Verbal Reflexives/Reciprocals in (Some) Formosan Languages*

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Abstract

This paper examines forms and functions of verbal reflexives/reciprocals in some Formosan languages. Two issues are addressed: one is their polysemies and the other is related to their reduced transitivity. For verbal reflexives, the extended uses in Formosan languages center around reflexive, decomitative and anticausative. For verbal reciprocals, the extensions are confined within the semantic domain of reciprocal, chaining, collective and distributive. None of their (reflexives and reciprocals) distributions and functions overlaps with each other, which suggests that reflexives and reciprocals in Formosan languages take two divergent paths of developments, very unlike the one proposed in Geniušienė (1987) and Kemmer (1993) in a wide variety of languages. Regarding the issue of transitivity, many previous studies (e.g., Gerdts 2000, McGregor 2000, Mchombo 1993) often conclude that syntactically the derived reflexive/reciprocal constructions are intransitive. This is not exactly what we found in (some) Formosan languages. A careful examination reveals that a verbal reflexive/reciprocal does not necessarily derive an intransitive construction.   It simply reduces the number of arguments

1. Introduction

The study of reflexivization/reciprocalization has maintained a central position in either generative or traditional grammar since its inception.   Cross-linguistically there are two basic strategies for the expression of reflexivity/reciprocity.   Some languages use an anaphoric noun/pronoun while others use a verbal affix or a verbal predicate, as illustrated in (1-2).[1]   The English *himself* and *each other* are of the nominal type; the Kannada reflexive in (2b) and the Chicheŵa reciprocal in (2e) are of the verbal type.   These two mechanisms (an anaphoric noun/pronoun and a verbal affix/predicate) for the expression of reflexivity/reciprocity are not mutually exclusive, however.   It's quite common cross-linguistically that languages might have both (cf. Geniušienė 1987; Kemmer 1993).[2]   For Formosan languages, this generalization holds true for reflexives and reciprocals as shown in Table 1.   In this paper, we will focus on the discussion of verbal reflexives/reciprocals mainly in six Formosan

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[1] For verbal reflexives/reciprocals, here we define them as markers whose morphology is associated with verbal predicates which could be an affix, a clitic, or a particle.

[2] Among verbal and nominal strategies, König and Kokutani (forthcoming) draw a further distinction between a verbal affixal strategy (Swahili) and a deverbal one (Mandarin), and a pronominal strategy (German) and a quantificational one (English).   The discussion of reciprocals in this paper will not take such a four-way distinction.

languages (Tsou, Saisiyat, Kavalan, Amis, Rukai, Paiwan) with regard to two center issues: one is their semantic functions and the other is related to their transitivity.

(1) Languages Which Use Nominal Anaphoric Expressions[3]

a. English

John saw **himself**.

John and Tom hate **each other**.

b. Russian (Kazenin 2001)

Ivan moet **sebja**

Ivan washes self

'Ivan washes himself.'

c. Italian (Giorgi 1984)

Gianni ritiene che Osvaldo sia convinto che quella casa appartenga ancora alla **propria** famiglia.

'Gianni believes that Osvaldo is persuaded that that house still belongs to self's family.

d. Icelandic

Mennirnir telja   aí   strákarnir   hati **hvorn annan**

the man   believes   that the boys   hate each   other

'The man believes that the boys hate each other.'

(2) Languages Which Use Verbal Anaphoric Expressions

a. Diyari (Austin 1981)

ngani muduwa-**tadi**-yi

1SGS scratch-REFL-PRES

'I scratch myself.'

b. Kannada (Amritavalli 1984)

avan-u   tann-annu hoDe-du-**koND**-a

he-NOM self-ACC hit-PP-REFL.PST-3SM

'He hit himself.'

c. Lithuanian (Geniušienė 1987)

on-a   grazina-**si**

ann-NOM   adorns-REFL

'Ann adorns herself.'

d. Russian (Babby 1975)

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[3] The following abbreviated glosses are used: Acc: accusative case; AF: agent focus; Cau: causative; Excl: exclusive; Fut: future; Gen: genitive case; Incl: inclusive; Lnk: linker; Loc: locative case; M: Male; NAF: non-agent focus; Ncm: non-common noun marker; Neg: negation; Nom: nominative case; Pfv: perfective; Pl: plural; Red: reduplication; Refl: reflexive marker; Sg: singular.   The glosses of the data taken out from other authors will stay as they are in the original sources.

on   zastrelil-**sja**

he-NOM shot-REFL

'He shot himself.'

e. Chicheŵa (Mchombo 1993: 191)

Mbĭdzi   ndí   nkhandwe   zi-ku-mény-**an**-a

10-zebras   and   10-foxes   10SM-pres-hit-recip-FV

'The zebras and the foxes are hitting each other.'

f. Halkomelem (Gerdts 2000: 140)

ʔiʔ   ha:qʷə-**təÍ**(*-əs)   tə   sqʷəmqʷəméẏ

AUX   smell:CONT-TR:REC(-3ERG)   DET dogs

'The dogs are smelling one another.'

Table 1. Expressions of reflexives/reciprocals across (some) Formosan languages

	Languages	Reflexives	Reciprocals
Type I: Nominal Strategy	Kavalan	ayzipna	nan-
	Saisiyat	nonak	saso-
	Tsou	iachi	na-/nat-
	Amis	niyah	mala-
	Seediq	nanak	ms-/mt-
	Budai Rukai	NONE	-ma-
	Timur Paiwan	NONE	mare-
Type II: Verbal Strategy	Kavalan	NONE	sim-
	Saisiyat	nonak/ki'nonak	makak-, Ca-, sasobae:oeh
	Tsou	iachi (AF)/iachia (NAF)	yupa-
	Amis	NONE	mala-, ma-(C)a
	Seediq	nak	m-C-
	Budai Rukai	ngi(-a)-, ngi(-a)-kakamani	ma-Ca
	Timur Paiwan	ki-, kimad(j)u	ma-(C)a-

2. Nominal Reflexives/Reciprocals

Before discussing verbal reflexive and reciprocal constructions, which is the main focus of this paper, we will provide a brief description of the syntactic and semantic distribution of nominal reflexives and reciprocals. As shown in Table 1, while nominal reflexives are separate lexical nouns/pronouns that can occur independently, reciprocals are all nominal bound affixes.

Let us first look at reciprocals. Nominal reciprocals, unlike their verbal

counterparts, are less productive and lexically restricted.   While verbal reciprocals are used productively and can be affixed to any verb as long as the resulting form is semantically allowed, only a few nouns can be the host for nominal reciprocals, and all of them express either kinship or personal relationships.   The examples are illustrated in (3).

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(3) Nominal Reciprocals
a.   Kavalan
    (i) **nan**-tama   ci   utay   atu ci   buya
        Rec-father   Ncm   Utay   and Ncm Buya
        'Utay and Buya are father and son.'
    (ii) **nan**-kaput qanyau
        Rec-friend 3Pl.Nom
        'They are friends.'
    (iii) **nan**-epaw[4] ci   buya   atu ci   ukis
        Rec-house Ncm   Buya and Ncm   Ukis
        'Buya and Ukis are husband and wife.'
b.   Saisiyat
    lasia   **saso**-'aela'[5]
    3Pl.Nom   SASO-enemy
    'They are enemies (to each other).'
c.   Tsou
    (i)   **na**-vconga
        Rec-spouse
        'spouses'
    (ii) **nat**-'ohaesa
        Rec-younger.brother/sister
        'brothers/sisters'
    (iii) **na**-nghia
        Rec-friend
        'friends (to each other)'
    (iv) **na**-'vama
        Rec-father.and.son/daughter
        'father and son', 'father and daughter'
    (v) **na**-'ina
        Rec-mother
        'mother and daughter'
d.   Amis

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[4] Without the reciprocal marker *nan-*, 'house' is pronounced as *repaw.*
[5] This prefix is probably derived from *sasobae:oeh* 'do sth.to each other'

(i) **mala**-kaka-ay   ci   kacaw atu   ci   ofad

Rec-elder.sibling-AY Ncm Kacaw   and Ncm Ofad

'Kacaw and Ofad are brothers.'

(ii) **mala**-ramud-ay   ci   kacaw atu   ci   panay

Rec-spouse-AY   Ncm   Kacaw   and Ncm   Panay

'Panay and Kacaw are husband and wife.'

(iii) **mala**-widan-ay   ci   kacaw atu   ci   ofad

Rec-friend-AY   Ncm   Kacaw   and Ncm Ofad

'Kacaw and Ofad are friends.'

e. Rukai

(i) la-**ma**-taka

Pl-Rec-elder.brother/sister 'brothers and sisters (to each other)'

(ii) la-**ma**-lala

Pl-Rec-male.friend 'friends (to each other)'

f. Paiwan

mare-cekel-anga tiamadu

Rec-spouse-Pfv 3Pl.Nom

'They are spouses.'

For nominal reflexives, there is no nominal anaphoric expression in Rukai and Paiwan. Reflexivity in Tsou, Saisiyat and Amis is marked by an anaphoric noun denoting the meaning 'self'.   These reflexives can occur in argument positions[6] and they take nominal case markers obligatorily such as *'si, no* in Tsou, *hi* in Saisiyat or *ku* in Amis. They can also function as noun modifiers within an NP.   Examples are given in (4).

(4) Nominal Reflexives
a. Tsou

(i) sU'no   no   **iachi**   'e voyu

AF.angry Obl   oneself   Nom voyu

'Voyu is angry at himself.'   (Szakos 1994: P151, 14)

(ii) is-i   sU'nova ta   Voyu   si   **iachi**

NAF-3rd.sg.   AF.angry Obl Voyu   Nom   self

'Voyu is angry with himself (for something).'

(ii) ho micu   eno maica   o'a   mo melU eupihi

AF-already   like   Neg AF able   swim.to.the.opposite.bank

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[6] One syntactic restriction by which nominal reflexives vary across Formosan languages is the syntactic position of the antecedent.   Assuming most of Formosan languages are all ergative (or split ergative) in nature, as widely discussed in the literature, there exists a variation of whether or not the coreference is permissible between Agent antecedent in object position and Patient reflexive in subject position. We won't address this issue here.

ho timaka   'e **iachisi**   feango.
ho vent.one's.anger.on   Nom his own   body
'The situation has been like this.   I cannot swim to the opposite bank; therefore, I blame my own body.'   (Szakos 1994)

b.   Saisiyat
  (i)   Iban   paka:i'   hi **nonak**
        Iban   believe   Acc self
        'Iban believes himself.'
  (ii) rayhil   kita'-en   ni **nonak**.
        money   see-PF   Gen self
        'I saw/found the money.'
  (iii) hiza mingkoringan korkoring h-om-iwa   ka   **nonak** tatre
        that woman   child   cut-AF   Acc self finger

        'That girl cut her own finger.'

c.   Amis
  (i)   ma-'araw   ni ofad   ku **niyah** i   daningoan
        PF-see   Gen Ofad Nom self Loc mirror
        'Ofad saw himself in the mirror.'
  (ii) mi-nengeng kaku   tu   tireng no **niyah** i daningoan
        AF-see   1Sg.Nom Obl body Gen self Loc mirror
        'I saw my own body in the mirror.'

In the case of Kavlan, due to the lack of a unique reflexive marker, it mainly deploys the other device to express reflexivity, namely the personal pronouns.   As shown in (5), the pronominal is coindexed with another argument within the same clause where the pronominal occurs, forcing a reflexive reading.

(5) Kavalan
a.   m-ipes-iku   ti   **mayku**
      AF-dislike-1Sg. Nom   Ncm   1Sg.Acc
       'I dislike myself.'
b.   tebuq-an-su   **aysu**
      cut-NAF-2Sg.Gen   2Sg.Nom
      'You cut yourself.'
c.   muRubu   ci   buya   ti   **mayzipna**
      praise.AF   Ncm   Buya Ncm   3Sg.Acc
       'Buya praises himself.'
d.   tayta-an ni buya   ta-paninuwan-an **ayzipna**
       see-NAF Gen Buya Loc-mirror-Loc 3Sg.Nom

'Buya saw himself in the mirror.'

The original functions of *mayku*, *aysu*, *mayzipna* and *ayzipna* in (5a)-(5d) are personal pronouns (cf. Chang 1997).   However, because of the absence of a reflexive marker, these personal pronouns are also used as the reflexive anaphors, serving the same function of 'self' as in English.   Therefore, what are expressed by 'I dislike myself' and 'You cut yourself' in English are expressed as 'I dislike me' and 'You cut you' in equivalent Kavalan clauses.[7]   If we examine carefully the form of the third person pronoun, *ayzipna*, in (5d), the internal make-up of this expression is sufficiently transparent as a result of combining a nominal case marker *a*, the expression of body (*izip*) and a third person genitive pronominal suffix –*na* (a + izip + na > ayzipna).[8] As pointed out in Faltz (1985), Geniušienė (1987), Kemmer (1993), Schladt (1999), König (2001) and many others, abundant cross-linguistic evidence suggest that the derivation of reflexive markers from expressions of body parts is a common development of semantic change, either diachronically or synchronically.   For instance, Haitian uses the noun *tèt* 'head' in (6), Old French uses *cors* 'body' with a possessive pronoun in (7), some of the Chadic and African languages use the noun 'head' or 'body' as reflexive anaphors in (8), and Malagasy uses the NP *tena* 'body' and DP *ny tenany* 'her/his body' as reflexive anaphors as in (9) (Frajzyngier 2000; Heine 2000; Reh 1985).

(6) Haitian (Déchaine and Manfredi 1994: 203-04)

   Yo wè **tèt**   yo

  3pl see head   3pl

  'They saw themselves.'

(7) French (Geniušienė 1987)

a.   mun cors 'myself', lit. 'my body'

b.   sun cors 'himself', lit. 'his body'

(8) Krongo (Reh 1985: 173)

a.   N-ákùrà-ŋ à?àŋ   **òonó**

   I-scratch-TR I   body

   'I am scratching myself.'

b.   N-ántàná-ŋ à?àŋ   **őötù**

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[7] This dual function of pronominals, however, often cause ambiguity, i.e. the interpretation may be pronominal or reflexive. When the antecedent and the anaphor are first or second persons, as in (5a) and (5b), obviously there can be only one interpretation. But when the third personal pronouns are involved, ambiguity arises. Therefore, besides the reflexive interpretation above, (5c) and (5d) can also have a pronominal interpretation, 'Buya$_i$ praises him$_j$' and 'Buya$_i$ saw him$_j$ in the mirror', respectively.

[8] The expressions of body parts in Tsou (*feango* 'body'), Saisiyat (*basing* 'body'), Amis (*tiring* 'body'), Rukai (*kinaomasane* 'body') do not undergo such a development of semantic change as in Kavalan.

I-arrange-TR I   head

'I am combing myself.'

(9) Malagasy

a.   Nilaza Rasoa$_i$ [$_{CP}$ fa hamono tena$_{*i/j}$ Rabe$_j$.]   (Paul 2004: 38)

       past.at.say Rasoa that fut.at.kill self Rabe

       'Rasoa said that Rabe is going to kill himself.'

b.   Hajain'i Soa$_i$ ny tenany$_i$.   (Paul 2004: 43)

       TT.respect.GEN.Soa DET self.3(GEN)

       'Soa respects herself.' or 'Her body is respected by Soa.'

3. Verbal Reflexives/Reciprocals

Now let us examine verbal reflexives and reciprocals.   While majority of the researches in the literature are aimed on the nominal reflexives and reciprocals, less attention has been paid to the languages that mark reflexivity/reciprocity directly or indirectly on the verb, but not on one of its arguments.   It is well known that in many languages reciprocals often develop from reflexives, and thus reciprocals and reflexives are usually encoded by the same marker.   Imbabura Quechua is one such language.   The similarity between the two uses is the fact that in both cases each participant is both an initiator and an endpoint (Kemmer 1993).   Such kind of development, however, is not attested in Formosan languages since verbal reflexives and verbal reciprocals are distinct and unrelated either morphologically or syntactically.

In the following discussion, two center issues will be addressed: one is the polyfunctions of verbal reflexives/reciprocals and the other concerns the transitivity of these verbal anaphoric expressions.

3.1. Polysemy of Verbal Reflexive Markers

While nominal reflexives are usually monosemantic, mainly expressing semantic reflexivity alone, or they have a very narrow range of functions, the verbal reflexives are usually polyfunctional.   This is also an important cross-linguistic tendency observed in Geniušienė (1987) by examining over 50 Indo-European and non-Indo-European languages.   From a typological point of view, verbal reflexives are attested to develop typically from nominal reflexives.   As suggested in the literature, a formal nominal element gradually loses its original properties over time and gravitates more and more to the verb.   Thus in addition to their referential use,

verbal reflexives are often used as markers of reciprocity, as markers of derived intransitivity, as aspectual markers (middle voice), etc. in a wide variety of languages.

Though verbal reflexives in the Formosan languages investigated here do not exhibit as many semantic extensions as discussed in the literature, they do serve more than one function, just like those in other languages of the world.   For instance, in Tsou, Rukai and Paiwan, one salient and core function of verbal reflexives is of course to mark coreferentiality of two participants in an event frame, either the Agent with the Patient (Recipient or Benificiary) or the Experiencer with Theme, the same distribution as reflexive nouns/pronouns have as discussed in section 2.   Examples are illustrated in (10).   The only difference between a verbal use and a nominal one is that in verbal constructions there involves only a single participant, which takes over the two roles of agent (or experiencer) and patient (or theme).   This is analyzed to be a reduction process of an internal argument (Chierchia 1989; Grimshaw 1982; Reinhart and Siloni 2002).   In (10b) and (10c), notes are placed there about Saisiyat and Kavalan.   In Saisiyat the use of the verbal reflexive marker does not result in a reflexive interpretation; only a nominal form can yield a reflexive reading.   And in Kavalan there is no verbal form of reflexives.

(10) As a Reflexive

a.   Tsou[9]

   moso   o'te   asonu…   (moso)   **iachi**   pono
   AF   probably   (AF)   AF.self   shoot.with.gun/arrow
   'He probably shot himself with gun.'   (NTU corpus, Daily: 110)

b.   Saisiyat
   NONE (There exist verbal forms in Saisiyat, but they do not involve reflexive interpretations.)

c.   Kavalan
   NONE (There is no verbal form of reflexives in Kavalan.)

d.   Rukai

  (i) **ngi**-a-pa-pa-pacay   ka takanaw

     Refl-Realis-Cau-Red-kill Nom Takanaw

     'Takanaw killed himself.'   (Zeitoun 2000: 59)

  (ii) kai saLabo   **ngi**-a-sa-syukai   ki   takanaw
     Nom saLabo   Refl-Realis-Red-introduce   Obl   takanaw
     'SaLabo introduced himself to Takanaw.'

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[9] *invonvo,* a form less used in Tsou also expresses the meaning of "self". Similar to *iachi*, *invonvo* is used as an adverbial to modify verbs. There are, however, subtle differences between *invonvo* and *iachi*. When *invonvo* is used, it indicates that someone is doing the action toward himself. In addition, sentences with *invonv*o could be interpreted as people do the action with strong will power. People choose to do the action not because others force them to do, but because they themselves want to do that. The agent has the will power to control over the action. When *iachi* is used, unlike *invonvo*, it does not contain the meaning that the agent does the action on his will; there is no will power involving in doing the action.   In addition, *invonvo* is used only to mark reflexivity; it doesn't involve any other interpretations such as anitcausative or decomitative.

e. Paiwan
  (i) **ki**-vuci' timad(j)u
    Refl-cut 3Sg.Nom
    'He (she) cut himself (herself).'
  (ii) **ki**-pacay timadju
    Refl-kill 3Sg.Nom
    'He (she) killed himself (herself).

In addition to expressing reflexivity in (10), two other commonly interpretations that verbal markers denote are anticausative and decomitative interpretations as shown in (11)-(12).[10]

(11) As an Anticausative
a. Tsou
   (i) micu **iachi** amUtU ta phingi
   Aux.AF AF.self close Nom door
   'The door closed by itself.'
   (ii) a'a isi ahta cohivi to inosiconi ho mo peiskuzkuzo na o'oko.
       ever know aunt do bad things Obl child
     ko'ko eno maica **iachi** aha'o eunzou na eUteU ho isi topci no puzu to o'oko.
     therefore like.this AF.self suddenly catch fire Nom cloth light fire child
     'The aunt does not know the child does some bad things. The child lights fire, therefore, the cloth itself suddenly catches fire." (Szakos 1994: P123, 25-26)
b. Saisiyat
   h<om>awaeh **nonak** ila ka tesnenan
   open.AF self ila Nom door
   'The door opened by itself.'
c. Rukai
   ngi-a-ka-ka-cuake kai kisi
   Refl-realis-Red-state-break Nom bowl
   'The bowl broke by itself (due to overheating).'
d. Paiwan
   ki-su'elv azua paling
   Refl-open that door
   'The door opened by itself.'
(12) As a Decomitative
a. Tsou
   mi-'o iachi pasunaeno
   Aux-1Sg AF.self sing
   'I sang alone (without someone else around).'
b. Saisiyat

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[10] We will leave out the discussion of the emphatic interpretation in this paper since the data vary greatly across Formosan languages.

(i)   So'o   am   **nonak**   ila.

2Sg.Nom AM   self   Pfv

'You are going to be by yourself (being independent).'

(ii) yako   'okay   pa-**ki'nonak-i**   ray taw'an

1Sg.Nom   Neg   Cau-self-PF   Loc house

I was not left home alone.'

c. Rukai

ngi-a-e-elebe   ku   LawLawDu   kai   takanaw

Refl-realis-close   Acc   door   Nom   Takanaw

'Takanaw closed the door by himself (without somebody else's help).'

d.   Paiwan

ki-madu   ti Muni   a   semenay

Refl-person Nom Muni Lnk   sing

'Muni sang alone.'

Among these two, decomitative is the most salient extended use of the reflexive markers across Formosan languages.   In decomitative (12), it asserts that the agentive subject is the focus (related to the focus-sensitive expressions like *alone*) and the relevant alternative comitative arguments are excluded.   In the anticaustive cases in (11), events are not attributed to any external agency, resulting in a loss of the agentivity meaning typical of reflexives.

In a related Austronesian language, Riau Indonesian, Gil (2001) points out that the reflexive *sendiri* exhibits a wide range of interpretations as listed in Table 2. From a typological point of view, there is no complete agreement as to how many of those extended uses of reflexives are to be distinguished (cf. Moravcsik 1972; Geniušienė 1987; Kemmer 1993; Cennamo 1993; König 1991).   It all depends on how a specific language in question involves a progression of semantic change from reflexive to non-reflexive ones.   In our examination of Formosan languages, none of the verbal reflexives exhibit any middle functions (deagentive, depatientive, or spontaneous etc.) as shown in some Oceanic languages discussed in Bril (2005) and Lichtenberk (2000).   Clearly, reflexives in Formosan languages do not take the same processes of middle (passive) markers developing from reflexive markers as suggested in Kemmer (1993), who bases on a study of two Indo-European families, Romance and Germanic, and one non-Indo-European family, Nilo-Saharan. (cf. Figure 1)

Table 2. Meanings of reflexive forms across languages (adapted from Gil (2001: 96))

	reflexive 'himself'	reciprocal 'each other'	deagentive 'without cause'	dealiative 'only'	superlative 'most', '-est'	decomitative 'alone	intensive 'oneself','even'
Riau Indonesian: *sendiri*	✓	✓	✓	✓	✓	✓	✓
English: *-self*	✓	--	✓	--	--	✓	✓
French: *se*	✓	✓	✓	--	--	--	--
Bulgarian: *sam-*	✓	--	✓	✓	--	✓	✓
Russian: *sam-*	✓	--	✓	--	✓	✓	✓
Lezgian: *wič/čeb*	✓	✓	✓	--	--	--	✓
Hebrew: *hit-a-e*	✓	✓	✓	--	--	--	--
Mandarin: *ziji*	✓	--	✓	--	--	✓	✓

Figure 1: Reflexive to middle marker and associated developments (Kemmer 1993: 197)
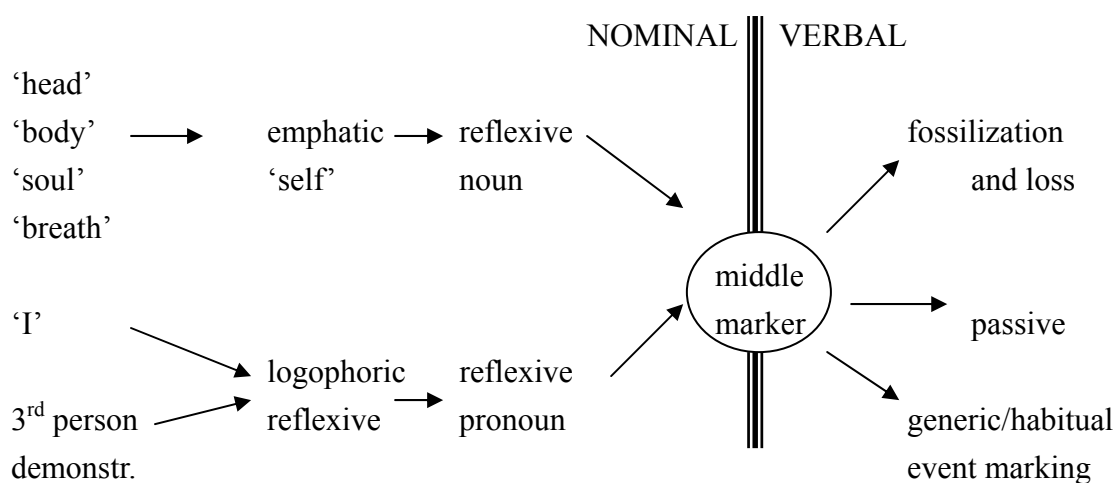
3.2. Polysemy of Verbal Reciprocal Markers[11]

Similar to verbal reflexives, verbal reciprocals are found to serve more than one function. Lichtenberk (1985, 2000) examines reciprocals in a number of Oceanic languages and concludes that the same morphology is found to encode different situations, which include reciprocals, reflexives, chained actions, collectives, distributives, repetitives, depatientives, and others.

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[11] See Sung and Shen (2006) for a detailed and comparative study of reciprocal prefixes in Formosan languages. Also see Zeitoun (2002) for a list of reciprocal data in Formosan languages.

In his study of Madurese reciprocals, Davies (2000) also points out that the reciprocal and distributive events are encoded by the same marker *saleng*. For instance,

(13) Madurese (Davies 2000)

a. Ali biq Hasan saleng tambuk bato

A and H throw stone

'Ali and Hasan threw the stones at each other.'

b. Bambang biq Ita saleng ngakan

B and I AV.eat

'Bambang and Ita both ate.'

Building on works by Lichtenberk (1985, 2000), we show that the reciprocal markers in the six Formosan languages examined here pattern with Oceanic languages in that they are polyfunctional: they expresses four related meanings, which include reciprocal, chaining, collective and distributive. Syntactically and semantically, the similarity among them is that these meanings all require a plural subject. Let us examine each of these in turn.

The main function of the reciprocal marker in Formosan languages is to mark a reciprocal situation. Examples are given in (14a-f). The typical reciprocal situation, such as *Buya and Utay hit each other* in Kavalan (14a), is one in which a participant of a group directs an act towards another participant of the group, and at the same time receives the same act from another participant of the group.

(14) As a Reciprocal

a. Kavalan[12]

sim-pukun ci buya ci abas

Rec-hit Ncm Buya Ncm Abas

'Buya and Abas hit each other.'

b. Tsou

mo asngUcU yupa-mtokU to tposU 'e pasuya ho mo'o[13]

Aux often Rec-throw.AF Obl book Nom Pasuya and Mo'o

'Pasuya and Mo'o often throw books at each other.'

c. Saisiyat

Obay ki kizaw ki ya:o **makak**-tikot (ta-tikot/sasobae:oeh tikot)

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[12] In this paper we put aside two other types of verbal reciprocals in Kavalan. For a discussion of these two other types of verbal reciprocal prefixes, please see Shen (2005).

[13] Here the verb *mtokU* 'throw' is not a root stem and it carries the agent focus morphology in the reciprocal construction with *yupa-*. This is quite different from the case in Kavalan, in which the agent focus morpheme does not co-occur the reciprocal marker *sim-*, as discussed in section 2.

Obay   with Kizaw   with 1S.Nom makak-fear (Red-fear/do.sth.to.each.other fear)

'Obay and Kizaw and I are afraid of each other.'

d. Amis

(i) **mala**-metmet cangra tu kamay   (Wu 2000:51)

Rec-shake   3Pl.Nom Acc hand

'They shook hands.'

(ii) **mala**-palu   cangra   a   ta-tusa

Rec-hit   3Pl.Nom Lnk CLF-two

'They two hit each other.'

e. Rukai

kai zipulu   si muni   **ma**-La-Lumay

Nom Zipulu   and Muni   Rec-Red-hit

'Zipulu and Muni hit each other.'

f. Paiwan

ma-ta-tengelay tiamadu

Rec-Red-like 3Pl.Nom

'They like each other.'

Chainings are a variation of reciprocal relations.   In some reciprocal situations, the relation of the participants could be in the form of a chain, as in Figure 2.

Figure 2. A chaining situation (Lichtenberk 2000)

A → B → C → D → E   (open chain)

(closed chain)
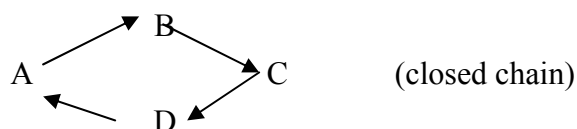
In Formosan languages, the situations expressed by the reciprocal markers also include chaining cases, which are relatively common.   These are illustrated in examples (15).[14]

(15) As a Chaining

a. Tsou

(i) mo **yupa**-to'ofehini   si   o'-oko

Aux Rec-AF.follow   Nom   Red-child

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[14] The distribution observed here accords with the fact that pairing of the reciprocal and the chaining functions is widespread cross-lingusitically (Lichtenberk 2000).

'The children followed each other.'

   (ii) mo   **yupa**-pUyo   si   o'-oko

        Aux Rec-form.a.line   Nom   Red-child

        'The children formed a line.'

b. Saisiyat

    lasia   **sa**-sasowaw

    3Pl.Nom Ca-chase

    'They chased after one another.''They are chasing after one another.'

b. Kavalan

    sim-ta-tanuz   sunis   'nay[15]

    Rec-Red-chase   child   that

    'Those children chased after each other.'

c. Amis

    mala-la'o-la'op   cangra

    Rec-Red-chase   3Pl.Nom

    'They (a group of people) were chasing after each other.'

d. Paiwan

    ma-la-laing   tiamadu

    Rec-Red-chase   3Pl.Nom

    "They chased after each other.'

Another two situations in which the participants contribute themselves in a different relation are the so-called collective and distributive. While reciprocal and chaining are core functions of reciprocal markers in Formosan languages, collective and distributive seem to be relatively peripheral. Languages exhibit differently in permitting the extended uses of reciprocal affixes as a collective and a distributive. Consider the following examples:

(16) As a Collective

a. Tsou

    NONE (A separate lexical word *teohunga* 'together' has to be used to express collectivity.)

b. Saisiyat

    (i)   o: kik   pahraehrang **makak**-sikar

         INT NEG   AF.speak   Rec-AF.shy

         'They didn't speak anything and (both) felt shy.' (NTU Corpus, kathethel2: 131)

    (ii) lasia   **ra**-raiw (*makak-raiw)

         3Pl.Nom   makak-leave

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[15] The reduplication of the verb here implies that this event happens more than once or that this is a habitual event. Reduplication alone does not express reciprocity in Kavalan.

'They all left.'

c. Kavalan

sim-kirim aymi tu wasu
Rec-look.for 1Pl.Excl.Nom Obl dog
'We looked for the dog (together).'

d. Amis

mala-ka-kilim tu wacu cangra
Rec-Red-look.for Obl dog 3Pl.Nom
'They (together) looked for their dog.'

e. Paiwan[16]

ma-va-vaik tiamadu
Rec-Red-leave 3Pl.Nom
'They left (in sucession).'[17]

(17) As a Distributive

a. Tsou

NONE (A separate lexical word *iyanan'ou* 'each' has to be used to express distributivity.[18])

b. Saisiyat

NONE (A separate lexical phrase *'iska nonak* 'each' has to be used to express distributivity)

c. Kavalan[19]

sim-kirim aymi tu wasu
Rec-look.for 1Pl.Excl.Nom Obl dog
'We each looked for our own dog.'

c. Amis[20]

mala-likel cangra a ta-tusa pafuli' takuwanan
Rec-sharing 3Pl.Nom Lnk CLF-two give.AF 1Sg.Obl

tu cecay a cutad
Obl one Lnk book

'They (each of them) gave me a book.'

---

[16] There is another lexical item *meselang* 'together' in Paiwan which can express collectivity.

[17] An activity done in succession is also considered as a collective reading in Lichenberk (2000: 37).

[18] The following is an example:

(i) iyanan'ou mofi to tposU ta paicU 'e mo'o ho pasuya
    each.AF give.AF Obl book Obl PaicU Nom Mo'o and Pasuya
    'Mo'o and Pasuya each gave PaicU a book.'

[19] There is another lexical item *tatutunguz* 'each' in Kavalan which can express distributivity. For example,

    (i) tatutunguz ci utay atu ci abas m-anan
    each Ncm Utay and Ncm Abas AF-return.home
    'Utay and Abas each returns home.'
    (ii) tatutunguz wasu 'nay Raytunguz
    each dog that bark.AF
    'Each of those dogs is barking.'

[20] There is another lexical item *paytemek* 'each' in Amis which can express distributivity.

d. Rukai

NONE (A separate lexical word *tara* 'all, each' has to be used to express distributivity)

e. Paiwan

ma-pa-pavai   tiamadu   tai muakakai   tua sunat
Rec-Red-give/send 3Pl.Nom Obl Muakakai   Obl book
'They each gave Muakakai a book.'

As the cross-Formosan data above show, reciprocal affixes invariably exhibit various possible interpretations in addition to the reciprocal one.   While reciprocals are polysemous, different options are available and languages in question might choose among these.   For instance, reciprocals in Kavalan and Amis express all these four: reciprocal, chaining, collective and distributive.   The reciprocal marker in Saisiyat can denote only reciprocal, chaining, collective, but not distributive while in Tsou it denotes only reciprocal and chaining, but not collective and distributive.   A separate lexical word/phrase such as *'iska nonak* 'each' (in Saisiyat), *iyanan'ou* 'each' (in Tsou), or *teohunga* 'together' (in Tsou) has to be used to express a collective or a distributive meaning.

In the discussion above, no matter which interpretation the reciprocal marker denotes including chaining, collective and distributive, they all share an important property: they all involve plurality of participants.   This property is manifested by the plural-subject requirement of reciprocal constructions, which we argue to be a necessary licensing of these resulting constructions.   Take Kavalan as an example. It can be seen that the ungrammaticality of (a) in (18)-(20) suggests that *sim*-marked verbs require plural subjects.

(18) a.   *sim-liatip   ya   ci   abas
              Rec-take.careNom   Ncm   Abas
      b.   sim-liatip   ya   ci   abas   atu sunis-na
              Rec-take.care Nom   Ncm   Abas   and child-3.Gen
              'Abas and her child take care of each other.'
(19) a.   *sim-pukun   ya ci   buya
              Rec-hit   Nom Ncm   Buya
              'Buya hit each other.'
      b.   sim-pukun ya   ci   buya   atu ci   utay
              Rec-hit   Nom Ncm   Buya and Ncm   Utay
              Buya and Utay hit each other.'
(20) a.   *sim-ta-tanuz   ya   ci   utay

Rec-Red-chase Nom Ncm   Utay

'Utay chased each other.'

b.   sim-ta-tanuz   ya   sunis 'nay

Rec-Red-chase Nom child that

'Those children chased each other.'

4. Transitivity and Verbal Reflexives/Reciprocals

As discussed in the previous sections, both verbal reflexives and reciprocals, compared to their nominal counterparts, tend to acquire a number of other functions other than marking reflexivity and reciprocity.   These verbal uses, whether reflexive, non-reflexive, reciprocal, or non-reciprocal, all exhibit reduced transitivity, with the clause containing verbs that could be ditransitive, monotransitive or intransitive. This differs from many previous studies (e.g., Gerdts 2000, McGregor 2000, Mchombo 1993) which often conclude that the derived reflexive/reciprocal constructions are intrincally intransitive.

For reciprocal markers, *sim-* in Kavalan for example, changes a transitive verb like *pukun* 'hit' into an intransitive one, as in (14a), and a ditransitive verb like *bura* 'give' into a transitive one, as in (21a).   Since NAF in Kavalan is transitive, a reciprocal verb such as *sim-bura* in (21b) co-occuring with NAF morpheme *–an* indicates that it is indeed a transitive construction.

(14) (repeated)

a.   Kavalan

sim-pukun   ci   buya   ci   abas

Rec-hit   Ncm   Buya   Ncm   Abas

'Buya and Abas hit each other.'

(21) a.   **sim**-bura tu Raq   ya   ci   utay   atu   ci   buya

Rec-give Obl liquor   Nom Ncm   Utay   and   Ncm   Buya

'Utay and Buya gave each other liquor.'

b.   **sim**-bura-an-na   ni utay atu   ci   buya   ya   Raq

Rec-give-PF-3.Gen   Gen Utay and   NcmBuya   Nom   liquor

'Utay and Buya gave each other liquor.'

Reciprocal affixes in other Formosan languages also co-occur with the NAF morphology as shown in (22)-(24).

(22) Tsou

yupa-tokU-neni   ta pasuya   ho mo'o   'e tposU

Rec-throw-BF Obl Pasuya and Mo'o Nom book

'Pasuya and Mo'o threw books at each other.'

(23) Saisiyat

 ka rayhil **sa**-sibae:aeh-en   niya'om

 Nom money Red-borrow-PF   1Pl.Excl.Gen

 'We borrowed money from each other.'

(24) Amis

 mala-sa-pa-puliti-en nangra ku cudad

 Rec-SA-Red-throw-PF 3Pl.Gen Nom book

 'They threw the books at each other.'

The number of arguments in examples (22)-(24) is reduced from three to two once the reciprocal affix is attached. We conclude that reciprocal morphemes in Formosan languages are not necessary intransitivizers; they simply reduce the number of arguments subcategorized by its attaching verbs.[21]

For reflexive markers, the question arises with reduced transitivity is which of the argumens in a clause is reduced: it could be the internal argument in reflexive (10), or the agent argument in anticausative (11), or the comitative argument in (12). Whether the reflexive markers can co-occur with NAF morphemes, we are still lack of relevant data to reach a conclusion. We will leave this for future study.

5. Conclusion

To conclude, two strategies for the expression of reflexivity and reciprocity have been examined in this paper. While nominal reflesives/reciprocals are usually monosemantic, mainly expressing semantic reflexivity/reciprocity alone, verbal reflexives/reciprocals are usually polyfunctional and thus polysemous.

The verbal ones are used to mark a wide range of distinct but related functions which constitute a continuum within valence reduction. When a reflexive/reciprocal marker appears in a language, its functions develop along a specific path giving that the initial function is that of marking semantic reflexivity/reciprocity. Then, the use may be extended to combine with a broader lexical range of verbs to acquire other functions. In the case of verbal reflexives, the extended meanings in Formosan languages center on reflexive, decomitative and anticausative. For verbal reciprocals, the extensions are confined within the semantic domain of reciprocal, chaining,

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[21] The data concerning reduced transitivity presented in this section contradict with the claim made in Brill (2005) that the reciprocal prefixes in Malayo-Polynesian languages are "intransitive actor focus morphemes".

collective and distributive.   None of their (reflexives and reciprocals) forms and semantic functions overlaps with each other.   Obviously, reflexives and reciprocals in Formosan languages take two divergent paths of developments, very unlike the one suggested in Geniušienė (1987) and Kemmer (1993) in a wide variety of languages. In addition, neither of verbal reflexives or reciprocals in Formosan languages exhibit any middle functions (deagentive, depatientive, or spontaneous etc.) as discussed in Bril (2005) and Lichtenberk (2000).

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