Reciprocals in Malagasy

Edward L. Keenan and Jean-Paulin Razafimamonjy

UNIVERSITY OF CALIFORNIA, LOS ANGELES, AND UNIVERSITÉ D'ANTANANARIVO

We analyze the highly productive reciprocal morphology in Malagasy (Madagascar) as a phrasal affix that combines with two place predicates (P2s), possibly complex, reducing valency by one. We argue for our analysis over one in which reciprocal morphology originates as an argument of the verb and incorporates into it.

1. SIMPLE RECIPROCALS ILLUSTRATED.[1] (1a) is a minimal S built with a transitive verb, (1b) is its minimal correspondent built with a reciprocal verb.[2]

(1) a. m+aN+enjika (Manenjika) an-dRabe Rakoto.
PRES+ACT+chase ACC-Rabe Rakoto
'Rakoto is chasing Rabe.'

b. m+if+aN+enjika (Mifanenjika) Rabe sy Rakoto.
PRES+REC+ACT+chase Rabe and Rakoto
'Rabe and Rakoto are chasing each other.'

The tensed verb *manenjika* in (1a) is transitive, requiring a Theme, here the accusatively marked *Rabe*, and an Agent, here the unmarked *Rakoto*. In contrast, the verb *mifanenjika* in (1b) is intransitive, taking a single, group-level argument *Rabe sy Rakoto*. **Mifanenjika Rakoto* with an individual denoting argument is nonsense in Malagasy just as **John is chasing each other* is in English.

---

1. Research for this paper was done while the first author was a Fulbright Scholar at the Département Interdisciplinaire et de Formation Professionelle at the Université de Madagascar, directed by Prof. Roger-Bruno Rabenilaina. Special thanks both to the Fulbright Commission for its support and to Prof. Rabenilaina for providing the hospitality that made this research possible. Thanks also to two OL reviewers whose careful critiques improved this paper extensively.

2. Verbs are given in morphemic decomposition followed by their orthographic form (in parentheses) when that is not simply the concatenation of the morphemes. *N-* indicates an appropriate (pre)nasalized segment. See Paul (1996) for a precise statement. Malagasy expressions are given in standard orthography except for *N-* and + to mark morpheme boundaries. Relevant orthography-phonology correspondences are: *o* = /u/; word final *-y* = word internal *-i-* = /i/; *tr* is a voiceless prepalatal affricate, *dr* (or *dR*) its voiced counterpart. *j* = /dz/, *ts* is its voiceless counterpart. With one exception (footnote 18), a nasal followed by a consonant is the prenasalized version of that consonant (including *n-dR* where the dash indicates a morpheme boundary). *h* is not sounded, but surfaces orthographically and phonologically as *k* under many morphophonemic processes. Glosses use the following abbreviations: ACC, accusative; ACT, active; ART, article; CAUS, causative; CIRC, circumstantial; EXCL, exclusive; FUT, future; GEN, genitive; IMP, imperative; INCL, inclusive; NOM, nominative; PL, plural; POSS, possessive; PRES, present; REC, reciprocal; SG, singular; THM, theme.

Oceanic Linguistics, Volume 43, no. 1 (June 2004)

Phonologically the verb in (1b) differs from that in (1a) solely by the presence of the prefix *if-*. We shall then treat *if-* as morphology that derives group level intransitive predicates from individual level transitive ones. Here and later we use "P2" for *two place predicate.* Transitive verbs are lexical P2s (but we will also see many syntactically complex P2s).

Semantically we interpret *if-* as a function IF as in (2), where A is a set (the **antecedent set**) with at least two elements and p is a possible P2 denotation, a function taking two arguments yielding a Sentence interpretation as value.

(2) IF(p)(A) = True if and only if for all distinct x,y in A, p(y)(x) = True.

So treating *Jo and Mo* as denoting the set whose elements are Jo and Mo, (2) says:

(3) IF(**chase**)(**Jo and Mo**) = True iff **chase**(**Jo**)(**Mo**) and **chase**(**Mo**)(**Jo**) = True.

This crude semantics suffices to show that a compositional interpretation of reciprocals must identify the P2 that denotes p and the NP that denotes A. See Schwarzchild 1996, Dalrymple, Mchombo and Peters [DMP] 1998, Sternefeld 1998, Beck 1999, Büring 2001, Schein 2001 for a deeper study of the semantics of reciprocals.[3] We further ignore the semantic contribution of tense, which is independent of reciprocal marking but always included in our examples, as native speakers don't recognize tenseless verbs, such as *-anenjika,* as Malagasy.[4]

This approach to the syntax and semantics of reciprocals in Malagasy obliges us in the interests of descriptive adequacy to respond to the following questions:

Q1. What is the class of P2s that *if-* combines with? Just lexical transitive verbs? Or must we countenance syntactically complex P2s? What derivational operations feed Reciprocal Formation?

Q2. What derivational operations apply to reciprocal predicates? Can we nominalize them? Change their voice? Do they enter control structures?

Q3. Which expressions may denote the antecedent set? Just the subject of the reciprocal verb? Both subject and object? Just the Agent, whether subject or not?

Anticipating our answers, we will invoke many syntactically complex P2s; in consequence we treat *if-* as phrasal morphology with its values at complex P2s given

---

3. One important issue here concerns the interpretation of reciprocals when the antecedent set is many membered: *The boys are chasing each other* does not entail that each boy is chasing all the other boys. Another issue is raised by our discussion of frequentatives in example (51). A third issue are the polysemies (Kemmer 1993) often associated with reciprocals—reflexive, collective, and chaining. Only chaining arises with any frequency in Malagasy: *dimby* ⇒ *Mifandimby ny taona* 'the years succeed each other'. Reciprocals do not overlap with collectives: from *lao* 'leave' we form *Mifandao Rabe sy Rasoa* meaning only 'Rabe and Rasoa separated', not 'They left together'. Accompaniment without reciprocality is expressed with a pre-verb *miaraka* 'be, do together', as in *Miara-mandeha isika* 'We are traveling together'. *If-* verbs never receive a reflexive interpretation, patterning in this respect with the Oceanic languages (Lichtenberk 1991). Reflexives use the nominal *tena* 'body', not a verbal affix. And inherently reciprocal predicates (Kemmer 1993) may be constructed without reciprocal morphology: *miady* 'fight (with e.o)', *mivory* 'gather', *mitovitovy* 'be similar', *samihafa* 'different', etc.

4. Indeed Malagasy linguists, such as Rahajarizafy (1960), treat the reciprocal prefix as *mif-*, despite the fact that the past tense form replaces the initial *m-* with *n-* and the future with *h-*: *nifanenjika* 'chased' and *hifanenjika* 'will chase'.

recursively. Second, reciprocal verbs are productively nominalized, do undergo voice changes, and enter complex types of control structures. Regarding Q3, Agents (roughly) rather than subjects denote the antecedent set of reciprocals.

2. WHICH TWO-PLACE PREDICATES HOST RECIPROCAL MORPHOLOGY? Hebrew presents both verbal and NP reciprocals and Siloni (2001) argues that the verbal one is strictly lexical. Similarly Mchombo (1991) treats the verbal reciprocal in Chichewa as lexical. But in Malagasy, we argue, the reciprocal affix may take complex P2s in its scope. Even the simplest cases like (1a) show that the expression the reciprocal affix combines with is complex, consisting of a prefix *aN-* and a verbal root, *enjika,* which yields different verbs depending on the choice of prefix. For example, with prefix *i-* the derived verb meaning *flee* is intransitive:

(4) M+i+enjika any an-tsaha ny omby.
PRES+ACT+run there at-hills the cows
'The cows are running to the hills.'

The intransitive verb in (4) does not host *if-*. But with other roots, (16), *i-* builds transitive verbs that do host *if-*, so to define the class of verbs *if-* combines with we must examine their subcategorization, not just their affixes. Also, different ways of deriving verbs determine different antecedent NPs.

2.1 VERBAL DERIVATION. Overwhelmingly, Malagasy verbs are formed by affixing roots that are not themselves verbs, sometimes not even words (Keenan and Polinsky [K&P] 1998). We may classify verbs according to the number, case, and semantic (theta) role of their argument NPs, the latter ordered as follows:

(5) Agent > Experiencer > Theme/Patient > Other

aN- and *i-* are among the most productive verb-forming prefixes that combine with roots. They both have the property that the NP expressing the highest role on the ordering in (5) is placed rightmost. Other NPs are presented between the verb and that NP. Moreover in Ss such as (1a), there is massive evidence that the verb plus its Theme form a VP constituent to the exclusion of the Agent argument, which we call the EXTERNAL ARGUMENT (Pearson 2001, to appear; also Keenan 1976, 2000; Paul 1999). Here we just note two pieces of evidence. First, the yes-no question particle *ve* must separate the external argument from the rest of the S. It cannot separate other arguments from the verb:

(6) a. Manenjika an-dRabe ve Rakoto?
'Is Rakoto chasing Rabe?'
b. *Manenjika ve an-dRabe Rakoto?
'Is Rakoto chasing Rabe?'

Second, only the external argument in (1a) can relativize; the Theme cannot:

(7) a. ny olona izay manenjika an-dRabe
the person who chases acc-Rabe
'the person who is chasing Rabe'

b. *ny olona izay manenjika Rakoto
the person who chases Rakoto
'the person who Rakoto is chasing'

Verbs whose external arguments carry the highest theta role required by the verb will be called ACTOR FOCUS (AF). The question and relativization tests support that the conjoined NP in (8) is the external argument,[5] and that the verb is AF:

(8) a. Mifanenjika ve Rabe sy Rakoto?
'Are Rabe and Rakoto chasing each other?'

b. ny mpianatra izay mifanenjika
the student(s) REL rec+chase
'the students who are chasing each other'

To relativize the Theme argument of roots which have Agents, suffix *-ina* (or *-(a)na*) to the root, or, sometimes, prefix a_2-, yielding a verb which forms a VP with its Agent in the genitive case. That VP in turn takes the Theme as external argument, as in (9). The verbs of such VPs will be called THEME FOCUS (TF).

(9) Ø-enjika+ina+Rakoto (Enjehin-dRakoto)Rabe.
PRES-chase+THM+Rakoto.GEN Rabe
'Rakoto is chasing Rabe.'

In (9) question particles immediately precede the external NP and cannot separate the verb from its genitive complement. And only the external NP relativizes:

(10) a. Enjehin-dRakoto ve Rabe?
'Is Rabe who Rakoto is chasing?'

b. *Enjehina ve Rakoto Rabe?
'Is Rabe who Rakoto is chasing?'

(11) a. ny olona izay enjehin-dRakoto
'the person who Rakoto is chasing'

b. *ny olona izay enjehina Rabe
'the person who Rakoto is chasing'

In line with the grammatical tradition for Philippine languages but contrary to that for Malagasy, we treat the verbs in (1a) and (10a) as distinct transitive verbs, differing with regard to whether the Theme or Agent is external, and in consequence which can be relativized, and so forth. Following Keenan (1995), roots determine a relation, including a set of theta roles, and the affix determines the assignment of case and theta roles to the NPs that combine with the verb.

For example, the root *enjika* denotes a binary relation whose two participants bear the Theme (TH) and Agent (AG) theta roles. The subcategorization of the verb formed by suffixing *-ina* is given in (12a), that for *aN-+enjika* in (12b):

(12) a. enjika+ina [NP$_{GEN}$, NP$_{NOM}$]
AG TH

b. aN-+enjika [NP$_{ACC}$, NP$_{NOM}$]
TH AG

5. One might imagine an analysis of (1b) in which it was the external argument that was missing, bound say by *if-*, thought of as a variable binding operator. The question particle, relativization, and nominative pronoun replacement tests defeat such an analysis.

We use the convention that the leftmost NP in the subcategorization frame of a verb is the one it combines with first, yielding a VP whose subcategorization is given by the remaining case- and theta-marked NPs. When no NPs are left in the subcategorization frame, the result is a Sentence. Thus *enjehina* in (10a) combines first with a genitive case Agent NP to form a complex P1 (one place predicate, VP), such as *enjehin-dRakoto,* which subcategorizes a nominative Theme NP. In contrast, the complex P1 *manenjika an-dRabe* 'chases ACC-Rabe' created by combining *manenjika* with its accusative Theme leaves us with a P1 that takes a nominative Agent argument. So complex predicates inherit a subcategorization. And AF verbs are ones whose rightmost NP in their subcategorization frame bears the highest theta role in the frame.

More traditional work on Malagasy (including my own over 30 years) treats Theme Focus (TF) and other non-Actor Focus verbs as PASSIVES. But this terminology is misleading (Pearson [to appear] and Keenan and Manorohanta [K&M] [2001]). For example K&M show that a majority of TF verbs in texts present Agent Phrases and that missing Agent Phrases may be controlled by Agent Phrases of other non-AF verbs. Equally, Agent Phrases of certain classes of non-AF verbs may antecede reflexives and reciprocals. Note too that AF and TF verbs are comparable in terms of morphological complexity, both being formed by affixing the root. Finally both AF and TF verbs form imperatives, with the TF ones being those most most commonly volunteered as translations of French imperatives. Returning now to reciprocals,

Gen 1 Reciprocal morphology only combines directly with Actor Focus verbs.

Thus while *mifanenjika* 'chases each other' in (1a) is fully natural, any attempt to combine *if-* with *enjehina* is incomprehensible:

(13) *if+enjika+ina+Rabe sy Rakoto (ifenjehin-dRabe sy Rakoto)
REC+chase+THM+Rabe and Rakoto

Similarly, some roots prefix a_2- to form TF verbs, and these also do not host *if-*:

(14) a. m+aN+tolotra (Nanolotra) vary (hoan')ny vahiny Rabe.
PRES+ACT+offer rice (to)'the guest Rabe
'Rabe offers rice to the guests.'

b. Ø+a_2+tolotra+Rabe (Atolo-dRabe) (hoan')ny vahiny ny vary.
PRES+THM+offer-Rabe.GEN (to)'the guests the rice
'The rice is offered by Rabe to the guests.'

c. Ø+tolotra+ana+Rabe (Toloran-dRabe)vary ny vahiny.
PRES+offer+GOAL-Rabe.GEN rice the guests
'The guests are offered rice by Rabe.'

No attempt to prefix the verbs in (14b) or (14c) with *if-* is grammatical. Both the verbs in (14b,c) are non-AF, with the Agent a genitive internal argument. The external argument is Theme or Goal. So Gen 1 covers these cases as well.

Many transitive verbs, like *mifanenjika*, are formed from *aN-* + root, and they host *if-*: *mifanaja* (< *haja)* 'respect e.o.', *mifamangy* (< *vangy*) 'visit e.o.', *mifandaka* (< *daka*) 'kick e.o.', *mifamabo* (< *babo*) 'capture e.o.', etc. Equally, the causative

prefix *ana-* is often used with adjectival roots to form AF transitive verbs that host reciprocal *if-*: *soa* 'good, beautiful' ⇒ *manasoa* 'makes good, improves' ⇒ *mifanasoa* 'improve, do good for e.o.'

However *aN-*+root is sometimes intransitive: *mandeha* (<*leha*) 'goes', *mandihy* (< dihy) 'dances', and *mandohalika* (< *lohalika*) 'kneels', not to mention the more numerous unaccusatives: *hovitra* ⇒ *mangovitra* 'shivers', *hatsiaka* ⇒ *mangatsiaka* 'is cold', and so forth. Intransitive *aN-* verbs do not host reciprocal morphology: **mifandeha*, **mifangovitra*, and so on.

Finally, Gen 1 also covers the few verbs that, exceptionally, do form TF forms by suffixing AF forms:

(15) a. m+aN+hataka (Mangataka) vola an-dRabe Ravao.
PRES+ACT+ask money ACC-Rabe Ravao
'Ravao asks Rabe for money.'

b. Ø+aN+hataka+ina+Ravao (Angatahin-dRavao) vola Rabe.
PRES+ACT+ask+THM+Ravao.GEN money Rabe
'Ravao asks Rabe for money.'

c. m+if+aN+hataka (Mifangataka) vola Rabe sy Ravao.
'Rabe and Ravao ask each other for money.'

d. *if+aN+hataka+ina+Rabe (Ifangatahin-dRabe) sy Ravao vola
REC+ACT+ask+THM+Rabe.GEN and Ravao money

Similarly, *halatra* 'steal' ⇒ AF *mangalatra* and TF *angalarina*; *voly* 'plant' ⇒ AF *mamboly* and TF *ambolena*. The AF forms host *if-*, the TF ones do not.

Further, the *i-* prefix often forms transitive verbs, and these do host reciprocal morphology, using the allomorph *ifamp-*.[6]

(16) a. M+i+jery azy aho.
PRES+ACT+look+at him I
'I am looking at him.'

b. M+ifamp+i+jery isika.
PRES+REC+ACT+look+at we.INCL
'We (you and I) are looking at each other.'

---

6. A reviewer points out that we can decompose *ifamp-* into *if+amp-*, where *amp-* itself derives by normal Malagasy phonology from *aN-* + *f-*, *f-* a nominalizer, as in *fandeha* 'act or manner of going (< *f+aN+leha* 'NOM+ACT+go'). But synchronically, reciprocal *ifamp-* lacks the causative meaning regularly associated with *amp-*, as in (22). So this analysis cannot account for the ambiguity in verbs such as *mifampatoky*, built from *matoky* (< *m+a+toky*) 'trusts, has confidence in', according as it is simply the reciprocal of *matoky* 'trust e.o.' as in (ii) or the reciprocal of the ditransitive causative *mampatoky* (< *m+amp+a+toky*) 'inspire confidence in', as in (iii).

i. M+a+toky azy aho.
PRES+ACT+trust him I
'I trust him.'

ii. M+ifamp+a+toky isika.
PRES+REC+ACT+trust we.INCL
'We trust each other.'

iii. M+if+amp+a+toky azy isika.
PRES+REC+CAUS+ACT+trust him we.INCL
'We inspire each other to trust him.'

Any attempt to prefix *if-* directly in (16a) is unrecognizable: **mifijery isika*. Like *mifampijery* 'look at e.o.', we have *mifampidera* (< *dera*) 'praise e.o., *mifampilaza* (< *laza*) 'say to e.o.', and *mifampitantara* (< *tantara*) 'narrate to e.o.'.

There are also a few, if commonly occurring, AF verbs that exceptionally allow tense marking to combine directly with the root rather than using a prefix like *aN-* or *i-*: *m+ino* 'believes', *m+aka* 'takes'. The very few of these verbs that are transitive also form reciprocals with *ifamp-*: *mifampino* 'believe e.o.'

Finally, some AF stative verbs are formed with the causative/potentiality prefix *aha-*: *m+aha+lala* 'knows'. Their reciprocals use the allomorph *ifanka-*,[7] as in *mifankahalala* 'know e.o.'. A few other nonactivity roots form AF verbs by prefixing *a-*: *m+a+hita* 'sees'. Some but not all of them also form reciprocals with *ifanka*, as in *mifankahita* 'see e.o.', *mifankahay* 'agree, get along'.

To summarize, and generalize slightly, we derive reciprocal morphology on verbs using a function, which we call **Rec**. We write "{" for concatenation:

(17) $$\textbf{Rec}(\text{pref}\hat{}\text{root}) = \begin{cases} \textit{if}\hat{}\text{pref}\hat{}\text{root} & \text{if pref} = \textit{aN-}, \textit{ana-}, \textit{amp-}, \text{ or } \textit{anka-} \\ \textit{ifamp}\hat{}\text{pref}\hat{}\text{root} & \text{if pref} = \textit{i-} \text{ or } \emptyset\textit{-} \\ \textit{ifank}\hat{}\text{pref}\hat{}\text{root} & \text{if pref} = \textit{a-} \text{ or } \textit{aha-} \end{cases}$$

We use *if-* as a cover term for *if-*, *ifamp-* and *ifanka-*.[8] Second, we treat Reciprocal Formation as a function REC deriving P1s from P2s, satisfying:

(18) $$\underset{\theta \quad \theta'}{\text{verb: [NP}_{\text{ACC}}\text{, NP}_{\text{NOM}}\text{]}} \overset{\text{REC}}{\Rightarrow} \underset{\theta'}{\textbf{Rec}\text{(verb): [NP}_{\text{NOM.PL}}\text{]}}, \text{ where } \theta' > \theta \text{ in (5)}$$

Here is an example (with tense marking included for readability):

(19) $$\underset{\text{TH} \quad \text{AG}}{\text{manenjika: [NP}_{\text{ACC}}\text{, NP}_{\text{NOM}}\text{]}} \overset{\text{REC}}{\Rightarrow} \underset{\text{AG}}{\text{mifanenjika: [NP}_{\text{NOM.PL}}\text{]}}$$

And, per (2), the interpretation of REC(P2) is IF(**P2**), the function IF maps the P2 denotation to. In what follows we extend **Rec** to syntactically complex P2s.

We should note a second way of expressing reciprocals in which the external argument may be singular and the other party engaged in the reciprocal action is expressed as an object of the preposition *ami-* 'with', as in (20).

(20) Mifanenjika amin-dRabe Rakoto.
PRES+REC+ACT+chase with-Rabe Rakoto
'Rakoto is engaged in mutual chasing with Rabe.'

---

7. Again one might argue that *ifanka-* consists of *if-* combined with *anka-*, decomposable by regular Malagasy phonology into *aN-* + *ha*, *ha-* is a nominalizer (of limited productivity): *tsara* 'good' ⇒ *hatsara* 'goodness'. But this decomposition is synchronically unjustified: in *mifankahita* 'see e.o.', *hahita* does not exist as a nominalization (it is the normal future tense form of 'sees'), nor does ***mankahita* exist. Similarly in *mifankatia* 'like/love e.o.', ***mankatia* does not exist, nor is there any nominalization ***hatia*.
8. *ifamp-* and *ifanka-* might be regarded as "heavy," Kemmer (1993:25–28), bare *if-* as "light," but we find no semantic differences, such as light forcing simultaneous action, heavy allowing sequential involvement. They are just variants conditioned by the AF prefixes.

(20) is a rough paraphrase of (1b) and is much more natural than suggested by our English translation, which serves nonetheless to heighten the fact that one of the reciprocating parties is focused relative to the others. And this, in turn, has further consequences. For example, (21a) is natural, and (21b) incoherent.

(21) a. ny olona iray izay mifanenjika amin-dRabe
the person one who PRES+REC+ACT+chase with-Rabe
'the one person who is engaged in mutual chasing with Rabe'

b. *ny olona iray izay mifanenjika
the person one who PRES+REC+ACT+chase
'the one person who is chasing each other'

To generate expressions like (20), we need a second way of deriving reciprocals. But we shall not pursue this construction here, though it appears to be an option in all languages with verbal affix reciprocals: Japanese (Nishigauchi 1992), Chichewa (Mchombo 1991), Nêlêmwâ (New Caledonia; Bril 1994:134 and to appear), Hebrew and Hungarian (Siloni 2001).

The verb-forming affixes so far considered are *primary* in the sense of combining directly with roots to form verbs. But Malagasy also presents two productive affixes that only apply to already affixed roots. These are *if-* itself and the causative *amp-* (less productively *anka-*), and both are limited to apply to AF verbs. Causatives present their own complexities, which we cannot review here (see Randriamasimanana 1986 and Andrianierenana 1996). Highly productive are causatives of intransitive verbs. They are P2s and host reciprocal *if-* as expected:

(22) a. M+i+homehy aho.
PRES+ACT+laugh 1.SG.NOM
'I am laughing.'

b. M+amp+i+homehy azy aho.
PRES+CAUS+ACT+laugh 3.ACC 1.SG.NOM
'I am making him laugh.'

c. M+if+amp+i+homehy isika.
PRES+REC+CAUS+ACT+laugh 1.PL.INCL
'We are making each other laugh.'

Like *mifampihomehy* 'make e.o. laugh' we have *mifampandihy* 'make e.o. dance', *mifampijaly* 'make e.o. suffer' and many others. We should note, though, that the more common use of the causative in (22b) is as an intransitive:

(23) M+amp+i+homehy izany.
PRES+CAUSE+ACT+laugh that
'That is funny, makes (one) laugh.'

The AF noncausative verb *mihomehy* 'laughs' selects for animate, usually human, subjects, whereas the intransitive causative does not:

(24) a. vaovao mampihomehy
news funny
'a funny piece of news'

b. *vaovao mihomehy
news laughs
'news which is laughing'

Similar in all these respects are: *malahelo* 'sad' / *mampalahelo* 'makes (one) sad', *mitomany* 'cries' / *mampitomany* 'makes (one) cry', and *mangovitra* 'shivers' / *mampangovitra* 'makes (one) shiver'. A similar paradigm obtains with the weaker causative *aha:gaga* 'surprised' / *mahagaga* 'is surprising', *faly* 'happy' / *mahafaly* 'joyous', and so on.

Examples with *anka-* are rarer, as the external NP of verbs it builds is often an inanimate cause acting on an animate object (Rahajarizafy 1960:55). But we note:

(25) a. M+a+siaka Rabe.
PRES+ACT+nasty Rabe
'Rabe is nasty.'

b. m+anka+a+siaka (Mankasiaka)azy aho.
PRES+CAUS+ACT+nasty him I
'I am making him nasty.'

c. m+if+anka+a+siaka (Mifankasiaka)Rabe sy Ranaivo.
PRES+REC+CAUS+ACT+nasty Rabe and Ranaivo
'Rabe and Ranaivo are making each other nasty.'

Also *sitraka* 'agreeable' ⇒ *mankasitraka* 'accepts' ⇒ *mifankasitraka* 'find e.o. agreeable'.

2.2 SYNTACTICALLY COMPLEX P2S. A P2 formed by causativizing a P1 is already complex; causativizing a P2 to form a P3 (ditransitive verb) is more so. P3s combine with NPs to form syntactically complex P2s. But, as with causatives of intransitives, the understood Agent of the verb causativized is usually not required, so the resulting causative verb is often merely transitive. Still, (26b) and (27b) are causative P3s that behave as expected under *if-* prefixation.

(26) a. m+aN+sasa (Manasa) lamba Rasoa.
PRES+ACT+wash clothes Rasoa
'Rasoa is washing clothes.'

b. m+amp+aN+sasa (Mampanasa) lamba an-dRasoa aho.
PRES+CAUS+ACT+wash clothes ACC-Rasoa I.SG.NOM
'I am having Rasoa wash clothes.'

c. m+if+amp+aN+sasa (Mifampanasa) lamba Rabe sy Rasoa.
PRES+REC+CAUS+ACT+wash clothes Rabe and Rasoa
'Rabe and Rasoa are making each other wash clothes.'

(27) a. N+i+anatra zavatra betsaka aho.
PAST+ACT+study thing many I.SG.NOM
'I studied many things.'

b. N+amp+i+anatra zavatra betsaka ahy Rabe.
PAST+CAUS+ACT+study thing many I.SG.ACC Rabe
'Rabe taught me many things.'

c. N+if+amp+i+anatra zavatra betsaka isika.
PAST+REC+CAUS+ACT+study thing many I.PL.INCL
'We taught each other many things.'

Because the result of combining the P3 *mampanasa* 'cause-wash' in (26b) with its object *lamba* 'clothes' is a P2, it is in the domain of REC, as is *mampianatra zavatra betsaka* 'teach many things' in (27b). To derive the right form, we need simply to

extend the domain of the morphological function **Rec** to include the concatenations of P3s with their objects:

(28) **Rec**(P3 + NPcase) = **Rec**(P3) + NPcase,where case = acc or oblique.

Thus, ignoring tense marking,

(29) **Rec**(mampanasa + lamba) = **Rec**(mampanasa) + lamba by (28)
= mifampanasa + lamba by (18)

This is our first example of morphology assignment to proper phrases. This extension applies without change to P2s built from lexical P3s:

(30) a. n+aN+ome (Nanome) boky an-dRabe aho.
PAST+ACT+give book ACC-Rabe 1.SG.NOM
'I gave Rabe a book.'

b. n+if+aN+ome (Nifanome) boky izahay.
PAST+REC+ACT+give book 1.PL.EXCL
'We gave each other books.'

Here *nanome boky* 'gave a book' is a P2 consisting of a P3 + an NP, so **Rec** as extended in (28) applies, yielding *nifanome boky* 'gave e.o. books'. We also extend REC slightly in the following natural way: namely, just as θ' is required to outrank θ in (18), so the case borne by the θ'-marked NP is now required to outrank that of the θ-marked one on the following ordering:

(31) nominative > accusative > oblique (= Object of Preposition)

In Malagasy, objects of prepositions are normally genitive—they take the same pronominal forms and, when full NPs, the same complex morphology (K&P) as possessors of nouns. Also, nonexternal Agent Phrases are genitives. Text counts (Keenan 1995) show that the genitive case is the most widely used in Malagasy; then comes accusative, then nominative. The three cases have distinct pronominal forms, (32). In addition, accusative proper nouns (and a few other definite NPs) mark accusative with *an-*, as *an-dRasoa, an'i Soa.* Nominative is largely limited to external arguments.

(32)

	1.SG.	2.SG.	1.PL.EXCL.	1.PL.INCL.	2.PL.	3
NOM	aho	ianao	izahay	isika	ianareo	izy
ACC	ahy	anao	anay	antsika	anareo	azy
GEN	-ko	-nao	-nay	-ntsika	-nareo	-ny

Third person pronouns may force a plural interpretation when accompanied by a plural-marked demonstrative, as in *izy ireo* '3NOM DEM+PL', or a numeral + noun, as in *izy roa lahy* '3NOM two men', or a kin term, as in *izy mivady* '3NOM spouses'.

Now observe, unsurprisingly, that several "standard" P3s present their two internal arguments as an accusative and an oblique (which often alternates with an accusative when pronominal, but even verbs like 'give', which take two accusatives, do not permit a sequence of two accusative pronouns). The oblique is typically a human Recipient and is not present in the reciprocal form of the verb.

(33) a. H+i+laza vaovao amin-dRabe aho.
FUT+ACT+say news PREP-Rabe I.SG.NOM
'I will tell Rabe the news.'

b. H+ifamp+i+laza vaovao isika.
FUT+REC+ACT+say news I.PL.INCL
'We will tell each other news.'

(34) a. m+aN+soratra (Manoratra) taratasy hoan-dRabe Rasoa.
PRES+ACT+write letter to/for-Rabe Rasoa
'Rasoa is writing a letter to Rabe.'

b. m+if+aN+soratra (Mifanoratra) taratasy Rabe sy Rasoa.
PRES+REC+ACT+write letter Rabe and Rasoa
'Rabe and Rasoa write each other letters.'

(35) a. m+aN+lainga (Mandainga) amin-dRasoa Rabe.
PRES+ACT+lie to-Rasoa Rabe
'Rabe lies to Rasoa.'

b. m+if+aN+lainga (Mifandainga) Rabe sy Ranaivo.
PRES+REC+ACT+lie Rabe and Ranaivo
'Rabe and Ranaivo lie to each other.'

So the a-Ss above pattern like (30), save that the complex P2, for example, *manoratra taratasy* 'write letters' takes an oblique object, not an accusative one.

We stretch the cases in (33)–(35) to include ones with a benefactive or dative of interest interpretation. These may be expressed with the preposition *hoan'*, which also marks some notional indirect objects, as in (34a).

(36) a. m+aN+tao (Manao) farafara hoan-dRasoa Rabe.
PRES+ACT+make bed for-Rasoa Rabe
'Rabe is making a bed for Rasoa.'

b. m+if+aN+tao (Mifanao) farafara Rabe sy Ranaivo.
PRES+REC+ACT+make bed Rabe and Ranaivo
'Rabe and Ranaivo are making each other beds.'

To generate (36b) with our extended REC rule, it is not necessary to assume that *manao* 'make' subcategorizes a benefactive. It suffices that in Ss like (36a) we can analyze *manao farafara* as a P2 taking an oblique complement. It may be that the process, not understood and not analyzed here, of "free benefactive" insertion simply imposes some argument structure on whatever predicate hosts it. But in general, objects of "rich" prepositions are not accessible to REC:

(37) a. M+i+petraka akaikin-dRasoa Rabe.
PRES+ACT+sit next+to-Rasoa Rabe
'Rabe sits next to Rasoa.'

b. *M+ifamp+i+petraka Rabe sy Rasoa.
PRES+REC+ACT+sit Rabe and Rasoa
'Rabe and Rasoa sit next to each other.'[9]

9. (37b) is acceptable on an analysis in which the verb is the reciprocal of the causative: m+amp+i+petraka = 'seats (transitive)', in which case *mifampitpetraka* means 'seat e.o.'

(38) a. Tsy m+i+teny amin'ny olona afa-tsy Rabe irery izy ireo.
not PRES+ACT+speak with'the people except Rabe alone 3NOM DEM+PL
'They don't speak with anyone except Rabe.'

b. *Tsy m+ifamp+i+teny amin'ny olona Rabe sy Ranaivo.
not PRES+REC+ACT+speak with'the people Rabe and Ranaivo
'Rabe and Ranaivo don't speak with anyone but each other.'

These examples suggest that in verbal affix reciprocals (at least in Malagasy), the antecedent NP cannot bind a position that isn't "accessible" from the verb. Thus in (37a) and (38a), the presence of the locative 'next to Rasoa' and the exception NP 'except for Rabe' are not predictable from the verb. This is less important in languages with NP reciprocals, as the location of the reciprocal pronoun overtly marks the position bound by the antecedent NP.

A second limitation on Reciprocal Formation in Malagasy derives from the very limited ability of *if* to combine more than once with a verb. For example from ditransitive *maneho* 'show' one might expect to apply REC twice in a row to obtain (39b), but in fact that is not possible.

(39) a. m+if+aN+seho (Mifaneho) sary isika.
PRES+REC+ACT+show pictures WE.INCL
'We are showing pictures to each other.'

b. *m+if+if+aN+seho (Mififaneho) isika
PRES+REC+REC+ACT+show WE.INCL
'We are showing each other to each other.'

A pragmatically more natural case is (40c), which is still not possible:

(40) a. n+amp+aN+seho (Nampaneho) sary ny mpianatra ahy Rabe.
PAST+CAUS+ACT+show picture the student(s) 1.SG.ACC Rabe
'Rabe had me show pictures to the students.'

b. n+if+amp+aN+seho (Nifampaneho) sary ny mpianatra isika.
PAST+REC+CAUS+ACT+show picture the student 1.PL.INCL
'We had each other show pictures to the students.'

c. *n+if+if+amp+aN+seho (Nififampaneho) sary isika.
PAST+REC+REC+CAUS+ACT+show picture 1.PL.INCL
'We had each other show each other pictures.'

Note that on our analysis (39b) (and [40c]) is not derivable. REC just combines with the P2 'show pictures' to yield 'show e.o. pictures', which is a P1, so REC does not apply to it. However we can get two nonadjacent *if-*'s on a verb when they are separated by a (valency increasing) causative prefix.

(41) a. n+if+aN+daka (Nifandaka) isika.
PAST+REC+ACT+kick WE.INCL
'We kicked each other.'

b. n+amp+if+aN+daka (Nampifandaka) antsika Rabe.
PAST+CAUS+REC+ACT+kick US.INCL Rabe
'Rabe made us kick each other.'

c. n+if+amp+if+aN+daka (Nifampifandaka) isika.
PAST+REC+CAUS+REC+ACT+kick we.INCL
'We made each other kick each other.'

However, the ability to first reduce valency with *if-* and then raise it again with *amp-* is limited. We can say "make each other suffer" (42b), but we cannot in the same way say "make each other make each other suffer":

(42) a. M+i+jaly aho.
PRES+ACT+suffer I.SG.NOM
'I suffer.'

b. M+if+amp+i+jaly Rabe sy Rasoa.
PRES+REC+CAUS+ACT+suffer Rabe and Rasoa
'Rabe and Rasoa make each other suffer.'

c. *M+if+amp+if+amp+i+jaly Rabe sy Rasoa.[10]
PRES+REC+CAUS+REC+CAUS+ACT+suffer Rabe and Rasoa
'Rabe and Rasoa make each other make each other suffer.'

We turn now to two cases of complex P2 formation that are not registered on the verb. The first is P2 Modification, of which we treat Possessor Raising (Keenan and Ralalaoherivony 2000), illustrated in (43b), as a special case.

(43) a. m+aN+sintona (Manintona) ny volo+n'i Vao i Velo.
PRES+ACT+pull the hair+GEN'ART Vao ART Velo
'Velo is pulling Vao's hair.'

b. Manintona volo an'i Vao i Velo.
pulls hair ACC'ART Vao ART Velo
'Velo is hair-pulling Vao.'

c. m+if+aN+intona (Mifanintona) volo [i Vao sy i Velo].
PRES+REC+ACT+pull hair ART Vao and ART Velo
'Vao and Velo are pulling each other's hair.'

Now assuming an operation of PossR in which *volo* 'hair' in (43b) forms a complex P2 with *manintona* 'pull' without inducing an essential change in its subcategorization, then *manintona volo* 'pull hair' is just another complex P2. Extending REC so that **Rec**(P2 + N) = **Rec**(P2) + N, the complex P2 in (43b) undergoes REC to yield *mifanintona volo* in (43c).

We forego the temptation to treat P2+N as a case of incorporation (Baker 1996:38–48), though most of our examples are ones in which the N is a body part or kin term, thus indicating inalienable possession. But speakers do accept cases where the N is not inalienably possessed. They may even be modified, (44d).

---

10. Some speakers smile and accept (i) with two causatives:

i. M+amp+if+amp+i+jaly azy ireo aho.
PRES+CAUS+REC+CAUS+ACT+suffer 3.ACC DEM+PL I
'I make them make each other suffer.'

(44) a. n+aN+halatra (Nangalatra) ny bitro+n'i Vao i Velo.
PAST+ACT+theft the rabbit+POSS'ART Vao ART Velo
'Velo stole Vao's rabbit.'

b. ?Nangala-bitro an'i Vao i Velo.
stole-rabbit ACC'ART Vao ART Velo
'Velo rabbit-stole Vao.'

c. n+if+aN+halatra+bitro (Nifangala-bitro) i Vao i Velo.
PAST+REC+ACT+theft+rabbit ART Vao ART Velo
'Vao and Velo stole each other's rabbit.'

d. Nifangala-bitro fotsy i Vao sy i Velo.
PAST+REC+ACT+steal-rabbit white ART Vao and ART Velo
'Vao and Velo stole each other's white rabbit.'

The use of bare Ns as predicate modifiers preserving argument structure is common in Malagasy. From the root *sasa* 'wash' we form transitive *manasa,* (26a), and intransitive *misasa,* (45a), modified by a body part N in (45b).[11]

(45) a. M+i+sasa Rasoa.
PRES+ACT+wash Rasoa
'Rasoa is washing (herself).'

b. M+i+sasa tanana Rasoa.
PRES+ACT+wash hand Rasoa
'Rasoa is washing her hands.'

Two further points concerning PossR should be noted. First, hosts may be themselves syntactically complex.

(46) a. m+aN+ome (Manome) vola ny zanan-dRavelo Rasoa.
PRES+ACT+give money the child-of-Ravelo Rasoa
'Rasoa gives money to the children of Ravelo.'

b. Mifanome vola zanaka Rasoa sy Ravelo.
PRES+REC+ACT+give money child Rasoa and Ravelo
'Rasoa and Ravelo give money to each other's children.'

(47) a. m+aN+toro (Manoro) hevitra ny zanan-dRabe Rakoto.
PRES+ACT+indicate idea the child-of-Rabe Rakoto
'Rakoto gives advice to the child of Rabe.'

b. m+if+aN+toro (Mifanoro) hevitra zanaka Rabe sy Rakoto.
PRES+REC+ACT+indicate idea child Rabe and Rakoto
'Rabe and Rakoto give advice to each other's child.'

But PossR itself does not iterate, and (48c,d) are ungrammatical.

11. A more common use of N-modification is with a Means interpretation:

Mandeha (fiara) any Antsirabe aho.
goes (car) there Antsirabe I
'I go to Antsirabe (by car).'

(48) a. Manintona ny volon'ny zanak'i Soa i Vao.
pulls the hair'the child'ART Soa ART Vao
'Vao is pulling the hair of Soa's child.'

b. Manintona volo ny zanak'i Soa i Vao.
pulls hair the child'ART Soa ART Vao
'Vao hair-pulls Soa's child.'

c. *Manintona volo zanaka an'i Soa i Vao.
pulls hair child acc'ART Soa ART Vao
'Vao child-hair-pulls Soa.'

d. *Mifanintona volo zanaka i Soa sy i Vao.
PRES+REC+ACT+pull hair child ART Soa and ART Vao
'Soa and Vao are pulling each other's child's hair'

Second, and of some concern, PossR is more restricted in application than REC.

(49) a. m+aN+fantatra (Mamantatra) ny toetra+n'i Soa i Vao.
PRES+ACT+known the character+GEN'ART Soa ART Vao
'Vao seeks to know Soa's character/state of mind.'

b. *?Mamantatra toetra an'i Soa i Vao.
knows character ACC'ART Soa ART Vao
'Vao character-knows Soa.'

c. m+if+aN+fantatra (Mifamantatra) toetra [i Soa sy i Vao].
PRES+REC+ACT+known character ART Soa and ART Vao
'Soa and Vao seek to know each other's character.'

This suggests that the use of N-modification in (49c) is independent of PossR. So let us generalize REC still further, without attempting to define precisely the conditions under which a bare N can modify a predicate:

(50) **Rec**(P2 + Mod) = **Rec**(P2) + Mod, where Mod = N, Adverb, or PP.

So we let adverbs and PPs modify P2s without changing subcategorization. Thus *mandaka* 'kicks' takes the same arguments as *mandaka intelo* 'kicks three times' and thus undergoes REC. We can now represent an interesting ambiguity, according as 'three times' is under the scope of REC, (51b), or vice versa, (51c):

(51) a. Mifandaka intelo Rabe sy Ravao.
PRES+REC+ACT+kick three+times Rabe and Ravao
'Rabe and Ravao kicked each other three times.'

b. REC(kick three times)(Rabe and Ravao) = True if and only if
'Rabe kicked-three-times Ravao and Ravao kicked-three-times Rabe.'

c. (Three times)(REC[kick])(Rabe and Ravao)
'It happened three times that Rabe and Ravao kicked each other.'

(51c) lends itself to the interpretation that there were three mutual kickings, whereas (51b) seems to allow three independent kickings by each party (though no definite conclusion can be reached in the absence of an explicit semantics for frequentatives like 'three times'). Moreover the narrow scope construal, (51c), is preferred in this

instance. (51a) "They kicked each other three times" is not a natural way to report the situation in which Rabe kicked Ravao three times last week and this week Ravao took revenge by kicking him three times. Judgments weaken, but only slightly, with actions that are naturally separated by a time interval:

(52) Nifampindram-bola intelo Rabe sy Ravao.
PAST+REC+borrow-money three+times Rabe and Ravao
'Rabe and Ravao borrowed money from each other three times.'

Here it is natural to think that there were three exchanges of money: say Rabe borrows and pays it back, then Ravao borrows and pays back, then Rabe again.

Much more judgment work is needed here before any firm conclusions can be drawn. Nonetheless it does seem that the verbal affix reciprocal in Malagasy favors the "mutual event" reading over the independent event reading. This is consistent with Siloni's claim (2001) for Hebrew that the NP reciprocal allows the independent event reading but the verbal one only the mutual event reading.

Our second case of complex P2 formation not registered on the verb is RtoO (Raising to Object), illustrated in (53b). RtoO is quite productive, being hosted by over 50 verbs in Malagasy (Paul and Rabaovololona 1998). (53b) is a paraphrase of (53a). (53c) is reciprocal, built from (53b), not (53a).

(53) a. M+i+laza Ravelo fa n+aN+halatra+vary (nangala-bary) Rasoa.
PRES+ACT+say Ravelo that PAST+ACT+steal+rice Rasoa
'Ravelo says that Rasoa stole rice.'

b. M+i+laza an-dRasoa ho nangala-bary Ravelo.
PRES+ACT+say ACC-Rasoa as PAST+steal-rice Ravelo
'Ravelo says Rasoa to have stolen rice.'

c. N+ifamp+i+laza ho nangala-bary Rasoa sy Ravelo.
PAST+REC+ACT+say as PAST+steal-rice Rasoa and Ravelo
'Rasoa and Ravelo said each other to have stolen rice.'
('Rasoa and Ravelo said that each other stole rice.')

In (53a) we call *fa*+tensed S a CP (Complementizer Phrase). It occurs rightmost. Nonetheless *Ravelo* functions as the external argument: it is replaceable with a nominative pronoun (*izy*), can relativize, and immediately follows interrogative *ve.*

In contrast, in (53b) the VP constituent is everything up to clause-final *Ravelo,* which is external and nominative in case; question particles separate it from the VP, and only it relativizes, as expected. Following the general tendency "Light to the left, heavy to the right" in head-initial languages (of which Malagasy is a clear exemplar), we shall assume that there is a movement operation that extraposes the "heavy" *fa*-complement to the right of the external argument in (53a). Thus Actor Focus *milaza* has (51a) among its subcategorizations:

(54) i+laza [CP_{ACC}, NP_{NOM}]
TH AG

In order to generate (53b), we will also assign *ilaza* the subcategorization in (55a) and require that the interpretative relation in (55b) be satisfied:

(55) a. i+laza [NPACC, VPHO, NPNOM]
θho AG

b. **milaza**(x)(p)(y) = **milaza**(**fa**(p(x))(y)

So 'say Rasoa to have stolen rice' means the same as 'say that Rasoa stole rice'. The notation θho in (52) just means that the theta role of NPacc is relative to the *ho* marked VP, and so doesn't bear a theta relation to *milaza* at all. See Wechsler and Arka (1998) for a related usage. We now also must generalize the domain of REC so that a V it applies to may have any XP (NP, VP, CP) as arguments, and we stipulate, as is natural, that θ > θ' when θ is a role of V and θ' isn't (though it is a role internal to one of the arguments of V). As always, the nominative argument of the verb built by REC must have the same category as the additional argument in the subcategorization of the verb REC applies to. For example REC does not apply to (54). But slightly generalized, it does apply to (55a) to yield:[12]

(56) ifamp+i+laza [VPHO, NPNOM.PL].
AG

Note that our translation of (53b) and both translations of (53c) are ungrammatical. So here we have reciprocals in Malagasy that do not have correspondents in English (except for the very few verbs, like *believe*, that host RtoO, yielding, for example, *They believe each other to be clever*).

It is worth noting that each of the subcategorizations of AF *milaza* has a corresponding TF one, (57a) and (58a).

(57) a. laza+ina [NPGEN, CPNOM,]
AG TH

b. no+laza+ina+Ravelo (Nolazain-dRavelo) fa nangala-bary Rasoa.
PAST+say+THM+Ravelo.GEN that stole-rice Rasoa
'That Rasoa stole rice is said by Ravelo.'

Here the CP is external and, as usual in TF verbs, the Agent is an internal, genitive complement. So in (57b) question particles precede *fa,* and only the external argument extracts (as in *izay nolazain-dRavelo* 'whatever Ravelo said').

But using the subcategorization in (58a) we see in (58b) that *Rasoa* is external, the rest of the expression being the VP with the genitive Agent internal.

(58) a. laza+ina [NPGEN, VPHO, NPNOM]
AG θho

b. no+laza+ina+Ravelo (Nolazain-dRavelo) ho nangala-bary Rasoa.
PAST+say+THM+Ravelo.GEN as stole-rice Rasoa
'Rasoa was said by Ravelo to have stolen rice.'

12. We assign no theta role to the VPho, and we generalize REC to apply to predicates with the subcategorization [XPacc, (Y), XPnom] where XP can be NP or CP with their theta roles related as earlier, and Y, if present, lacks a theta role for the V subcategorized.

Of course, neither of the verbs in (57a) or (58a) is AF, so reciprocal morphology cannot apply. (59) shows that the verb in RtoO constructions may host a possessive head, thereby relating the possessor and the Agent of the verb:

(59) a. m+aN+antena (Manantena) ny zana-dRasoa ho salama Ravelo.
PRES+ACT+hope the child-of-Rasoa as healthy Ravelo
'Ravelo hopes the children of Rasoa to be healthy.'

b. m+if+aN+antena (Mifanantena) zanaka ho salama Rasoa sy Ravao.
PRES+REC+ACT+hope child as healthy Rasoa and Ravao
'Rasoa and Ravao hope that each other's children are healthy.'

(60) a. M+i+laza ny ray aman-dreni+n'i Soa ho mangala-bary i Vao.
PRES+ACT+say the parents'GEN'ART Soa as steal-rice ART Vao
'Vao says the parents of Soa to be stealing rice.'

b. M+ifamp+i+laza ray aman-dreny ho mangala-bary i Soa sy i Vao.
PRES+REC+ACT+say father and-mother as steal-rice ART Soa and ART Vao
'Soa and Voa say that each other's parents are stealing rice.'

Lastly, the verb governed by *ho* in the RtoO format can itself be in any voice. (61) uses a *ho*-marked TF verb.

(61) a. M+i+hevitra ny miaramila ho resin'ny fahavalo isika.
PRES+ACT+think the soldier(s) as defeat+THM'the enemy.GEN we.INCL
'We think the soldiers to have been defeated by the enemy.'

b. M+ifamp+i+hevitra ho resin'ny fahavalo ny miaramila.
PRES+REC+ACT+think as defeat+THM'the enemy.GEN the soldiers
'The soldiers think each other to have been defeated by the enemy.'

Finally, a last operation that feeds the formation of verbs in general, including reciprocal ones, is REDUPLICATION. Usually it just applies to roots, but on occasion an entire *aN*+root can be reduplicated. Semantically the effect of Reduplication is usually imperfectivizing or weakening, but occasionally frequentative. And in distinction to Chichewa (Mchombo 1991, 1999) and DMP (1994), causative and reciprocal affixes are never included in Reduplication:

(62) a. resaka 'conversation' ⇒ resadresaka 'chit chat'

b. M+i+resadresaka amin-dRabe Rasoa.
PRES+ACT+chitchat with-dRabe Rasoa
'Rasoa is chitchatting with Rabe.'

c. M+ifamp+i+resadresaka Rabe sy Rasoa.
PRES+REC+ACT+chitchat Rabe and Rasoa
'Rabe and Rasoa are chitchatting with each other.'

2.3 SUMMARY. We have presented Reciprocal Formation in Malagasy as a way of deriving complex P1s from Actor Focus P2s. The antecedent NP of the derived P1 is always its external argument. The range of reciprocally bindable arguments in Malagasy compares with, but is not identical to, that of English, which uses NP reciprocals. In the case of Raising to Object, we find reciprocals in Malagasy with

no direct correspondent in English. But in other cases, the restriction that the bindable arguments be those of a P2 is limiting. Objects of richly interpreted prepositions, as in (38a), are not reciprocally bindable in Malagasy, nor are positions deeply embedded within an argument NP, as in (48a). Another example is the inability of verbal affix reciprocals to pick out a single conjunct of a coordinate expression. Compare:

(63) a. John and Bill defended each other and each other's spouses.

b. N+i+aro ny zanany sy ny vadiny izy ireo.
PAST+ACT+defend the child+3GEN and the spouse+3GEN 3NOM DEM+PL
'They defended their children and their spouses.'

c. Nifampiaro izy ireo.
PAST+REC+ACT+defend 3NOM DEM+PL
'They defended each other.'

d. *Nifampiaro [e] sy ny vadiny izy ireo.
PAST+REC+ACT+defend [e] and spouse+3GEN 3NOM DEM+PL
'They defended each other and their/each other's spouses.'

3. OPERATIONS THAT APPLY TO RECIPROCAL EXPRESSIONS. A striking fact about Malagasy reciprocals is the extent to which they are integrated into its core grammar. Virtually all derivational processes that apply to predicates generally apply to reciprocal predicates in particular. One might have expected, for example, that the syntactic (hierarchical) relation between a reciprocal verb and its antecedent NP (always external) would remain fixed under later derivational processes. But this is not so.

3.1 Imperatives. Reciprocal verbs are Actor Focus, and as such they form their present tense with *m-* and their imperatives by suffixing *-a*, shifting stress to the right, and, when appropriate, inserting an epenthetic consonant.[13]

(64) manóratra[14] ⇒ Manoráta taratasy! ⇒ Mifanoráta taratasy!
writes Write letters (IMP)! Write e.o. letters (IMP)!

So AF imperatives lack an antecedent NP. Below we see non-AF imperatives of verbs built from reciprocals in which the antecedent NP is present internally.

3.2 Circumstantial Verbs. These are built by suffixing *-ana* to the stem of an AF verb (root preceded by an AF suffix, such as *aN-*, *ana-*, *i-*, etc.). *-ana* suffixing shifts stress rightward and, where appropriate, inserts an epenthetic consonant. Such verbs will be called CF for CIRCUMSTANTIAL FOCUS. The Agent NPs of CF verbs are genitive complements of the verb, just as with TF verbs. The external argument of a CF verb is normally an NP bearing an oblique role: Instrument, Benefactive, Locative, Manner, etc.[15] Compare the AF (65a) with the CF (65b):

13. A better treatment is given by Pearson (2001), drawing on Erwin (1996). The consonant we treat as epenthetic is really present in the root and disappears when the root is not suffixed in conformity with the ban on word-final consonants. Support for this view is that the same consonant shows up in different forms of suffixing, e.g., imperative suffixing and *-ina* suffixing.

14. We note the stressed syllable here with an acute mark above the vowel.

(65) a. m+aN+tao (Manao) farafara amin'ity vy ity Rabe.
PRES+ACT+make bed with'this metal this Rabe
'Rabe is making beds with this metal.'

b. Ø+aN+tao+ana+Rabe (Anaovan-dRabe)farafara ity vy ity.
PRES+ACT+make+CIRC+Rabe.GEN bed this metal this
'This metal is being used by Rabe to make beds.'

More formally, we can think of CF formation as a valency increasing operation, as illustrated for a typical case in (66). Keenan (1995) provides a paraphrastic semantics for CF formation.

(66) aN+root: [NP$_{ACC}$, NP$_{NOM}$] $\Rightarrow$ CF aN+root+ana:[NP$_{GEN}$, NP$_{ACC}$, NP$_{NOM}$]
TH AG AG TH OBL

The interpretation of circumstantial morphology given in Keenan (1995) suffices to predict the binding pattern observed (both for reciprocals and for reflexives). Now reciprocal verbs take CF forms, just as other AF verbs do:

(67) a. m+[if+[aN+tao]] (Mifanao) farafara amin'ity vy ity Rabe sy Rakoto.
PRES+REC+ACT+do bed from'this metal this Rabe and Rakoto
'Rabe and Rakoto were making each other beds from this metal.'

b. Ø+[[if+[aN+tao]]+vana](Ifanaovan)-dRabe sy Ravao farafara ity vy ity.
PRES+REC+ACT+do+CIRC-Rabe.GEN and Ravao bed this metal this
'This metal was being made beds with by R and R for each other.'

c. [[if+[aN+tao]]+vana]+y](Ifanaovy) farafara ity vy ity!
REC+ACT+do+CIRC+IMP bed this metal this
'Use this metal to make beds for each other!'

Like other non-AF verbs, CF verbs form imperatives by suffixing [u] ([i] when an [u] is present in the root).[16] Their external arguments are clause-final, relativize, (68a), immediately follow interrogative *ve*, (68b), and are replaceable by pronouns in the nominative series.

(68) a. ny vy (izay) ifanaovan-dRabe sy Rakoto farafara
'the metal (that) is being used by R and R to make beds for each other'

b. Ifanaovan-dRabe sy Rakoto farafara ve ity vy ity?
'Is this metal being used by Rabe and Rakoto to make beds for e.o.?'

Of note here is that, while the TF morphology *-ina* does not combine with reciprocal verbs, we can force a Theme NP to be external with the CF form by relativizing (questioning, etc.) it, as only the external NP undergoes these operations (Keenan 1972).

15. In some cases, see Keenan and Polinsky (1998) a CF verb may take a Theme or Goal as external argument. But neither these cases nor the details of the morphophonological changes under suffixing affect our claims about reciprocals.

16. Translating non-AF verbs as passives is particularly awkward in imperatives. For example from the root *vonjy* we have the AF *mamonjy* 'saves', whose imperative takes an accusative complement: *mamonje ahy*! 'Save me!'. But the natural translation of 'save me' is *Vonjeo aho*, with a TF verb, where the imperative is formed by suffixing [u] and the Theme is nominative.

(69) a. ny taratasy (izay) n+if+aN+soratra+ana (nifanoratan)-dRabe sy Rasoa
the letters (that) PAST+REC+ACT+write+CIRC+GEN-Rabe and Rasoa
'the letters (that) were written to each other by Rabe and Rasoa'

b. ny vaovao(izay) n+ifamp+i+tantara+ana (nifampitantaran)-dRabe sy Rasoa
the news (that) PAST+REC+ACT+narrate+CIRCRabe and Rasoa
'the news that was told to each other by Rabe and Rasoa'

c. ny soa n+if+aN+tao+vana+tsika (nifanaovantsika)
the good PAST+REC+ACT+do+CIRC+us(1PL.INCL.GEN)
'the good that was done for each other by us'

Of note here is that the antecedent NP in circumstantial reciprocals, (67b), (68), and (69), is the genitive Agent Phrase, never the external argument. Thus

(70) Circumstantial Formation preserves the binding relations allowable by the predicate it applies to.

Keenan (1995) notes that this pattern holds for antecedents of reflexives, which are NP reflexives in Malagasy, not verbal ones:

(71) a. m+aN+vono (Mamono) tena hoan'ny zanaka ny ray aman-dreny.
PRES+ACT+kill self for'the children the father and-mother
'Parents kill themselves for their children.'

b. Ø+aN+vono+ana (Amonoan')ny ray aman-dreny tena ny zanaka.
PRES+ACT+kill+CIRC GEN.the father and-mother self the children
'Parents kill themselves for their children.'

In (71b), the reflexive *tena* 'self' asymmetrically c-commands its antecedent.

3.3 Causatives. CAUSATIVE FORMATION (CAUSE) applies (with poorly understood restrictions) to AF verbs, including reciprocals.

(72) a. m+ifanka+ahalala (Mifankahalala) ny mpianatra.
PRES+REC+know the student(s)
'The students know each other.'

b. m+amp+ifanka+ahalala (Mampifankahalala) azy ireo ny mpampianatra.
PRES+CAUS+REC+know 3ACC. DEM+PL the teacher
'The teacher introduced the students to each other.'

Note that the antecedent NP in (72b) is not the external argument but rather the accusative *azy ireo* 3ACC.DEM+PL. Thus Causative Formation, like Circumstantial Formation, preserves the binding possibilities allowed by the verb to which it applies. As Causative is also a valency increasing operation, we generalize:

Gen 2 Valency increasing operations in Malagasy do not change the anaphor-antecedent relations allowed by the predicates they apply to.

Gen 2 also holds for antecedents of reflexives (Randriamasimanana 1986).

(73) a. n+aN+vono (Namono) tena Rabe.
PAST+ACT+ kill self Rabe
'Rabe killed himself.'

b. N+amp+aN+vono tena an-dRabe Rakoto.
PAST+CAUS+ACT+kill self ACC-Rabe Rakoto
'Rakoto made Rabe kill himself.'

In (74b) we see that causatives of reciprocals can be put in Circumstantial Focus. They can also be put in TF form using the *-ina* suffix, (74c).[17]

(74) a. m+amp+if+aN+tao (Mampifanao) farafara amin'ity vy ity azy ireo aho.
PRES+CAUS+REC+ACT+make bed with'this metal this 3ACCDEM+PL I
'I am making them make each other beds from this metal.'

b. Ø+amp+if+aN+tao+vana+ko (Ampifanaovako)farafaraazy ireo ity vy ity.
PRES+CAUS+REC+ACT+make+CIRC+1SG.GEN bed 3ACCDEM+PL this metal this
'I am making them make each other beds with this metal.'

c. Ø+amp+if+aN+tao+vina+ko (Ampifanaoviko) fara. amin'ity vy ity R sy R.
PRES+CAUS+REC+ACT+make+THM+1SG.GEN with'this metal this R and R
'Rabe and Ranaivo are made by me to make each other beds.'

Note that in general CF and TF forms of causative verbs are minimal pairs:

VERB	CF(CAUSE(VERB))	TF(CAUSE(VERB))
manao 'makes'	ampanaovana	ampanaovina
manasa 'washes'	ampanasana	ampanasaina

3.4 Nominalizations. AGENT NOMINALS are AF verbs prefixed with *mp-*:[18]

(75) mianatra 'studies' mpianatra 'student'
mampianatra 'cause to study' mpampianatra 'teacher'
mandeha 'goes' mpandeha 'passenger'

Reciprocal verbs form agent nominals like other AF verbs (as they do in Chichewa [Mchombo 1998:515]). Some like *mpifankatia* 'lovers' are lexicalized, others naturally have context-bound uses.

(76) mifankahala 'detest e.o.' mpifankahala 'individuals who detest e.o.'
mifanampy 'help e.o.' mpifanampy 'people who are helping e.o.'

In general, Malagasy nominalizing operations are fully productive and preserve the subcategorization of the predicates nominalized (K&P). Prepositions are not inserted to assign case; derived Ns, like lexical Ns, assign case directly. Thus 'my teacher' in the sense of the person who teaches me, is *ny mpampianatra ahy* 'the teacher me' with 'me' accusative, not genitive. All the complex reciprocals cited above have corresponding agent nominals:

17. So *-ina* is not exclusively primary. It also converts causative AF verbs to TF verbs. Thus verbs containing reciprocal morphology can be put into a TF form, provided that they have been causativized first. Another example:

a. m+amp+ifanka+aha+lala (Mampifankahalala) ny mpianatra aho.
PRES+CAUS+REC+POT/CAUSE+know the student(s) I
'I am having the students get to know each other.'

b. n+amp+ifanka+aha+lala+ina (Nampifankahalain'ny)tale ny mpiasa.
PAST+CAUS+REC+POT/CAUSE+know+TF+the director the worker(s)
'The workers were gotten to know each other by the director.'

Similar are *mampifanatrika* 'make face e.o.' and *mampifanohitra* 'make oppose e.o.'

18. Pronounced [p], unexpectedly no prenasalization is sounded.

(77) a. Mifamangy matetika ireto mpifanome vola ireto.
visit-each+other often these givers-to-each+other money these
'These givers to each other of money visit each other often.'

b. Miady mafy ireo mpifampilaza ho mpangalatra ireo.
fight hard those NOM+REC+ACT+say as NOM+ACT+steal those
'Those people who said each other to be thieves are fighting hard.'

Tensed CF verbs accompanied with *ny* 'the' or a demonstrative function as EVENT NOMINALS. Past tense forms tend to refer to specific past events.

(78) N+arary izy t+amin'ny n+aN+leha+ana+nay (nandehananay) t+any.
PAST+sick he PAST+at'the PAST+ACT+go+CIRC+1PL.EXCL.GEN PAST+there
'He was sick when we went there.'

Reciprocal verbs undergo such nominalization unproblematically:

(79) Tsy faly izy tamin'ny n+if+aN+valy+ana (nifamalian)'ny anabaviny.
not happy he PAST+at'the PAST+REC+ACT+respond+CIRC'the sisters+his
'He was not happy during the arguing by his sisters.'

A more abstract type of nominalization, often referring to a generic circumstance of an action or state, is given by replacing the tense marking in CF nominalizations with *f-*. Such nominalizations are widely used:

(80)

AF VERB	CF (PRESENT)	CF NOMINAL
mivarotra 'sells'	ivarotana	fivarotana 'store'
mahafaka 'frees'	ahafahana	fahafahana 'freedom'
mahamarina 'makes just'	ahamarinina	fahamarinana 'justice'
mandihy 'dance'	andihizana	fandihizana 'dancing'

f-nominalization applies to reciprocal verbs, (81), taking agent phrases easily.

(81) fifankatiavana 'mutual love' fifampitokisana 'mutual trust'
fifampijaliana 'mutual suffering' fifampialonana 'reciprocal jealousy'

(82) a. Tsara ho tadidina ny fifampitokisan'ny Malagasy taloha.
good FUT recall+THM the mutual+trust+CIRC+of'the Malagasy of+yore
'It is good to recall the trust in e.o. by the Malagasy in the old days.'

b. Hotohizana ny fifanolorantsika fanomezana isan-taona.
FUT+continue+THM the REC+offer+CIRC+by+us.GEN.INCL gifts each+year
'Our yearly giving of gifts to each other will continue.'

3.5 Control. Control structures in Malagasy are rich and complex (Keenan 1995, Law 1995, Polinsky and Potsdam 2001, 2003). Here we illustrate the basic cases of control between verbs of intent and desire, VINT, and their complement verbs.

(83) a. n+i+kasa h+aN+vaky (Nikasa hamaky) io boky io aho.
PAST+ACT+intend FUT+ACT+read that book that I
'I intended to read that book.'

b. no+kasa+ina+-ko ho+vaky+ina (Nokasaiko ho vakina) io boky io.
PAST+intend+THM+1.SG.GEN FUT+read+THM that book that
'That book was intended by me to be read (by me).'

In both (83a,b) the initial VINT is past tense, but selects a complement verb in the future. So, aside from making semantic sense, there is some formal basis for treating VINT as forming a constituent with the following V, preserving its subcategorization. The standard constituent tests show that the final NP in (83a,b) is external and the preceding material is a VP.

Reciprocal verbs enter the same control paradigms, (84), with the CF voice playing the role of TF for the reciprocal verb, (84b), as noted earlier.

(84) a. Naniry hifandefa boky izahay.
PAST-ACT-desire FUT+REC+ACT+send book we.EXCL
'We desired to send each other books.'

b. ny boky n+iry+ina+nay (nirinay) h+if+aN+lefa+sana (hifandeasana)
the books PAST+desire+THM+1.PL.EXCL.GEN FUT+REC+ACT+send+CIRC
'the books we desired to send to each other'

In (84a), the VP *naniry hifandefa boky* 'desired to send e.o. books' is reciprocal, because its external argument is plural. Thus we treat AF VINT's as modifying future tense AF Vs without change of subcategorization. So REC applies to *naniry handefa boky* 'desired to send books', a P2, with Goal and an Agent arguments.

(85) **Rec**(verb[int] ^ P2) = verb[int] ^ **Rec**(P2)

Thus	**Rec**(naniry handefa boky)	= naniry + **Rec**(handefa boky)	by (85)
		= naniry + **Rec**(handefa) + boky	by (28)
		= naniry + hifandefa + boky	by (18)

In (84b), *nirinay* 'desired by us' can be replaced by many other agented non-AF verbs: *nokasain-dRabe sy Rakoto* 'intended by R and R', *tiantsika* 'liked by us.INCL, and so forth, as long as the controlling Agent phrase is plural. Replacing *nirinay* with *niriko* 'desired by me' in (84b) is ungrammatical. Non-AF control in Malagasy is often more natural than control by AF verbs. (86b) is a natural way to say 'We have much to tell each other'. (86a) is not.

(86) a. m+aha+azo (Mahazo) m+ifamp+i+tantara vaovao maro isika.
PRES+AHA+receive PRES+REC+ACT+tell news much we.INCL
'We may / are permitted to tell each other much news.'

b. Maro ny vaovao azo+ntsika ifamp+i+tantara+ana.[19]
many the news receive.THM+1.PL.INCL.GEN REC+ACT+tell+CIRC
'We have much to tell each other.'

So genitive arguments of non-AF verbs can control the genitive arguments of non-AF verbs they govern, whence antecedence of the reciprocal arguments in examples like (86b) is as in nonreciprocal cases, (83b). Malagasy has object control verbs as well (Law 1995)—such as *help, ask, force*—which may be reciprocal.

---

19. (The last word is elided to *ifampitantarana*.) Many roots are TF verbs without affixes (K&M): *azo* 'received', *heno* 'heard', *resy* 'defeated', etc. Only a few roots are AF verbs, usually degenerate. No roots are CF verbs.

(87) a. h+aN+ampy(Hanampy) azy h+i+tsara ireto fanadinana ireto isika.
FUT+ACT+help 3ACC FUT+ACT+judge these exam these we.INCL
'We will help them grade these exams.'

b. h+if+aN+ampy(Hifanampy) h+i+tsara ireto fanadinana ireto isika.
FUT+REC+ACT+help FUT+ACT+judge these exams these we.INCL
'We will help each other grade these exams.'

In (88a), *these exams* is the external argument, as shown by (88b,c). The matrix verb *help each other* goes into the CF form and the governed verb *grade* is TF. I find no English translation presenting the Malagasy external argument as subject.

(88) a. Hifanampiantsika hotsaraina ireto fanadinana ireto.
FUT+REC+ACT+help+CIRC+1.INCL.GEN FUT+judge+THM these exam these
"'We will help each other grade these exams.'"

b. Hifanampiantsika hotsaraina ve ireto fanadinana ireto?
"'Will we help each other grade these exams?'"

c. ny fanadinana izay hifanampiantsika hotsaraina
"'the exams that we will help each other grade'"

Such expressions can be easily embedded under verbs of intent and desire:

(89) a. N+i+kasa hifanampy hitsara ny fanadinana izahay.
PAST+ACT+intend FUT+REC+ACT+help FUT+ACT+judge the exam 1PL.EXCL
'We intended to help each other grade the exams.'

b. no+kasa+ina+nay(Nokasainay) hifanampiana hotsaraina
PAST+intend+THM+1PL.EXCL.GEN FUT+REC+ACT+help+CIRC FUT+judge+THM
ny fanadinana.
the exams
"'We intended to help each other grade the exams.'"

c. ny fanadinana izay nokasainay hifanampiana hotsaraina
"'the exams that we intended to help each other grade'"

And the verb governed by the reciprocal in these cases may itself be reciprocal (with the "higher" accusative NP denoting the antecedent set, in [90a]):

(90) a. Nanampy azy nifandefa entana isika.
PAST+ACT+help them PAST+REC+ACT+send packages we.INCL
'We helped them send each other packages.'

b. Nifanampy nifandefa entana isika.
'We helped each other send each other packages.'

c. ny entana nifanampiantsika nifandefasana
the package PAST-REC+ACT+help+CIRC+1.PL.INCL PAST+REC+ACT+send+CIRC
'the package(s) (that) we helped each other send each other'

The examples in (90) resemble multiple reciprocals like *protect e.o. from e.o.* or, Williams (1991), *give e.o. pictures of e.o.* but only one argument from each verb is bound. We hypothesize that Gen 3 holds of verbal affix reciprocals across languages.

Gen 3 Verbal reciprocal morphology licenses the absence of just one argument of the verb it combines with.

This completes our descriptive study of Reciprocal Formation in Malagasy. There are certainly competitors to the phrasal morphological analysis we have provided. See Lidz (2001) and Nishigauchi (1992) for two specifically concerned with verbal morphology. Here we conclude by comparing our approach to a generic incorporation approach—one in which reciprocal *if-* originates as an anaphoric argument of the predicate and incorporates into it. We favor our phrasal derivational approach for Malagasy, but the comparison reveals aspects of the structure of reciprocals that have so far not been highlighted.

4. *IF-* AS ANAPHOR? The "*if-* = Anaphor" hypothesis is that *if-* originates as an object anaphor, as in (91a). This is the structure that is semantically interpreted, perhaps as in HLM 1991. *If-* is listed in the lexicon as an affix and therefore must move at some post-interpretative level to find a host, yielding (91b).

(91) a. m+aN+enjika (Mifanenjika) if- Rabe sy Rakoto.
PRES+ACT+chase each+other Rabe and Rakoto

b. Mifanenjika [e] Rabe sy Rakoto.
'Rabe and Rakoto are chasing each other.'

This treatment is compatible with a suggestion by Guthrie for Gikuyu (Mchombo 1991) and shares some properties with Nishigaughi's (1992) analysis of Japanese. Mchombo and DMP argue against this analysis for Chichewa in favor of a lexical derivational rule (compatible with our proposal, though they do not consider complex P2s). Below we give our reasons for preferring our derivational account.

First, on the *if-* = Anaphor view, reciprocal verbs—ones with the *if-* incorporated—are not semantically interpreted. The nonreciprocal transitive verb is interpreted, as is its object, then the combination is interpreted compositionally. So on this view it is unnatural to handle noncompositional cases, because that would involve assigning a meaning (albeit an unpredictable one) to a reciprocal verb, and they are not expressions that are assigned a meaning at all. In contrast, on our "*if-* = Affix" view, reciprocal verbs are semantically interpreted, (19), so we need only stipulate ad hocly the interpretation of the noncompositional cases. For example, *mifampody* is the reciprocal of the causative of *mody* (< *fody*) 'return home' and literally means 'make e.o. go home'. But in fact it means 'to reconcile, said of husband and wife'. Similarly *mifankahazo* and *mifandray,* which both may mean 'receive e.o.' are commonly used to mean 'to get along, have good relations'. And *fifamoivoizana* is the circumstantial nominalization of the reciprocal of *mamoivoy* 'send in all directions' but is used to mean 'traffic (cars)'.

More extreme noncompositionality is found in cases in which the transitive verb that appears to have hosted *if-* has been historically lost. Thus *mifanerasera* 'communicate with e.o.' would derive from the now nonexistent **manerasera*, itself built from the root *serasera* (a reduplication of the now nonexistent *sera*). Similarly *mifanena* means 'meet e.o. (perhaps accidentally)' but its ostensible transitive source **manena* is nonexistent, though the root *tsena* exists and derives the existent *mitsena* 'meet (intentionally)'.

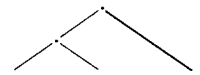
Second (adapted from DMP), comparatives built from transitive verbs with overt objects induce ambiguities of the sort in (92a):

(92) a. m+aN+haja (Manaja) an-dRabe kokoa Rasoa noho Ranaivo.
PRES+ACT+respect ACC-Rabe more Rasoa than Ranaivo
'Rasoa respects Rabe more than (she respects) Ranaivo.'
'Rasoa respects Rabe more than Ranaivo (does).'

b. m+if+aN+haja (Mifanaja) kokoa izy ireo noho Ravelo sy Ravao.
PRES+REC+ACT+respect more 3 DEM+PL than Ravelo and Ravao
'They respect e.o. more than Ravelo and Ravoa respect e.o.'
*'They respect e.o. more than (they respect) Ravelo and Ravao.'

So the reading of (92a) in which the object of the comparative *noho* is the object of the verb is unavailable in (92b) where there is no object to compare on the *if-* = Affix view. But this reading should be available on the *if-* = Anaphor view, because there the transitive verb *manaja* 'respects' has an object.

Third, on the *if-* = Anaphor view, it is likely that the empty category [e] will fail to be properly bound. Even in the simplest case, the gross hierarchical structure of the VP in (1b) would be as in (93), in which case the moved *if-* does not c-command [e], in violation of the ECP (Empty Category Principle).

(93) 

One might argue that [e] is "sufficiently" bound by the external NP *Rabe sy Rakoto,* which does c-command it. But even that condition fails in the CF voice, (94b).

(94) a. n+if+aN+vono (Nifamono) [e] tamin'ity basy ity Rabe sy Ravao.
PAST+REC+ACT+kill [e] PAST+with'this gun this Rabe and Ravao
'Rabe and Ravao killed each other with this gun.'

b. Nifamonoan-dRabe sy Ravao [e] ity basy ity.
PAST+REC+ACT+kill+CIRC+GEN.Rabe and Ravao [e] this gun this
'This gun was used by Rabe and Ravao to kill each other.'

Here [e] is a sister to a constituent properly containing its antecedent *Rabe sy Rakoto,* so it asymmetrically c-commands it. To reinforce the naturalness of this judgment, note (95c), where two agented CF verbs have been coordinated and take a common, overt, object that asymmetrically c-commands both of them..

(95) a. Ø+if+aN+tolotra+ana (Ifanoloran)'ny olona fanomezana ny taom-baovao.
PRES+REC+ACT+offer+CIRC'the people.GEN gifts the year-new
'The New Year is when people offer presents to each other.'

b. Ø+if+aN+rai+sana+ny (Ifandraisany) fanomezana ny taom-baovao.
PRES+REC+receive+CIRC+3GEN gifts the year-new
'The New Year is the time they receive gifts from each other.'

c. [[Ifanoloran'ny olona sy ifandraisany] fanomezana]
REC+offer+CIRC'the people and REC+receive+CIRC+3GEN gifts
ny taom-baovao.
the year-new
'The New Year is when people offer to e.o. and receive from e.o. gifts.'

Fourth, specifying the class of verbs that *if-* combines with is more natural on the *if-* = Affix view, because it is given as a derivational operation (REC) that takes predicates as arguments. So it is natural that it selects its predicates: Actor Focus ones. In addition, causative *amp-* and the agent nominalizer *mp-* also select AF verbs. So *if-* forms part of a natural derivational class in Malagasy. In contrast, on the *if-* = Anaphor view, we would have to specify the class of verbs that the object can prefix to. No other nominal expressions incorporate as prefixes, so this is a new stipulation, not, as on the *if-* = Affix view, just another example of a pattern otherwise well attested in Malagasy.

Fifth, the *if-* = Anaphor view provides a less satisfactory account for why we do not get multiple reciprocals in Malagasy (*protect e.o. from e.o.*, etc.). English shows that multiple NP reciprocals make sense, so we should expect multiple *if*'s on the host verb, contrary to fact. In contrast, on our view, the absence of iterated *if-* is a theorem, as is the claim that a single *if-* does not license more than one gap.

Sixth is a technical issue that favors the IF = Affix view. Consider the natural coordinations in (96) and (97c), and the ungrammatical one in (97b).

(96) a. N+a+hita sy n+i+arahaba azy ireo aho.
PAST+ACT+see and PAST+ACT+greet 3ACC DEM+PL 1.SG.NOM
'I saw and greeted them.'

b. N+ifank+a+hita sy n+ifamp+i+arahaba izahay.
PAST+REC+ACT+see and PAST+REC+ACT+greet we.EXCL
'We saw each other and greeted each other.'

The two conjuncts in (96a) are P2s; those in (96b) P1s, as are those in (97c), so in all these cases coordination is acceptable. On the *if-* = Affix view the verbs in (97b) have different categories (P2 and P1, respectively) and so cannot coordinate. But on the *if-* = Anaphor view, what blocks deriving (97b) from (97a)?

Coordination of transitive verbs is common in Malagasy, and, as (97c) shows, reciprocal and nonreciprocal verbs of nondistinct categories do coordinate.

(97) a. [[Nahita sy niarahaba] if-] izahay.
saw and greeted REC we.EXCL

b. *Nifankahita sy niarahaba [e] izahay.
'We saw and greeted each other.'

c. Nijoro teto sy nifampitantara vaovao ireo tovolahy ireo.
stood here and told.each.other news those young+men those
'Those young men stood here and told each other news.'

Other prefixing processes with coordinations in their scope may just affect the first conjunct. For example, the accusative marker *aN-* is not repeated across conjuncts:

(98) Nahita an'i Soa sy i Vao aho. *... an'i Soa sy an'i Vao ...
saw ACC'ART Soa and ART Vao I
'I saw both Soa and Vao.'

Equally, possessive morphology, as in (99), does not distribute across conjuncts:

(99) ny trano+n-dRabe sy Rasoa *... n-dRabe sy+n-dRasoa
the house+POSS-Rabe and Rasoa
'the house of Rabe and Rasoa'

It seems, then, that to block *if-* from prefixing to the first conjunct of (97a), the *if-* = Anaphora view needs a stipulation not needed on the *if-* = Affix view. We might have hoped that a general constraint requiring landing sites of movement to c-command their launch sites would block (97b), because classically neither conjunct of a coordinate structure c-commands out of it. But on the Binary Branching hypothesis (Kayne 1994), coordination is represented as [A [& B]], so A might be accessible to *if-* prefixation, as it is to *aN-* prefixation.

Similarly, it is unclear how to block movement out of leftmost conjuncts of coordinate structures, deriving (100b) below from (100a).

(100) a. [N+i+arahaba [if- sy ny vadiny]] Rabe sy Rakoto.
PAST+ACT+greet e.o.and the spouse+3GEN Rabe and Rakoto

b. *N+ifamp+i+arahaba [e] sy ny vadiny Rabe sy Rakoto.
PAST+REC+ACT+greet [e] and the spouse+3GEN Rabe and Rakoto
'Rabe and Rakoto greeted each other and their spouses.'

Blocking (99b), on the *if-* = Affix view, follows from the definition of REC. The derived predicate takes just one (plural) argument, *Rabe sy Rakoto* in (100b), whence nothing licenses the additional presence of "[e] *sy ny vadiny*."

Seventh, only on the *if-* = Anaphor view must we stipulate the attachment site for *if-*. For example, if *if-* may occur as a possessor (then raise to object and incorporate into the verb, as in [43c]), why couldn't *if-* just prefix to the head of the possessive, *volo* 'hair'? Similarly, if causatives are treated as biclausal, as is common [DMP] and, in the spirit of the *if-* = Anaphor hypothesis, then "Rabe and Rakoto make e.o. dance" would be represented as in (101), with *if-* as external argument of intransitive *mandihy* 'dances'. What prevents it from prefixing to its immediately preceding verb, yielding the ungrammatical and senseless **mifandihy*?

(101) [amp- [[an+dihy] if]] [Rabe sy Rakoto]
[Cause [[act+dance] rec]] [Rabe and Rakoto]

In sum, the *if-* = Anaphor view leads to many unenlightening stipulations in the grammar and does not seem to support any interesting generalizations about Malagasy. We conclude that reciprocals in Malagasy are better treated by the valency reduction approach we have taken here. The only novelty it entails is that some derivational morphology is phrasal and thus recursive.[20]

20. Lidz (2001) argues against a valency reduction approach to reflexives in Kannada, which do present a verbal affix *koL/koND* that includes reflexive among its functions. His most convincing argument to our mind is that *koL/koND* may cooccur with a case-marked NP reflexive, so the accusative argument is not fully missing. Nishigauchi (1992) cites one instance in Japanese with a verbal-affix reciprocal cooccurring with an NP reciprocal. However, in Malagasy, Chichewa, and Nêlêmwâ, there are no NP reciprocals, so this evidence against the argument absorption of the reciprocal affix is not present in these languages.

REFERENCES

Andrianierenana, Clement-Luc. 1996. Morphological causatives in Malagasy. In *The structure of Malagasy,* vol 1., ed. by Matthew Pearson and Ileana Paul, 58–76. Occasional Papers in Linguistics 17. Los Angeles, Calif., UCLA Dept. of Linguistics.

Baker, Mark C. 1996. *The polysynthesis parameter.* Oxford: Oxford University Press.

Beck, Sigrid. 1999. Reciprocals and cumulation. In *Proceedings of SALT IX,* ed. by Tanya Matthews and Devon Strolovitch, 16–33. Ithaca, N.Y.: Cornell University.

Bril, Isabelle. 1994. *La structure de l'enoncé en Nêlêmwâ.* PhD dissertation, Université Paris 7.

———. To appear. Polysemy of the reciprocal marker in Nêlêmwâ . In *Typological Studies in Language,* ed. by V. P. Nedjalkov. Amsterdam: John Benjamins.

Büring, Daniel. 2001. *The syntax and semantics of binding theory.* Chap. 9. Ms. UCLA.

Dalrymple, Mary, Sam Mchombo, and Stanley Peters. 1994. Semantic similarities and syntactic contrasts between Chichewa and English reciprocals. *Linguistic Inquiry* 25:145–63 [DMP]

———. 1998. Reciprocal expressions and the concept of reciprocity *Linguistics and Philosophy* 21: 159–210.

Erwin, Sean. 1996. Quantity and moras: An amicable separation. In *The structure of Malagasy,* vol 1, ed. by Matthew Pearson and Ileana Paul, 2–31. Occasional Papers in Linguistics 17. Los Angeles, Calif., UCLA Dept. of Linguistics.

Heim, Irene, Howard Lasnik, and Robert May. 1991. Reciprocity and plurality. *Linguistic Inquiry* 22:63–101. [HLM]

Kayne, Richard. 1994. *The antisymmetry of syntax.* Cambridge, Mass.: MIT Press

Keenan, Edward L. 1972. Relative clause formation in Malagasy (and some related and some not so related languages). In *The Chicago Which Hunt,* ed. by Paul M. Peranteau, Judith N. Levi, and Gloria C. Phares, 169–189. Chicago: Chicago Linguistic Society.

———. 1976. Remarkable subjects in Malagasy. In *Subject and topic,* ed. by Charles Li, 247–301. New York: Academic Press.

———. 1995. Predicate-argument structure in Malagasy. In *Grammatical relations: Theoretical approaches to empirical issues,* ed. by Clifford S. Burgess, Katarzyna Dziwirek, and Donna B. Gerdts. Stanford, Calif.: Center for the Study of Language and Information.

———. 2000. Morphology is structure: A Malagasy test case. In *Formal issues in Austronesian syntax,* ed. by Ileana Paul, Vivian Philipps, and Lisa Travis, 23–41. Dordrecht: Kluwer.

Keenan, Edward L., and Cecile Manorohanta. 2001. A quantitative study of voice in Malagasy. *Oceanic Linguistics* 40:67–84. [K&M]

Keenan, Edward L., and Maria Polinsky. 1998. Malagasy. In *The handbook of morphology,* ed. by Andrew Spencer and Arnold Zwicky, 563–624. Oxford: Blackwell. [K&P]

Keenan, Edward L., and Baholy Ralalaoherivony. 2000. Raising from NP in Malagasy. *Lingvisticae Investigationes* 23:1–44.

Kemmer, Suzanne. 1993. *The middle voice.* Amsterdam: John Benjamins.

Law, Paul. 1995. On grammatical relations in Malagasy control structures. In *Grammatical relations: Theoretical approaches to empirical issues,* ed. by Clifford S. Burgess, Katarzyna Dziwirek, and Donna B. Gerdts, 271–91. Stanford, Calif.: Center for the Study of Language and Information.

Lichtenberk, Frantisek. 1991. Reciprocals and *Depatientives in* To'abaita. In *Currents in Pacific linguistics: Papers on Austronesian languages and ethnolinguistics in honour of George W. Grace,* ed. by Robert Blust, 171–83. Canberra: Pacific Linguistics.

Lidz, Jeffrey. 2001. The argument structure of verbal reflexives. *Natural Language and Linguistic Theory* 19:311–353.

May, Robert. 1985. *Logical form.* Cambridge, Mass.: MIT Press.

Mchombo, Sam. 1991. Reciprocalization in Chichewa: A lexical account. *Linguistic Analysis* 21:3–22

———. 1998. Chichewa. In *The handbook of morphology,* ed. by Andrew Spencer and Arnold Zwicky, 500–521. Oxford: Blackwell.

———. 1999. Quantification and verb morphology: The case of reciprocals in African languages. *Linguistic Analysis* 29:182–213.

Nishigauchi, Taisuke. 1992. Syntax of reciprocals in Japanese. *Journal of East Asian Linguistics* 1:157–96

Paul, Ileana. 1996. The AF marker and nasals in Malagasy. In *The structure of Malagasy,* ed. by Matthew Pearson and Ileana Paul, 49–58. Occasional Papers in Linguistics 17. Los Angeles, Calif., UCLA Dept. of Linguistics.

———. 1999. *Malagasy clause structure.* PhD dissertation, McGill University.

Paul, Ileana, and Lucie Rabaovololona. 1998. Raising to object in Malagasy. In *The structure of Malagasy,* vol. 2, ed. by Ileana Paul, 50–65. Occasional Papers in Linguistics 20. Los Angeles, Calif., UCLA Dept. of Linguistics.

Pearson, Matthew. 2001. *The clause structure of Malagasy: A minimalist approach.* UCLA Dissertations in Linguistics 21. Los Angeles, Calif.: UCLA Dept. of Linguistics.

———. To appear. The Malagasy subject-topic as an A' element. *Natural Language and Linguistic theory.*

Polinsky, Maria, and Eric Potsdam. 2001. Backward control: Evidence from Malagasy. Paper presented at AFLA [Austronesian Formal Linguistics Association] 8, MIT.

———. 2003. Control in Malagasy. Ms. Dept. of Linguistics, University of California, San Diego.

Rahajarizafy, R. P. Antoine. 1960. *Essai sur la Grammaire Malgache.* Antanimena Tananarive: Imprimerie Catholique.

Randriamasimanana, Charles. 1986. *The causatives of Malagasy.* Oceanic Linguistics Special Publications No. 21. Honolulu: University of Hawai'i Press.

Schein, Barry. 2001. Adverbial, descriptive reciprocals. abridged in *Proceedings of SALT XI,* ed. by Rachel Hastings, Brendan Jackson, and Zsofia Zvolenszky, ___–___. Ithaca, NY: CLC Publications, Dept. of Linguistics, Cornell University.

Schwarzschild, Roger. 1996. *Pluralities.* Dordrecht: Kluwer.

Siloni, Tal. 2001. Reciprocal verbs. Presented at the Israeli Association for Theoretical Linguistics. June 6.

Sternefeld, Wolfgang. 1998. Reciprocity and cumulative predication. in *Natural Language Semantics* 6:303–37.

Wechsler, Stephen, and I Wayan Arka. 1998. Syntactic ergativity in Balinese: An argument structure based theory. *Natural Language and Linguistic Theory* 16:387–441.

Williams, Edwin. 1991. Reciprocal Scope. *Linguistic Inquiry* 22:159–73

Edward L. Keenan
Dept. of Linguistics
UCLA
Los Angeles, CA 90095-1543
ekeenan@ucla.edu

Jean-Paulin Razafimamonjy
DIFP
Université d'Antananarivo
___