. This is demonstrated in (13) below, where the sentence *a child is reading a book* is grammatical with a subject NP that picks out a specific entity in the world, but non-grammatical with a non-specific subject:

- (13) *mamaky boky i Bao/izy/ ny zaza /ilay zaza/*olona/*zaza*
 pres-act-read book Bao/3SG/the child/that child/person/child
 'Bao/(s)he/the child/that child is reading a book'
 Some person/child is reading a book (Pearson 2001:19)

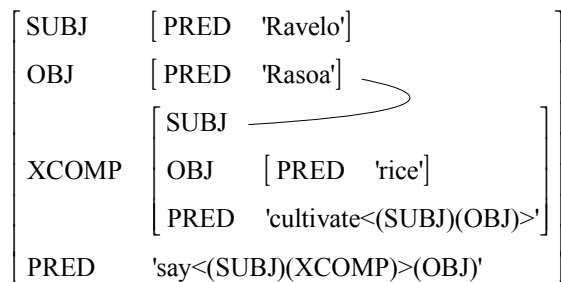
This specific subject requirement is also required of the NP marked in accusative case in RTO sentences. For example, in (14) a non-specific NP in the same position as *Raso a* renders the sentence ungrammatical:

² Paul and Rabaovololona use this term in a pre-theoretical sense - "we intend it (RTO) to describe a class of constructions without any implication as to the final analysis".

- (14) **M-i-hevitra zanaka ho hendry aho*
 pres-act-think child comp wise 1sg(nom)
 'I think some child is wise' (Paul & Rabaovololona 1998:55)

In other words, *Rasoa* in (12a) is acting as the object of main verb and so is marked with ACC case, and by acting as the subject of the lower clause, must also conform to the specific subject requirement. Figure 5 below shows the f-structure for sentence (12a) when analysed as functional control.

Figure 5. Functional Control: F-structure for (12a)



We now return to the issue raised at the start of this section - can functional control sentences in Malagasy be reciprocalized? As sentence (15b) demonstrates, the answer to this question is yes:³

(15)

- a. *N-i-laza an-dRasoa ho namboly vary Ravelo*
 pst-act-say acc. Rasoa Comp pst.cultivate rice Ravelo
 [V O [Comp V O] S]
 'Ravelo said Rasoa has cultivated rice'
 lit. 'Ravelo said Rasoa to have cultivated rice'
- b. *N-ifamp-i-laza ho namboly vary Rasoa sy Ravelo*
 pst-rec-act-say Comp pst-cultivate rice Rasoa and Ravelo
 [V [Comp V O] S]
 lit. 'Rasoa and Ravelo said each other to have cultivated rice'
 'Rasoa and Ravelo said of each other that s/he cultivated rice'
 *'Rasoa and Ravelo said "we cultivated rice"⁴

(Keenan & Razafimamonjy 2001:50-51)

In (15b) we see the reciprocal equivalent of (15a). An allomorph of the reciprocal morpheme, *ifamp*, has been prefixed to the main verb. The subject is now plural and the structure is accompanied by the lack of an overt NP in object position. As (15b) shows, the valency preserving analysis correctly predicts that functional control sentences can be reciprocalized. However, the grammaticality of this sentence creates problems if the valency reducing analysis is to be maintained. In section 3.2 below, I demonstrate precisely what these problems are, before demonstrating in section 3.3 how the valency preserving analysis of reciprocal constructions accounts for the grammaticality of sentences like (15b).

³ Sentence (12a) is reproduced here as (15a) for convenience

⁴ Keenan & Razafimamonjy (2001:50) specifically rule out the shared reciprocal reading in control verbs.

This change to the lexical entry of *nifampilaza* at least produces an f-structure which is well formed:

SUBJ	["Raso and Ravelo"]										
XCOMP	<table style="border-collapse: collapse;"> <tr> <td style="border-right: 1px solid black; padding-right: 10px;">SUBJ</td> <td style="padding-left: 10px;">["Raso and Ravelo"]</td> </tr> <tr> <td style="border-right: 1px solid black; padding-right: 10px;">OBJ</td> <td style="padding-left: 10px;">[PRED 'rice']</td> </tr> <tr> <td style="border-right: 1px solid black; padding-right: 10px;">PRED</td> <td style="padding-left: 10px;">'cultivate<(SUBJ)(OBJ)>'</td> </tr> <tr> <td style="border-right: 1px solid black; padding-right: 10px;">TENSE</td> <td style="padding-left: 10px;">PAST</td> </tr> <tr> <td style="border-right: 1px solid black; padding-right: 10px;">VOICE</td> <td style="padding-left: 10px;">ACTIVE</td> </tr> </table>	SUBJ	["Raso and Ravelo"]	OBJ	[PRED 'rice']	PRED	'cultivate<(SUBJ)(OBJ)>'	TENSE	PAST	VOICE	ACTIVE
SUBJ	["Raso and Ravelo"]										
OBJ	[PRED 'rice']										
PRED	'cultivate<(SUBJ)(OBJ)>'										
TENSE	PAST										
VOICE	ACTIVE										
PRED	'say_each_other<(SUBJ)(XCOMP)>'										
TENSE	PAST										
VOICE	ACTIVE										

However, this change cannot be maintained because reciprocalized control constructions can also be nominalized. In the case of nominalized reciprocated control expressions, the verb has lost both its subject and its object and so the lower clause is left without a subject.⁵ To conclude, the valency reducing analysis is difficult to maintain in the face of reciprocated functional control expressions.

3.3 Analysis 2. The Valency Preserving Analysis of the Malagasy Reciprocal Construction

In this section I consider the valency preserving analysis where the valency of the verb doesn't change when it's reciprocated. Under this analysis the reciprocated verb's PRED does not change at all and instead, the reciprocal interpretation arises from the presence of the reciprocal morpheme *-if-* which creates a reciprocal pronoun in object position in the f-structure.

Examining the lexical entries in (19) for *nifampilaza* 'say', we see that the reciprocated verb has the same lexical entry as its non-reciprocated counterpart, apart from the additional information provided by the reciprocal morpheme which creates a reciprocal pronoun in object position:

(18) *-if-/-ifamp-* (↑OBJ PRED) = 'PRO_{recip}'

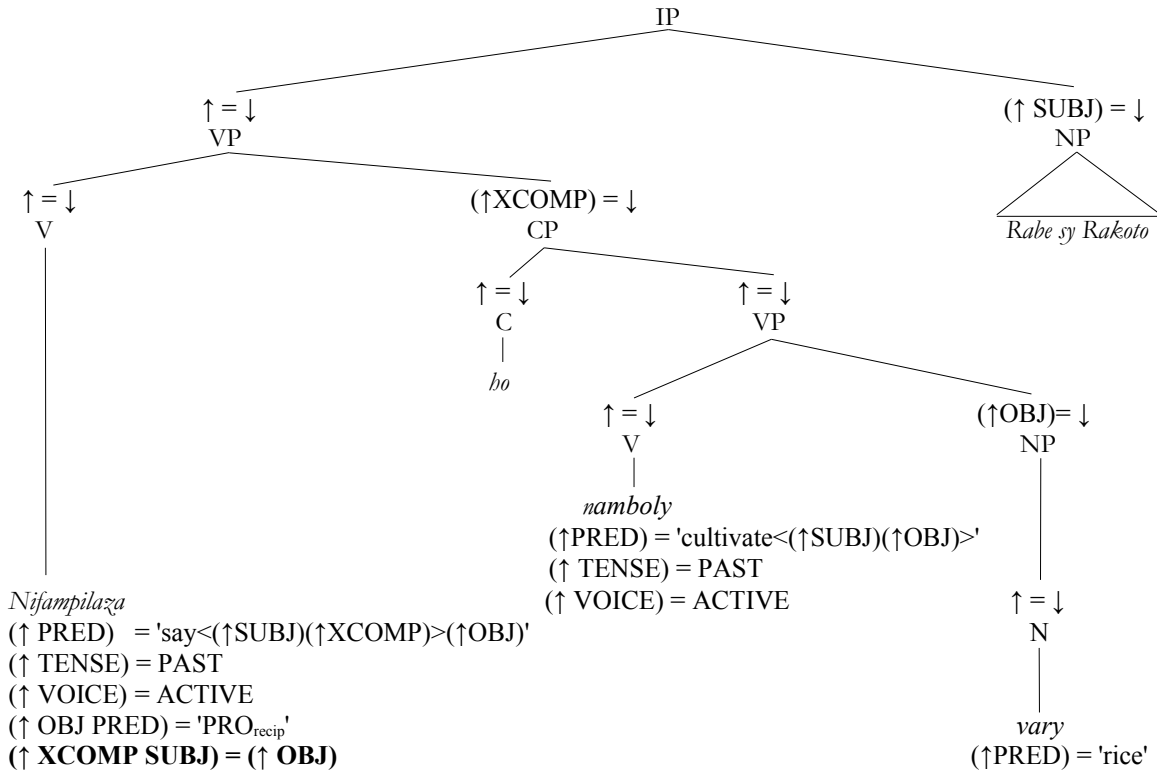
The lexical entries for (15b) are then:

(19)

<i>N-ifamp-i-laza</i>	v	(↑PRED) = 'say<(↑SUBJ)(↑XCOMP)>(↑OBJ)' (↑XCOMP SUBJ) = (↑OBJ) (↑OBJ PRED) = 'PRO _{recip} ' (from the rec. morpheme) (↑VOICE) = ACTIVE (↑TENSE) = PAST
<i>Namboly</i>	v	(↑PRED) = 'cultivate<(↑SUBJ)(↑OBJ)>' (↑VOICE) = ACTIVE (↑TENSE) = PAST
<i>Vary</i>	n	(↑PRED) = 'rice'

⁵ For a detailed account of the reciprocalization of nominalized control expressions in Malagasy, see Hurst (2003).

Figure 6. C-structure for sentence (15b)



The c-structure above results in the following complete and coherent f-structure:

SUBJ	["Rasoa and Ravelo"]
OBJ	[PRED 'PRO _{recip} ']
XCOMP	[SUBJ [PRED 'rice']]
	OBJ [PRED 'rice']
	PRED 'cultivate<(SUBJ)(OBJ)>'
	TENSE PAST
	VOICE ACTIVE
PRED	'say<(SUBJ)(XCOMP)>(OBJ)'
TENSE	PAST
VOICE	ACTIVE

This f-structure is both complete and coherent because the reciprocal pronoun is acting as both the subject of the XCOMP and the object of *say*. Because the valency preserving analysis does not change the valency of the reciprocated verb at the level of f-structure, the control construction does not require the invention of new syntactic rules to account for its reciprocal counterpart - reciprocal control constructions can be treated just like regular control clauses. In contrast to the valency decreasing analysis, the valency preserving analysis of the Malagasy reciprocal construction correctly predicts the grammaticality of reciprocated control expressions.

3.4 Summary

In section 3, I examined two possible analyses of the reciprocal construction in control sentences - one where the reciprocated verb has had its valency reduced in f-structure and another where the verb's valency remains unchanged and the reciprocal morpheme creates a reciprocal pronoun in the object position of the main verb.

The valency preserving analysis predicts that control constructions can participate in reciprocal relations - and this is what is observed. In contrast to this, the valency reducing analysis predicts that control sentences should be ungrammatical with a reciprocated verb. This analysis might be able to be saved by the questionable addition of a rule which changes the lexical entry of the verb so that the XCOMP's SUBJ no longer is linked with the object of the main verb, but with its subject - although for the reasons given above, I find this analysis unlikely.

4. POSSESSION CONSTRUCTIONS

Possession is another environment which helps us to understand the valency of a verb in f-structure. The valency preserving analysis of the Malagasy reciprocal construction predicts that sentences containing a possessor relation in object position should be able to be reciprocalized because the reciprocal pronoun can enter into a possession relation. In contrast to this, the valency decreasing analysis predicts that these sentences should not be able to be reciprocalized (unless entering into a new construction) because the resulting construction has no object. For example, the reciprocal construction in English, which uses an overt reciprocal pronoun, is able to enter into possessor relations:

(20) John and Mary saw each other's parents.

In (20) the reciprocal pronoun *each other* is acting as the possessor of *the parents*. Under a valency reducing analysis of reciprocity, the reciprocated verb loses an object - so it ought to be impossible to form reciprocated expressions of this type.

4.1 Possession in Malagasy

The Malagasy possession construction is fairly easy to form. However, the affected nouns do undergo some complex (but well understood) phonological changes (Paul 1996). The construction itself is formed by inserting the possessor noun to the right of the noun possessed with an attendant phonological change:

(21) *orona + olona* → *oron'olona*
 nose person nose of a person / a person's nose (Paul 1996:77)

In (22) below, the possession construction occurs in the object of the transitive verb *maka* - 'ravish/take'. The resulting interpretation is that it is *Rabe's* spouse being ravished, not *Rabe*. Note that the *-d* in front of *Rabe* is not a case marker, but rather the result of the phonological change which comes about from merging *vady* and *Rabe*.

(22)

a. *M-aka ny vadin-dRabe Rakoto*
 pres-take the spouse.of-Rabe Rakoto
 V [Obj] [Subj]
 'Rakoto ravishes the spouse of Rabe'

- b. *M-ifamp-aka vady Rabe sy Rakoto*
 pres-rec-take spouse Rabe and Rakoto
 V Remnant N Conj N
 'Rabe and Rakoto ravish each other's spouse' (Keenan & Razafimamonjy 2001:51)

Sentences such as (22a) can be reciprocalized productively as (22b) demonstrates. Examining (22b) we see that when reciprocalizing a sentence containing a possession construction in the object NP, the possessor disappears leaving, in this instance, just *vady* - the possessee. Following Keenan & Ralalaoherivony (1998), I will call what is left of the POSS construction after reciprocalization the remnant (*e.g.*, in (22b) above, *vady* is the remnant). How to account for where the remnant belongs syntactically under the valency decreasing and preserving analyses is investigated in sections 4.2 and 4.3 below.

4.2 Analysis 1. The Valency Reducing Reciprocal Construction

Under the valency reducing analysis, it is possible that the reciprocal possession construction is a new construction and in this section I investigate this possibility. Under this analysis the verb *maka*, 'ravish', no longer selects an object when reciprocalized:

- (23)
- a. *maka* v (↑PRED) = 'take<(↑SUBJ)(↑OBJ)>'
 b. *m-ifamp-aka* v (↑PRED) = 'take_each_other<(↑SUBJ)>'

Clearly, the remnant cannot belong to the object function under this analysis. So where can it belong? There are two possible candidates:

1. The Remnant Belongs to the Subject NP

We can immediately rule out this candidate. If *vady* were in a possessor relationship with the subject NP, it should have undergone the attendant phonological operation that binds it to the N or NP which possess it. For example compare (22b) with (24) where *vady* 'spouse' does belong to the subject NP:

- (24) *N-if-an-lainga ny vadin-dRavelo sy Rasoa*
 past-rec-act-lie [the spouse-of-Ravelo and Rasoa]
 'The spouses of Ravelo and Rasoa lied to each other' (Keenan & Ralalaoherivony, 1998:84)

That *vady* is unchanged in (22b) indicates that it is not in a possessor relation with the subject NP.

2. The Remnant is part of an External Possession Construction

Could the remnant be analysed as being in an external possession construction with the reciprocalized verb? Keenan and Ralalaoherivony (1998) detail several features which characterize the external possession construction in Malagasy. Among them are:

1. The loss of a determiner associated with the noun.
2. The newly formed verb+noun group acts as a prosodic word - question particles and adverbs can't be inserted between them.
3. There is a semantic shift where the subject of the verb is more involved in the event described.
4. Control verbs can't occur with the external possession construction (whether RTS or RTO).

Figure 7 below shows an example of a typical external possession construction.

Figure 7

<p><i>Maty ny vadin-dRabe</i> [died [the spouse-of-Rabe]] 'Rabe's spouse died/is dead'</p> <hr style="width: 80%; margin: 0 auto;"/> <p style="text-align: center;">Regular Possession</p>	↔	<p><i>Maty vady Rabe</i> [[died spouse] Rabe] 'Rabe was widowed' or 'Rabe underwent spouse death'</p> <hr style="width: 80%; margin: 0 auto;"/> <p style="text-align: center;">PossR / External Poss</p>
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(Keenan and Ralalaoherivony 1998:65)

Compare the external possession construction (25a) with the reciprocal construction (25b):

(25)

- a. *Maty vady Rabe*
dead spouse Rabe
'Rabe is widowed'

- b. *M-ifamp-aka vady Rabe sy Rakoto*
pres-rec-take spouse Rabe and Rakoto
'Rabe and Rakoto ravish each other's spouse'

At first glance, it appears possible that external possession can account for the remnant. However, there are two insurmountable problems in treating the remnant as being part of an external possession construction. The first is that it is possible to get phonetic material between the remnant and the verb. For example, the semi-transitive verb 'lie' *mandainga* in (26a) uses a preposition *amin* to introduce the oblique phrase. When this sentence is reciprocated the possessee remains, but is preceded by the preposition:

(26)

- a. *M-an-dainga amin'ny vadin-dRakoto Rabe*
pres-act-lie to.the spouse.of-Rakoto Rabe
V [OBL] S
'Rabe lies to Rakoto's spouse'

- b. *M-if-an-dainga amin-bady Rakoto sy Rabe*
pres-rec-act-lie to.spouse Rakoto and Rabe
'Rakoto and Rabe lie to each other's spouse(s)'

(Keenan & Razafimamonjy 2001:52)

Another example is in (27) where the possessor construction occurs in the indirect object. When reciprocated, the direct object is still between the remnant and the verb:

(27)

- a. *M-an-ome vola ny zanan-dRavelo Rasoa*
pres-act-give money the child.of-Ravelo Rasoa
V O [IDO] S
'Rasoa gives money to the children of Ravelo'

- b. *M-if-an-ome vola zananaka Rasoa sy Ravelo*
pres-rec-act-give money child Rasoa and Ravelo
V O remnant [S]
'Rasoa and Ravelo give money to each other's children'

(Keenan & Razafimamonjy 2001:52)

As well as syntactic difficulties in assigning a function to the remnant, there are also theoretical problems arising from the a-structure mapping. If we use the standard approach to argument suppression to account for the valence reduced reciprocal construction, then it is not clear why any remnant should be present at all. For example, to explain the loss of an argument in the Chichewa reciprocal construction, Mchombo (1991) suppresses the patient argument in the a-structure of the verb in a manner very similar to the analysis Bresnan (2001) uses for the passive construction (see figure 1). Likewise, Alsina's (1996) analysis of the reciprocal construction in Catalan is similar. He links both the agent and patient to just the SUBJ argument in the f-structure of the verb. Clearly Mchombo's analysis for Chichewa cannot be used for Malagasy because in a sentence like (25b), *vady* is part of the patient thematic role. For it to appear in a reciprocal sentence means that the patient hasn't been wholly suppressed. Likewise, under Alsina's analysis, if *vady* were going to appear anywhere, it would have to be part of the subject at the level of F-structure - and it's not. From this theory internal point of view then, it appears that the patient is not suppressed in reciprocal constructions - especially in conjunction with possession.

The valency reducing analysis failed to account for the reciprocation of possessor relations for the following reasons:

1. It could not assign a plausible function to the remnant.
2. The remnant is the possessee and belongs to the patient role of the verb. Contrary to the theoretical underpinnings of the valency reducing analysis, it appears that the patient is only partially suppressed in POSS constructions.

Analysis 2. The Valency Preserving Reciprocal Construction

The valency preserving analysis of reciprocal constructions predicts that these possession constructions should be grammatical - and the details of how it works are straightforward. As nouns in a possession relationship are modified by a lexical rule to allow them to select a POSS function, the lexical definition of the reciprocal morpheme must also be modified in a similar way so that the reciprocal pronoun can exist in a POSS function. This is accomplished by adding an optional POSS function to the lexical entry of the reciprocal morpheme:

(28) *-if-* (↑OBJ (POSS) PRED) = 'PRO_{recip}'

This is the only change required to account for the grammaticality of reciprocal constructions with objects containing a possession relation. For example, sentence (29) below can now be analysed straightforwardly using the standard analysis of control and possession in conjunction with the valency preserving analysis of the reciprocal construction:

(29)

<i>M-ifamp-ilaza</i>	<i>ray</i>	<i>aman-dreny</i>	<i>ho</i>	<i>mamboly</i>	<i>vary</i>	<i>Rabe sy Rakoto</i>
pres-rec-act-say	father	and mother.of	comp	pres-cultivate	rice	Rabe and Rakoto
V	[O]	[XCOMP]	[S]

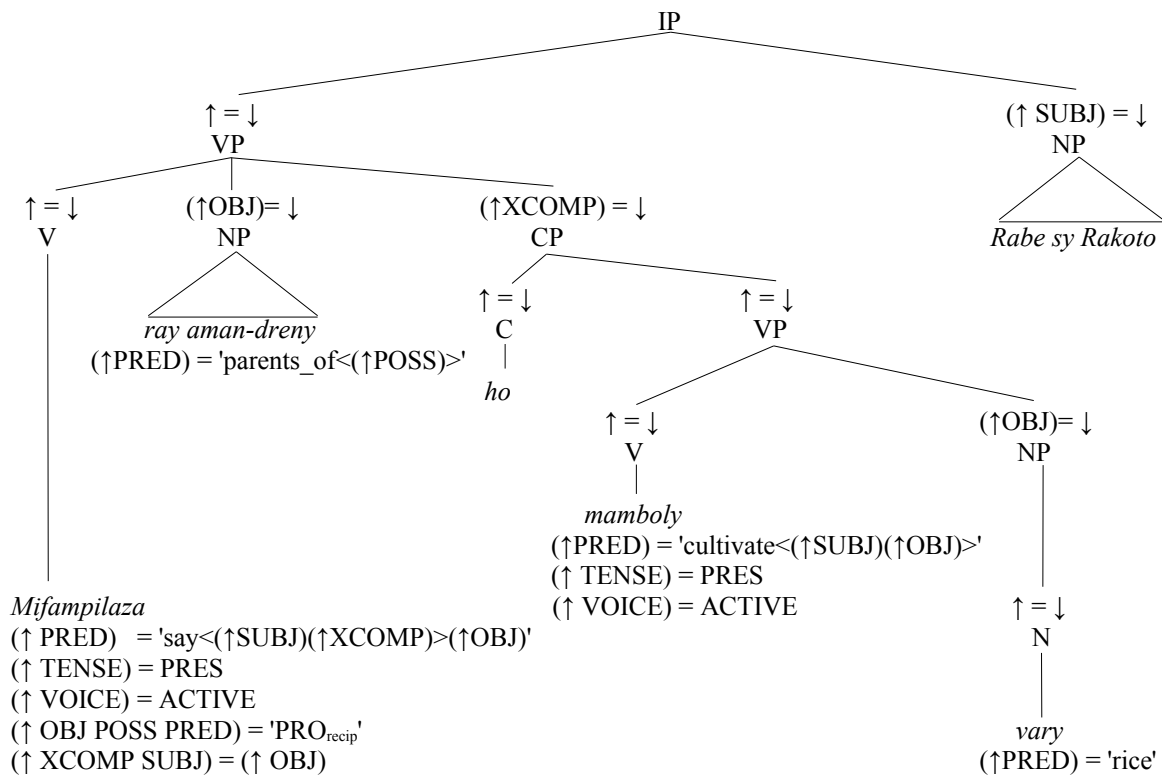
lit 'Rabe and Rakoto say each other's parents to be cultivating rice'
 'Rabe and Rakoto say each other's parents are cultivating rice'

(Keenan & Razafimamonjy 2001:52-53)⁶

6 For clarity I have changed the names of the participants in this example.

<i>M-ifamp-i-laza</i>	<i>v</i>	(↑PRED) = 'say<(↑SUBJ)(↑XCOMP)>(↑OBJ)' (↑XCOMP SUBJ) = (↑OBJ) (↑TENSE) = PRES (↑VOICE) = ACTIVE (↑OBJ POSS PRED) = 'PRO _{recip} ' (from rec. morpheme)
<i>mamboly</i>	<i>v</i>	(↑PRED) = 'cultivate<(↑SUBJ)(↑OBJ)>' (↑TENSE) = PRES (↑VOICE) = ACTIVE
<i>ray aman-dreny</i>	<i>NP</i>	(↑PRED) = 'parents_of<(↑POSS)>'
<i>vary</i>	<i>n</i>	(↑PRED) = 'rice'

C-structure



The lexical entries and c-structure (above) when combined give the complete and coherent f-structure below:

SUBJ	["Rabe and Rakoto"]
OBJ	[POSS [PRED 'PRO _{recip} ']]
	[PRED 'parents_of<(POSS)>']
XCOMP	[SUBJ ['rice']]
	TENSE PRES
	PRED 'cultivate<(SUBJ)(OBJ)>'
	VOICE ACTIVE
TENSE	PRES
VOICE	ACTIVE
PRED	'say<(SUBJ)(XCOMP)>(OBJ)'

The advantage of the valency preserving analysis is that the f-structure of the clause remains structurally unchanged with the introduction of the reciprocal morpheme. In particular, this means that the possession and control constructions do not require the invention of new syntactic rules to account for their reciprocal counterparts: reciprocal control constructions can be treated just like regular control clauses.

The valency preserving analysis is able to account naturally for the remnant in reciprocal possessor constructions – it is assigned the function of object by the usual phrase structure rules and engages in a possessor relationship with the reciprocal pronoun. This account of the remnant correctly predicts that any Malagasy reciprocal construction can also engage in a possessor relation.

5. CONCLUSION

I looked at three languages with reciprocal constructions that appeared to be similar; Catalan, Chichewa and Malagasy. The analyses of the reciprocal construction put forward to account for the reciprocal construction in Chichewa (Mchombo & Ngalande 1980, Mchombo 1991 and Dalrymple et al 1994) and Catalan (Alsina 1996) both reduce the valency of the reciprocated verb in f-structure.

I propose an alternate approach allowed by the architecture of LFG where the verb's valency remains unchanged at the level of f-structure, and the reciprocal morpheme creates a reciprocal pronoun which sits in an internal argument position selected by the verb.

By allowing this mismatch between f- and c-structure, the valency preserving analysis of the Malagasy reciprocal construction is able to correctly predict the grammaticality of reciprocated functional control sentences and possession constructions.

Because the valency preserving analysis of the Malagasy reciprocal construction does not change the overall structure of the f-structure, this analysis predicts that the reciprocal construction should co-occur with other constructions in Malagasy. This is observed - the reciprocal morpheme can co-occur with causative, circumstantialization and nominalization constructions.

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