

We present an in depth study of reciprocals in Malagasy (W. Austronesian, Madagascar), arguing that they exhibit both lexical and syntactic properties and so are not localized to the Lexicon or to the Syntactic component thus do not support a Lexicon/Syntax parameter (for Malagasy) a la Siloni 2012. Rather they fit more naturally into a Distributed Morphology perspective (Embick and Noyer, 2005). Malagasy reciprocals are very productive and expressed exclusively in the verbal morphology; it has no reciprocal pronouns. In distinction to Romance, Germanic and Slavic, reciprocals do not overlap with reflexives, the latter expressed exclusively by pronouns in argument position. Reciprocals only overlap some with sociatives; there being a sociative prefix distinct from the reciprocal.

### Preliminaries

Like Philippine languages generally Malagasy syntax rides on its voice system. Verbs are derived by iteratively affixing roots (radicals) not themselves always words. We illustrate the four atelic voices below: AV (*active voice*): m+px+root; TV (*theme voice*): a+root; PV (*patient voice*): root+Vna; and CV (*circumstantial voice*): AV+px+root+ana).

- |      |   |    |
|------|---|----|
| 1 a. | [manolotra (m.aN+tolotra) vary ny vahiny amin'ny lovia vaovao] [izy] <sub>DP</sub><br>offers      pres.av.offer    rice det guest    prep'det dishes new    he/she<br><i>He offers rice to the guests on the new dishes</i> | AV |
| b.   | [atolony (a+tolotra+ny) ny vahiny amin'ny lovia vaovao] [ny vary] <sub>DP</sub><br>tv+offer+3gen det guest    prep'det dishes new    det rice<br><i>The rice is offered by him to the guests on the new dishes</i>          | TV |
| c.   | [tolorany (tolotra+ana+ny) vary amin'ny lovia vaovao] [ny vahiny] <sub>DP</sub><br>offer+pv+3gen    rice prep'det dishes new    det guests<br><i>The guests are offered rice by him on the new dishes</i>                   | PV |
| d.   | [anolorany (aN+tolotra+ana+ny) vary ny vahiny] [ny lovia vaovao] <sub>DP</sub><br>av+offer+cv+3gen    rice det guests det dishes new<br><i>The new dishes are used by him to offer rice to the guests</i>                   | CV |

These Ss all consist of a Predicate constituent followed by a *subject* DP. All are atelic, all have an imperative form, and all mark past tense with *n/no* and future with *h/ho*. They differ as follows: only the AV verb has *m* in present tense (which alternates with past *n* and future *h*). Also AV imperatives are formed by suffixing *-a* and shifting stress (phonemic) rightward. The three non-active verbs form their imperatives by suffixing *o* (= /u/), shifting stress right, unless the root contains an *o*, in which case they suffix *y* (= /i/). The imperatives of the verbs in (1) in order are: *manolora*, *atolory*, *tolory*, *anolory*. Independent of voice suffixing a root (+/- prefix) may induce an epenthetic consonant (better treated as part of the root, Erwin 2001 and Pearson 2001)

The first three voices, (1a,b,c), affix the root directly. The neutral active prefixes are *mi*, *man*, *ma*, and  $\emptyset$  (The latter two are closed classes). Whether a root takes only *mi*, only *man*, or both, must be listed. Some verbs have suppletive forms in some voices. The most usual PV ending is *-ina*, but in some cases, as here, *-ana*, (or *-ena* or just *-na*). We use *passive* for tv and pv collectively. Whether a root takes tv, pv or both must, again, be listed, and so is lexically conditioned.

In contrast circumstantial verb (CV) formation is fully productive, built by suffixing *-ana* to any of the AV forms. All AV verbs feed circumstantial (cv) forms, which nominalize by prefixing *f-* with complete productivity, preserving subcategorization and case marking of arguments and so is more transparent than gerund formation in English (see Ntelitheos 2012). All non-AV forms present the Agent phrase as a (suffixal) possessor of the verb, whereas AV verbs present it clause finally in the nominative (*izy* ‘s/he’ vs *-ny* ‘his/her’). In all the Ss in (1) only the clause final nominative DP can be relativized, host the interrogative particle *ve*, etc.

We now discuss the derivation of reciprocals, arguing that it is both lexical and syntactic in nature and thus not limited to just one component of the grammar.

## 1. Basic Reciprocals

Reciprocal IF affixes n+2 place AV predicates  $\phi$  to form n+1 place AV ones IF( $\phi$ ) which take a set as argument (per DMP/Poortman et al).

### 1. Lexical Properties:

#### 1.1 Reciprocal IF selects AV verbs, its allomorphs conditioned by the choice of AV prefix

- |   |                                       |
|---|---------------------------------------|
| 2 a. Manenjika (m+an+enjika) an-dRabe Rakoto<br>pres+av+chase acc-Rabe Rakoto | <i>Rakoto is chasing Rabe</i>         |
| b. Mifanenjika (m+rec+av+chase) Rabe sy Rakoto                                | <i>R&amp;R are chasing each other</i> |
| c. Mifanenjeha! (Stress shifted from <i>ne</i> to <i>nje</i> = "dze)          | <i>Chase each other!</i> (imperative) |
| 3 a. Niarahaba (n+i+arahaba) azy aho<br>greeted pst+av+greet 3acc 1s.nom      | <i>I greeted him</i>                  |
| b. Nifampiarahaba (n+ifamp+i+arahaba) isika<br>pst+rec+av+greet we.incl       | <i>We greeted each other</i>          |
| c. **Nifarahaba isika   | <i>We greeted each other</i>          |
| 4 a. Mahita anao aho<br>see you.acc 1s.nom                                    | <i>I see you</i>                      |
| b. Mifankahita Rabe sy Rakoto   | <i>Rabe and Rakoto see each other</i> |

A closed class of  $\phi$ -prefix verbs behave similarly: *m+ $\phi$ +ino* ‘believe’, *mifampino* ‘believe in each other’

**Remark** *amp-* and *ank-* are causative prefixes but in av *mi-*, *ma-* and  $\phi$ - verbs they just support *if-*. Historically *amp-* is likely *aN+f* = nominalizer, as in synchronic *aN+fo* = *ampo* (= /a.<sup>m</sup>pu/ ‘in heart’. And *ank-* is likely *aN+h* = nominalizer. So historically *if* may just prefixe to *aN*-active verbs.

#### 1.2 P2s may be built from P3s+Argument, and P1s + “accessible” PPs:

- |   |                                   |
|---|-----------------------------------|
| 5 a. m+aN+tolotra (manolotra) torohevitra an-dRabe Raso<br>pres+av+offer advice acc-Rabe Raso       | <i>Raso offers advice to Rabe</i> |
| b. m+if+aN+tolotra (mifanolotra) torohevitra Rabe sy Raso<br>pres+rec+av+offer advice Rabe and Raso | <i>R and R offer e.o. advice</i>  |

6 a. manoratra (m+aN+soatra) taratasy ho an-dRabe Rasoa *Rasoa writes letters to Rabe*  
writes pres+av+write letter for acc-Rabe Rasoa

b. mifanoratra (m+if+aN+soatra) taratasy Rabe sy Rasoa *R&R write letters to e.o.*  
pres+rec+av+write letters Rabe and Rasoa

7 a. manao (m+aN+tao) farafara ho an-dRaso Rabe *Rabe is making a bed for Raso*  
makes pres+av+make bed for acc-Raso Rabe

b. mifanao (m+if+aN+tao) farafara Rabe sy Raso *R and R are making beds for e.o.*

8 a. Mandainga (m+aN+lainga) amin-dRaso Rabe *Rabe lies to Raso*  
pres+av+lie prep-Raso Rabe

b. Mifandainga (m+if+aN+lainga) Rabe sy Raso *Rabe and Raso lie to each other*  
Lie to e.o. pres+rec+av+lie Rabe and Raso

But we cannot reciprocalize out of existence a rich PP (though the idea is expressible):

9 a. Mipetraka (m+i+petraka) akaikin-dRabe Raso *Raso is sitting near Rabe*  
pres+av+sit near-Rabe.gen Raso

b. \*Mifampipetraka Rabe sy Raso *Rabe and Raso are sitting near e.o.*

c. Mipetraka m+if+an+akaiky Rabe sy Raso *R & R are sitting near e.o.*  
pres+av+sit pres+rec+av+near Rabe and Raso

**Gen 1 Verbal affix reciprocals only bind one argument of a given verb to an antecedent.**  
**Pronominal reciprocals can do two:** *We protected / saved e.o. from e.o.*

**Corollary:** Reciprocal IF does not iterate (though IF( $\phi$ ) is AV: present tense *m*, imperative *-a*).

10. Nifaneho sary isika *We showed each other pictures*  
\*\*Nififaneho isika *We show each other to each other*

**Gen 2 (Malagasy) Theme, passive and circumstantial voice verbs do not reciprocalize**  
(But, reciprocal verbs causativize, which do reciprocalize, then causativize, passivize,...)

11 a. Enjehin-dRakoto (enjika+ina+Rakoto) Rabe *Rabe is being chased by Rakoto*  
chase+pass+Rakoto Rabe

b. \*Ifenjehin-dRakoto sy Rabe *Rabe and Rakoto are being e.o. chased*

### 1.3 Some reciprocal verbs lack a non-reciprocal source

12 a. Mifanaritarika (m+if+an+tarika<sup>2</sup>) any an-tsena any ny tovolahy ( $w^2 = \text{redup}(w)$ )  
pres+rec+av+lead there loc-market there det young.man

*The young men walk around the market a bit helter-skelter*

b. \*manarika, \*mifanarika. So the apparent sources for the reciprocal in (12a) do not exist.

13 a. Nifanena (n.if.an.tsena) t.any an-tsena Rabe sy Ravelo      *R and R met e.o. at the market*  
pst.rec.av.meet pst.there loc-market R and R

b. \*manena ‘meet’; *mitsena* = m.i.tsena ‘meet’.

Similarly *mifanerasera* ‘to communicate’ appears derived from \**manerasera*, non-existent, (indeed the apparent root *sera* no longer exists, *serasera* is (one of many) frozen reduplications).

#### 1.4 Reciprocal verbs which differ in meaning from their non-reciprocal source

14 a. mifampitaritarika any an-tsena any ny tovolahy ‘same meaning as (12a)’

b. mitarika / mitaritarika an-dRanaivo any an-tsena Rabe  
*Rabe leads/guides Ranaivo in the market*

c. [<sub>P1</sub>mitaritarika [if]] [Ranaivo sy Rabe]  
\**R & R lead each other in the market*      ✓*They moved around pele-mele in the market*

So in (14a) the root *tarika* ‘lead’ accepts the av *mi* prefix, optionally reduplicates, but both uses mean ‘lead, guide’ not ‘enter pele-mele’. So if we thought to interpret the meaning of (14a) using (14c) below we would not get the right meaning (interpreting *if as* EACH OTHER):

15 a. mifanisa (m.if.an.isa)      ny ankizivavy sy ny ankizilahy ao am-pianara.nay  
pres.rec.av.count det girls      and det boys      there at-class.our  
*There are the same number of boys as girls in our class*

b. manisa ny mpianatra tonga ny mpampianatra      *The teacher counts the students (who) arrive*

So *manisa* means to count, its reciprocal *mifanisa* does not mean “Each counts the other(s)”

16 a. M.i.dera azy aho      b. M.ifamp.i.dera      hery ny kandidats  
praise him 1s.nom      demonstrate (their) force the candidates

17 a. Kopahy ny vovoka manototra ny akanjo.nao      *Flap off the dust which covers your clothes*  
brush.off det dust (rel) covers      det clothes.your

b. Mifanototra hiditra ao am-pianarana ny ankizy      *The children want to enter class simultaneously*

So reciprocal *mifanototra* conjures images of people crowding each other, whereas non-reciprocal *manototra* (*m.an.tototra*) means to fill in, cover. A more striking case is the interrogative verb *maninona?* ‘What (are you) doing?’ and its “reciprocal” *Mifaninona?* ‘What kin relation are you?’

## 2. Some Syntactic Properties of Reciprocal Formation

### 2.1 Possessive Head Incorporation feeds Reciprocalization

Keenan & Ralalaoherivony 2000 discuss a highly productive process of Possessor Raising with incorporation of the head of an absolutive possessive DP into the predicate:

18 a. Tery [ny trano.nay]  
tight det house.our.excl  
*Our house is cramped*

b. [Tery trano] izahay  
Tight house we.excl  
*We are house-cramped*

Raising + Incorporation from Object also occurs productively and feeds Reciprocal Formation:

- 19 a. Mandidy [ny nonon'i Soa] ny dokotera  
av.cuts det breast'art Soa det doctor
- b. [Mandidy nono] an'i Soa ny dokotera  
av.cuts breast acc'art Soa det doctor
- 20 a. mandriotra ny volon'i Soa i Vao  
pres.act.pull det hair'art Soa art Vao  
*Vao is pulling Soa's hair*
- b. mandriro-bolo an'i Soa i Vao  
pull-hair acc'at Soa art Vao  
Vao is hair-pulling Soa
- c. mifandriro-bolo i Soa sy i Vao  
pres.rec.av.pull-hair art Soa and art Vao  
*Soa and Vao are hair-pulling each other*

Similarly we have: *nifanongotra nify Rasoa sy Ravelo* 'R&R reciprocally teeth extracted'; *mifankahita toetra Rasoa sy ny vadiny* 'Rasoa and her husband know each other's character'. We might note that the incorporated possessive head is not fully fused with the host verb, and separates from it when the host verb is non-active and the Agent phrase is present:

- 21 a. Tsy fantatro izay ifandroritany zazavavy volo  
not know.pass.1s comp rec.pull.cv'det young.women hair  
*I don't know why the women pulled e.o.'s hair*
- b. Nahagaga anay ny fifanongotan'izy ireo nify  
surprised us det nom.rec.av.pull.cv'3dem.pl teeth  
*Their mutual pulling of teeth surprised us*
- c. Mampalahelo anay ny fifandroritany i Soa sy i Vao volo  
cause-sad us.acc det nom.rec.av.pull.cv Soa & Vao hair  
S & V's mutual hair-pulling saddened us

There are cases however where a derived form is acceptable but the intermediate stage is not (reminiscent of English *Ed is said to be a thief* vs. ??*They say Ed to be a thief*):

- 22 a. mifangala-bady (m.if.aN.halatra-vady) Rabe sy Ranaivo *R&R steal e.o.'s spouses*  
rec. steal-spouse pres.rec.av.booty-spouse Rabe and Ranaivo
- b. \*mangala-bady an-dRanaivo Rabe *Rabe spouse-steals Ranaivo*

Nor is Raising+Incorporation totally free: the predicates created when Raising is from subject tend to be individual level, not stage level, and so the possession is often inalienable rather than transitory. Still, this sequence of operations is very widely used, and can iterate at least once:

- 23 a. Lavitra tokoa [ny lalana halehanay (h.a.leha.nay)] *The route we have to go on is long*  
far very det route fut.tv.go.our-excl
- b. [Lavi-dalan-kaleha tokoa] izahay *We have a long way to go* (izahay = we.excl.nom)

We even managed to squeak an acceptance for 23c, whose verb straddles the performance boundary:

- c. Nifampifandaka (n+if+amp+if+aN+daka) zanaka isika  
 pst+rec+cause+rec+av+kick child we.incl  
*We made each other's children kick each other*

## 2.2 ECM (Raising to Object) feeds Reciprocalization

- 24 a. Miahiahy Raso fa manitsakitsaka azy Rabe *Raso suspects that Rabe is deceiving her*  
 suspects Raso that deceives her Rabe
- b. [Miahiahy an-dRabe ho manitsakitsaka azy] Raso *Raso suspects Rabe of deceiving her*  
 suspects acc-Rabe HO deceives her Raso
- c. Mifampiahiahy ho manitsakitsaka / mifanitsakitsaka Rabe sy Raso  
 rec.suspect HO deceive deceive e.o. Rabe and Raso  
*Rabe and Raso suspect each other of deceiving each other*

Paul and Rabaovololona 1998 exhibit many other verbs (*mihevitra* ‘think’, *milaza* ‘say’,...) which enter this paradigm.

As Reciprocalization applies to predicates created by Possessive Head Incorporation and ECM, which are clearly syntactic not lexical operations we conclude that Reciprocalization also applies in the syntax. (Reciprocalizing the matrix verb in (24a) is ungrammatical. This in turn allows us to show that Causativization applies in the syntax, as it syntactically commutes with Reciprocalization and thus may apply after it:

## 2.3 Causative verb formation

Causative *amp-* (*ank-*) forms active verbs from active verbs, increasing arity by one (as does cv formation), as with morphological causatives generally (Turkish, Japanese). The subject argument of the causativized verb becomes accusative, and any preexisting accusatives remain. Unlike cv formation it is not a “voice” and, like reciprocals, just forms imperatives like actives in general.

- 25 a. Nandihy izy                      b. nampandihy                      azy aho                      (n.amp.aN.dihy)  
*He danced*                      *pst.caus.av.dance him I “I made him dance”*                      *pst.caus.av.dance*
- 26 a. manasa (m.aN.sasa) lamba izy                      b. mampanasa (m.amp.aN.sasa) lamba azy aho  
*wash*                      *clothes he*                      *pres.cause.av.wash clothes him I*  
*He is washing clothes*                      *I am making him wash clothes*

Causativizing ditransitive verbs yielding four arguments is unproblematic, and even iterating *amp-* (once) is grammatical (but heavy):

- 27 a. Nanome vola azy aho                      b. Nampanome vola an-dRabe azy aho  
 gave money him I                      made-give money acc-Rabe him I *I made him give money to R*
- c. mampanandroso vary ny vahiny an-dRaso Rabe                      *Rabe made Raso offer rice to the guests*  
 cause-offer                      rice the guest                      acc-Raso Rabe
- d. m.amp.amp.i.homehy azy an-dRabe aho *I made Rabe make him laugh*  
 pres.caus.caus.av.laugh 3acc acc-Rabe I

Causatives and Reciprocals commute syntactically: Rahajarizafy 1960. But semantically **IFoAMP** ≠ **AMPoIF**. Similar claims hold for Futunan (Moyses-Faurie) and for Chicewa (Mchombo)

28 a. Nifampanoratra taratasy fisaorana ireo ben'ny tanana ireo (n.if.amp.an.soratra)  
 pst-rec+caus+av-write letter thanks those mayors those pst.rec.caus.av.write  
*Those mayors made each other write thank-you letters*

b. Nampifanoratra an'ireo zanany ireo ny rainy (n.amp.if.aN.soratra)  
 pst+cause+rec+av+write acc'those children.his those the father.their pst.caus.rec.av.write  
*Their father made his children write to each other*

29. Mfûmu i+na+mény+án+its+á anyăni Chicewa; DMP  
 9chief 9sub+pst+hit+rec+cause+fv 2baboons  
*The chief made the baboons hit each other*

*Alenje* a+na+mény+ets+an+a (kw á mûbzi)  
 2hunters 2sub+past+hit+cause+rec+fv (by 10goats)  
 The hunters got each other hit (by the goats)

30. na faka-fe-'u'uti-'aki a le sã kuli e le toe Futunan; Claire Moyse-Faurie  
 pst cause-rec-bite-rec abs art clsf dog erg art child  
*The child made the two dogs bite each other*

e fe-faka-gakulu'aki a le sã toe  
 3 rec-cause-move.slightly'rec abs art clsf child  
*The two children made each other move a little*

In causatives of reciprocals, e.g. (28b), the antecedent of reciprocal *if* is the surface object, not the subject, which is the Agent of the causativized verb. This pattern holds for reflexives as well:

31. Nampamono tena an-dRabe ianao *You made Rabe kill/hit himself*  
 pst.caus.aN.kill self acc-Rabe 2s.nom

#### 2.4 Causatives of Reciprocals take Passive -INA and Circumstantial -ANA

32 a. Tokony *h.amp.if.an.entan.ina* ve ny isan'ny olom-boafidy sy ny isan'ny mponina?  
 Should [fut+[[cause+[rec+av+entana]]+pv]] Q the number of officials elected and the number of  
 the inhabitants be made to correspond to e.o.? (Nws92-95)

b. ny taratasy *nampifanoratan-dRabe* (n+amp+if+an+soratra+ana+gen.Rabe) ny zanany  
 the letters pst+cause+rec+av+soratra+cv-Rabe the children.his  
*the letter(s) that Rabe made his children write to each other*  
 (The letters that were caused by Rabe to be written by his children to e.o.)

c. ny teny vahiny *nifampianarantsika* (n + if + amp + i + anatra + ana + ntsika)  
 the foreign lgs taught to each other by us pst+[[rec+caus+av+study]+cv+1pl.incl.gen]

NB: (32c) shows that reciprocals of causatives undergo Circumstantial Formation and (32a) shows that *-ina* passives (pv) can be formed after Reciprocolization and Causativization, so these operations can





- 35 a. n.an.enjika azy amin'io fiara io Rabe  
 pst.av.chase him.acc with that car that Rabe  
*Rabe chased him with that car*
- b. N+aN+enjika+ana+Rabe (nanenjehan-dRabe) azy io fiara io  
 pst+[[av chase]+cv]+Rabe him.acc that car that  
*That car was used by Rabe to chase him (Rabe ≠ him)*
- c. nifanenjehan-dRabe sy Rakoto ireto fiara ireto  
 pst.rec.av.chase.cv-R and R dem.pl car dem.pl  
*Those cars were used by R & R to chase each other in*
- d. ny fiara (izay) nifanenjehan-dRabe sy Rakoto  
 the car (that) av+chase+cf.Rabe him  
*the car(s) in which R & R chased each other*

**NB** Whenever we relativize (question, cleft) an oblique the governing verb will be in the cv form as only subjects relativize., etc. Thus expressions like (35d) are common and natural.

- 36 a. ny soa (izay) nifanaovantsika (n+if+aN+tao+ana+ntsika)  
*the good (that) was done by us to e.o.* pst+[[rec+av+do]+cv]+our.incl
- b. ny taratasy nifanoratan-dRabe sy Rasoa n+if+aN+soratra+ana+R&R  
 the letters written to e.o by Rabe & Rasoa pst+[[rec+av+write]+cv]+R&R
- c. Nahoana izy ireo no tsy hifanampy? Tsy fantatro izay tsy h.if.an.ampi.a.ny  
 why they foc not fut.rec.av.help? Not known.by.me Comp not fut.rec.av.help.cv.3gen  
*Why don't they help each other? I don't know why they don't help each other*

## 2.7 Circumstantial Nominalizations (See Ntelitheos 2012 for a careful book length study).

Prefixing (tenselsss) cv verbs with *f* yields a gerundive nominal. It preserves the subcategorization and case marking of its verbal arguments. It is highly productive and transparently interpreted. The nominal may have DP internal antecedents for *if* or *if* may lack an antecedent, interpreted as “mutual”.

- 37 a. Mifanolotra (m.if.aN.tolotra) f.an.omez.ana isan-taona isika *We offer e.o. gifts each-year*  
 pres.rec.av.offer nom.av.give.cv each-year we.incl
- b. Ho.tohizana ny fifanolorantsika (f.if.aN.tolotra.ana.ntsika) fanomezana isan-taona  
 fut.continued det nom.rec.av.offer.cv.our gifts each-year  
*Our mutual offering of gifts each year will be continued (textual example)*
- c. f.if.anka.tiav.ana ‘mutual love’; ny fifankatiavan-dRabe sy Rasoa  
 nom.rec.caus.love.cv det mutual love-gen.Rabe and Rasoa *R&R's mutual love*
- 38 a. Nanameloka ny fifamonoana (f.if.aN.vono.ana) niseho tany Rwanda ny ONU  
 condemned the genocide nom.rec.av.kill.cv happened pst.there Rwanda det U.N.  
*The U.N. condemned the mutual killings (which) happened in Rwanda*

- b. Ny fifandirana (f.if.aN.ditra.ana) ela loatra no tsy mampiroso ny dinika  
 det squabbling nom.rec.av.dispute.cv long too FOC not advance det careful.study  
*This continual squabbling hinders the deliberations* (lit: not make-advance = make not advance)
- c. Ny polisin'ny tanana no mandamina ny fifamoivoizana (f.if.aN.voivoy.ana)  
 det police'gen.det town FOC control det traffic (mutual nom.rec.av.shuffle.cv)
- d. Fifanampiana Malagasy 'Malagasy Mutual Aid (Society)' (F.if.aN.ampy.ana = nom.rec.av.aid.cv)

Morphological reciprocal verbs also nominalize in Chicewa (Mchombo) and Futunan (Moyses-Faurie).

## 2.8 Agent nominalizations

These are formed by prefixing AV verbs, including reciprocals of causatives, so the agentive reciprocal marker *mp-* applies both to lexical items and to phrasal ones:

- 39 a. Mianatra 'studies' ⇒ mpianatra 'student'  
 b. Mampianatra 'cause to study' ⇒ mpampianatra 'teacher'  
 c. Mifanampy 'help e.o.' ⇒ mpifanampy 'people who are helping e.o.'  
 d. Mifankahalala 'detest e.o.' ⇒ mpifankahalala 'people who detest e.o.'  
 e. Mifankatia 'love e.o.' ⇒ mpifankatia 'lovers'  
 f. Mifanome vola 'give e.o. money' ⇒ mpifanome vola 'givers of money to e.o.'  
 g. Mifampilaza ho mpangalatra 'call e.o. thieves' ⇒  
 mpifampilaza ho mpangalatra 'people who call each other thieves'
- 40 a. ny mpampianatra (mp.amp.i.anatra) ahy "my teacher" lit: the teacher me  
 Det teacher er.caus.av.study 1s.acc  
 b. ny mpampianatro = 'the teacher-my' (the teacher I "possess" e.g. hired)

## 3. Further syntactic properties of reciprocal predicates

### 3.1 Coordination

Unsurprisingly reciprocal predicates coordinate with each other and with non-reciprocal ones.

- 41 ... ny fanaovana fanasana [ifampiarahabana sy [ifampirariana soa]] amin'ny mpiara-miasa aminy...  
 (newspaper example)  
 ... the doing of banquets in which they and the people who work with them greet each other and wish each other well ...
42. Nifampiarahaba sy nitsiky izahay *We greeted each other and smiled*  
 greeted e.o. and smiled we.excl

### 3.2 Tensed VP Sequences: Voice Harmony

Malagasy does not distinguish an infinitival form of a verb from a voiced tensed form, so Malagasy presents a variety of predicate types headed by sequences of tensed verbs. One such is as in (43) where the second verb functions adverbially (see Kalin and Keenan 2011).

- 43 a. Mihinana mitsangana Rabe *Rabe is eating standing up*  
 pres.av.eat pres.av.stand Rabe

- b. Mihinana sy mifampiresaka mitsangana Rabe sy Ranaivo  
 pres.av. eat and pres.rec.av.converse pres.av. stand Rabe and Ranaivo  
*Rabe and Ranaivo are eating and conversing standing up*

Of greater interest is that tensed verb sequences cover cases of control in English. It seems rather natural to treat such a verbal sequence as a single complex predicate whose arity is determined by the last verb and whose tense is determined by that on the initial verb, the tense on later verbs being determined as a function of that of the previous one. Verbs like *mikasa* ‘intends’, *mitady* ‘seeks to’, *maniry* ‘wants’, *mikendry* ‘plans’ form such complex predicates bound to the same subject and governing future tense. Relativizing (etc) on an argument of the final verb triggers appropriate voice on all the verbs in the chain – Voice Harmony. Here is an example. (Caveat: Iceberg ahead!). Note that the initial verb, *mikasa* ‘intend’ governs future on the following verbs (regardless of voice):

- 44 a. Nikasa hifanampy hitsara ny fanadinana omaly izahay (All verbs active)  
 pst.intend fut.rec.help fut.judge det exam yesterday we.excl/nom  
*We intended to help each other grade the exams yesterday*

- b. ny fanadinana (izay) no.kas.ai.nay h.if.an.ampi.ana ho.tsara.ina omaly  
 det exam comp pst.intend.pv.our.excl fut.rec.av.help.pv/cv fut.judge.pv yesterday  
*the exams that we intended to help each other grade yesterday*  
 lit: *the exams that were intended by us to be helped by each other to be corrected yesterday*

- c. Omaly no n.i.kas.an.tsika h.if.an.ampi.ana hitsarana ireo fanadinana ireo  
 yesterday FOC pst.av.intend.cv.our-incl fut.rec.av.help.cv fut.av.judge.cv those exams those  
*It was yesterday that we intended to help each other grade those exams*

A commonly cited (e.g. Rajaobelina 1960) paraphrase of control as in (45a) is with an apparent nominalization of the complement VP:

- 45 a. Maniry hiala sigara aho *I want to quit smoking*  
 pres.av.desire fut.av.leave cigarettes 1s.nom
- b. Maniry [ny hiala sigara] aho *I want to quit smoking*  
 pres.av.desire [det fut.av.leave cigarettes] 1s.nom
- c. [Iriko (iry.ina.ko) hialana] ny sigara *I want to quit smoking*  
 desire.pv.1s.gen fut.leave.pv det cigarettes
- d. Iriko [DP ny hiala sigara] *I want to quit smoking*  
 desire.pv.,by.me [ det fut. av. leave cigarettes]

The subject of (45a,b) is “I”, that of (45c) is “the cigarettes” and that of (45d) is the DP “the future quitting smoking”. Tensed predicates host Dets like *ny* ‘the’ or demonstratives like *io...io* ‘that’ to form a DP. The DP boundary breaks the verbal sequence so the voice of the verb within the DP is active, independent of that of the matrix verb, which is passive (pv). This use of the DP boundary applies in our more complex examples. Thus (44c) with all verbs circumstantial, is paraphrased by (44e) below:

- e. Omaly no nikasantsika [ny hifanampy hitsara ireo fanadinana ireo]  
 yesterday FOC intend.cv.our [det fut.rec.av.help fut.av.judge those exams those]  
 It was yesterday that we intended the helping of each other to grade the exams.

### 3.3 Cross clausal binding

It is common in Malagasy discourse to find an initial S followed by a complementizer or subordinate conjunction plus a mere tensed VP whose understood subject is the same as that of the initial VP.

- 46 a. Tsy nanatrika ny fety Rabe satria narary *R didn't attend the party as (he was) sick*  
not pst.av.attend det party Rabe because was.sick
- b. Mihevitra Rabe fa hahazo ny valisoa *Rabe thinks that (he) will get the prize*  
Pres.av.think Rabe that fut.receive det prize
- c. Diso hevitra ianao raha mino izany *You are mistaken if (you) believe that*  
Wrong thought 2.s if believe that
- 47 a. Mampanantena an'i Koto ny zokiny fa ho azony ny valisoa (iriny)  
cause.hope acc'art Koto det elder sibling comp fut receive.pass.3gen the prize (desired by him)  
*His elder sibling promises Koto that the prize will be received by him*
- b. Mifampanantena i Koto sy ny zokiny fa hahazo ny valisoa (iriny)  
pres.rec.caus.hope art Koto and det elder sibling.his comp fut.av.receive det prize desired by him  
*Koto and his elder sibling promise each other that he (the other) will get the prize (he desires)*
- b'. Mifampanantena fa hahazo ny valisoa (iriny) i Koto sy ny zokiny  
rec.hope that fut.receive the prize desired by him art Koto and det elder sibling of his
- b''. Mifampanantena hahazo ny valisoa (iriny) i Koto sy ny zokiny  
rec.hope fut.receive the prize (desired by him) art Koto and det elder sibling of his

The main predicates in (47b',b'') are reciprocal and syntactically complex. We are clearly just touching serious binding patterns here. We note cases where both the matrix and "lower" verb are reciprocal:

- 48 a. Manome toky Rabe fa hamelona an-dRasoa *Rabe promises that (he) will support Raso*  
av.give trust Rabe comp fut.av.live acc-Raso
- b. Mifanome toky Rabe sy Raso fa hifamelona *R&R promise that (they) will support e.o.*
- c. Mifanome toky hifamelona Rabe sy Raso *R&R promise e.o. to support e.o.*

In (48c) we have a complex reciprocal predicate with reciprocity marked twice, once on each verb. A similar example is (49)

- 49 a. Nifanampy nifandefa entana izahay *We help each other send each other packages*  
pst.rec.help pst.rec.send package we.excl.

### 4. Malagasy Reciprocals compared with those of other languages

Here we note a bit randomly how Malagasy behaves relative to various properties discussed for reciprocals in other languages.

#### 4.1 Is reciprocal -if- an anaphor moved into the verb in the syntax?

It has been suggested to me that as in (50) we might treat *-if-* as an object pronoun interpreted as EACH OTHER. It would later move to incorporate into the verb:

- 50 a. Manaja (m+an+haja) azy<sub>i</sub> Rabe<sub>j</sub> *Rabe respects him (i ≠ j)*  
 b. Mifanaja [e<sub>j</sub>] [Rabe sy Rakoto]<sub>j</sub> *Rabe and Rakoto respect each other*

But there are many reasons to reject this analysis. First, the personal pronouns distinguish three cases: nominative, accusative, and genitive. And they vary with person and number. *-if-* is morphologically constant, showing none of these pronominal attributes. Further pronouns do not incorporate into the verb (though the possessors, including pronominal ones, are linked to the end of the verb). So verbs vary in form with tense, aspect and voice but not with person. We note that *-if-* does not impose a plural requirement on its subject, as the use of the comitative construction with a singular subject is common:

- 51 a. Mifanaraka hevitra aminao aho *I rec-agree with you / We agree with each other*  
 pres.rec.av.follow thought with.your I  
 b. Nifankahita t.amin-dRabe Rakoto *Rakoto reciprocally saw Rabe*  
 pst.rec.av.see pst.with-Rabe Rakoto

Second, we have already noted that in several cases the semantic interpretation of a reciprocal verb is somewhat idiosyncratic, not that predicted by rendering symmetric the relation denoted by the underlying non-reciprocal verb. *Manisa* means to count, but reciprocal *mifanisa* does not mean to (mutually) count each other. Rather it is better rendered as “divide in half”.

Third, and even worse, we noted several cases above where the underlying non-reciprocal verb simply does not exist and so has no interpretation that we could enrich by forcing it to be symmetric. That is (52b) does not provide a semantic basis for interpreting (52a) as the Malagasy speaker does not assign an interpretation to \*manena:

- 52 a. mifanena any an-tsekoly Rabe sy Rasoa *meet e.o. there at-school Rabe and Rasoa*  
 b. \*[manena [if]] any an-tsekoly Rabe sy Rasoa

Fourth the existence of an object comparison reading in Ss like (53) has been held to justify the existence of a reciprocal anaphor in object position. And as indicated Malagasy lacks this reading:

53. Mifankatia (m.ifank.tia) kokoa Rabe sy Rasoa noho Ranaivo sy Ravao  
 pres.rec.like more Rabe and Rasoa than/against Ranaivo and Ravao  
*Rabe and Rasoa like e.o. more than Ranaivo and Ravao like e.o.* (Subject Comparison)  
 \**Rabe and Rasoa like e.o. more than they like Ranaivo and Ravao* (Object Comparison)

Fifth Malagasy does not support the “I” reading in cases like (54):

- 54 a. John and Mary think they love each other  
 b. John and Mary each think “We love each other” (“We” reading)  
 c. John thinks he loves Mary and she thinks she loves him (“I” reading)
- 55 Mihevitra Rabe sy Rasoa fa mifankatia *R & R think that they love e.o.*  
 pres.av.think Rabe and Rasoa comp love e.o.  
*Each thinks “we love each other” – no other reading*

HLM represent the scope ambiguity in (54) using *each other* as an object anaphor and moving *each* to different landing sites. This assumes *each other* is in argument position. So the absence of a reciprocal anaphor in Malagasy is consistent with the absence of an object comparison reading. Also reciprocal *if* in Malagasy is synchronically monomorphemic, so no movement of “each” can be appealed to. (But historically the Malagasy reciprocal reconstructs to *fai* (Blust, pc < *paRi*). (cf Futunan *fe-*). Perhaps the *i* in *if* is just the active voice *i-* and the diphthong *ai* assimilates to the following vowel.

Sixth, on the *if*= anaphor view the reciprocal allomorphy is unexpected as pronouns do not vary in shape with the active prefix of their governing verb: *manenjika azy izy* lit: chases him he; *mikapoka azy izy* ‘beats him he’; *mahita azy izy* ‘sees him he’. Additional reasons for rejecting the *if*= anaphor view are given in Keenan & Razafimamonjy 2004. Here is just the most obvious one: *if* does not occur in argument positions:

- |   |  |
|---|--|
| 56 a. *[Niarahaba [if]] isika<br>greeted EO we.incl<br><i>We greeted each other</i> | b. Niarahaba azy isika<br>greeted him we.incl<br><i>We greeted him</i> |
|---|--|

One might counter that *if*-incorporation is obligatory, but *if* should still occur in contexts that independently block movement:

- |  |  |
|--|--|
| 57 a. Niarahaba azy sy ny vadiny isika<br>greeted him and the spouse.his we.incl | b. *Niarahaba if sy ny vadiny isika<br>greeted EO and the spouse.his we.incl |
|--|--|

#### 4.2 Semantic diversity: Chaining and Inanimates

- |   |  |
|---|--|
| 58 a. mifandimby (m+if+ aN+dimby) ny taona<br>pres+rec+av+successor det year  | <i>The years follow upon one another</i>                         |
| b. Ohatra ny zaza mifanarakaraka izahay<br>Like det child pres.rec.(follow) <sup>2</sup> we.excl.   | <i>We quarrel all the time</i> (like older and younger siblings) |
| c. mifanapatapaka (m+if+an+tapaka <sup>2</sup> ) eto ireto roa tsipika ireto<br>pres+rec+av+cut here dem.pl two line dem.pl                               | <i>These two lines intersect here</i>                            |
| d. Mifanasaka / misasaka (< sasaka ‘half’) ny ankizilahy sy ny ankizivavy ao am-pianaranay<br><i>The boys and the girls in our class each number half</i> |  |
| 59 a. Akaiky ny tranoko ny azy<br>near det house.my det his   | <i>His house is near mine</i>                                    |
| b. mifanakaiky (m+if+ an+akaiky) ny tranonay  | <i>Our houses are near each other</i>                            |

A similar case is *tandrify* / *mifanandrify* ‘be opposite (each other)’.

**notation** w<sup>2</sup> is the reduplication of w. It involves dropping weak endings *-ka*, *-na*, *-tra* and some consonant mutation: *tapaka*<sup>2</sup> = *tapatapaka*; the (non-reciprocal) av form is *manapatapaka*. Reduplication is widely used, applies to roots (and some *aN*+root) and so feeds Reciprocalization (in distinction to Chicewa where the reciprocal affixes copy under Reduplication). Reduplicating after reciprocalization in (58c) we get, incorrectly, *\*mifanapakapaka*.

### 4.3 Sociatives

As reciprocals require two or more participants they may involve a notion of “togetherness”, with some verbs more than others. Of note though Malagasy presents a specifically sociative prefix derived from the verb *miaraka* ‘to do or be together’.

- 60 a. *miaraka* (m+i+araka)    *izahay*  
pres+av+follow we.excl                      *We are together*
- b. *miasa* (m+i+asa)    *izy ireo*  
pres+av+work 3nom dem.pl                      *They are working*
- c. *miara-miasa* (m+i+ara(ka)-m+i+asa)    *izahay*  
pres+av+follow-pres-av-work we.excl                      *We work together*
- d. *mpiara-miasa* (mp+i+ara(ka)-miasa) *izahay*  
er+av+follow-pres+av+work we.excl                      *We are co-workers*

The prefixal status of *miara-* is shown by the fact that throughout the language compounding w+w' triggers the loss of final *-ka*, *-tra*, and *-na* on w, mutating an initial continuant consonant of w' to the corresponding non-continuant: *manapaka+hevitra* ‘decide’ = *manapa-kevitra* : lit cut+thought’, *mivarotra+hena* = *mivaro-kena* ‘sells meat’. But with *miaraka*+verb, usually an initial consonant on w' just copies that on *miaraka*. So we have *hiara-hiasa*, *hiara-kihira* ‘will jointly work, sing, etc. rather than *hiara-kiasa*, *hiara-kihira*, etc.

### 4.4 Affixless Reciprocals

Malagasy presents lexical verbs which incorporate mutual participation. They normally also take reciprocal morphology, so here reciprocal and non-reciprocal verbs have the same meaning.

- 61 a. *mipaka* (m+i+paka) / *mikaona* (m+i+kaona)    *ireo hazofisaka ireo*  
pres+av+touch                      pres+av+join these boards    these  
*These boards touch / are joined*
- b. *mifampipaka* (m+ifamp+i+paka) / *m+ifamp+i+kaona*    *ireo hazofisaka ireo*  
*These boards touch / are joined to each other*
- c. *Mifanasaka* / *misasaka* (< *sasaka* ‘half’) *ny ankizilahy sy ny ankizivavy ao am-pianaranay*  
*The boys and the girls in our class each number half*

### 4.5 Event quantifiers

Ss like (62a) are not felt as ambiguous as between (62b) and (62c). A speaker of (62a) might simply not have considered the distinct situation types expressed by (62b,c). So the adverbial modification adds new information.

- 62 a. *Nifandaka* (n.if.an.daka)    *intelo Rabe sy Rakoto*                      *Rabe and Rakoto kicked e.o. three times*  
pst.rec.av.kick 3 times R and R
- b. *Nifandaka* *intelo nisesy* *Rabe sy Rakoto*                      *They kicked each other three times in a row*
- c. *Nifandaka* *intelo avy* *Rabe sy Rakoto*                      *They kicked each other three times each*

### 4.6 Quantified antecedents

Worth noting that reciprocal P1s accept quantified DP antecedents just as non-reciprocal ones do (see Keenan 2008, Paul 2012).

63. Mifankahazo / Mifanentana ny mpianatra rehetra (ao an-dakilasy)  
 Get-along-with e.o / get-along-with e.o. det student all (there in-class)  
*The students in the class all get along with each other*

*ny mpianatra rehetra* ‘det student all’ can be replaced by: *ny ankamaroan’ny mpianatra* ‘the majority of the students’, *ny mpianatra vitsivitsy* ‘few students’, *ny antasaky ny mpianatra* ‘half the students’, *ny valompolo isan-zaton’ny mpianatra* ‘80% of the students, *ny roa ampahatelon’ny mpianatra* ‘two thirds of the students’. Often non-increasing DPs are expressed predicatively:

64 a. Tsy nisy afa-panadinana ny mpianatra na iray aza *No student at all passed the exam*  
 not was/had free-exam det student or one even

b. Antasaky ny mpianatra katroka no m.if.an.entana  
 half.gen det student exactly FOC get along with each other  
*Exactly half the students get along with each other*

#### 4.7 A Closing note on reciprocal imperatives

We have claimed that reciprocals are active in voice and indeed take their imperative with -a, shifting stress. When we put them in the circumstantial form they take their imperatives with -o/-y, as indicated.

65 a. Manao (m.an.tao) farafara ho azy Rabe *Rabe is making beds for him/them*  
 pres.av.do bed for 3acc Rabe

b. Manaova (m.an.tao,va) farafara ho azy!  
 pres.av.do.imp *Make beds for him/them!*

66 a. Mifanao (m.if.an.tao) farafara Rabe sy Rajaona *R and R are making beds for e.o.*  
 pres.rec.av.do

b. Mifanaova (m.if.an.taov.a) farafara!  
 pres.rec.av.do.imp *Make beds for each other!*

67 a. ifanaovan-dRabe sy Rakoto farafara ity vy ity *This metal is used by R&R to make e.o beds*  
 rec.make.cv R and R bed this metal this

b. ifanaovy farafara ity vy ity!  
 rec.make.cv.imp bed this metal this *Use this metal to make beds for each other!*

NB: The English translations of non-active Ss are clumsy, but they remind the reader that the verbs have a different voice morphology than the active one. They are fully natural in Malagasy. □

#### Conclusion

Malagasy reciprocals are highly productive. They exhibit both classical properties of being lexical, but also enter many syntactically productive paradigms. Thus our data do not support a universal Lexicon/Syntax parameter (contra Siloni 2012) nor do we see anything conceptually problematic about an operation that introduces bound morphology in the syntax and also has exponents in the lexicon.

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