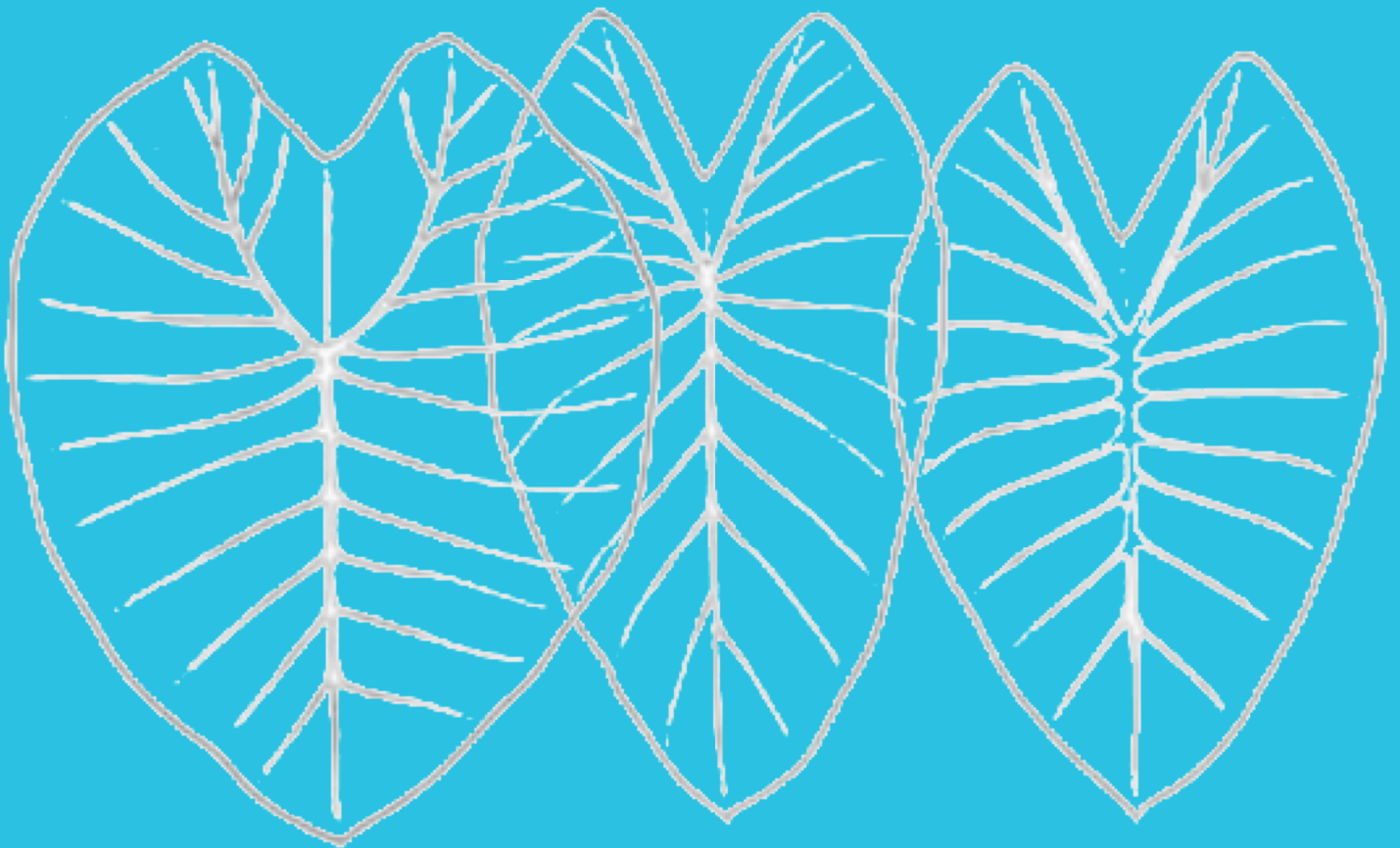


Proceedings of TripleA 5

Fieldwork Perspectives on the
Semantics of African, Asian and Austronesian Languages



Ed. by M. Ryan Bochnak, Miriam Butt,
Erlinde Meertens & Mark-Matthias Zymla

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Iterative-Reciprocal Polysemy in Logoori¹

John Gluckman — University of Kansas

Abstract. The affix *-an* in Logoori (Luhya, Bantu) is used to mark iterated events and reciprocal situations. I illustrate that this dual use reflects a single meaning: *-an* is an event-pluralizer which cumulatively pluralizes semantically monovalent events, a category which includes reciprocal events. The analysis predicts *-an*'s morpho-syntactic and semantic distribution. An outcome of the analysis is that reciprocity is *emergent* in Logoori, i.e., it is a result of putting together independently needed semantic processes (Heim et al., 1991). Finally, I discuss cross-linguistic variation in reciprocal “polysemy,” focusing in particular on cognate *-an*'s across Narrow Bantu languages.

1 Introduction

Cross-linguistically, markers of reciprocity are known to display a high degree of polysemy: the same marker used for reciprocal situations may also serve some other function(s) in the language (Lichtenberk, 1985; Frajzyngier and Curl, 1999; König and Gast, 2008; Nedjalkov, 2007). Here, I address one such case in Logoori (Luhya, Bantu, JE41), where the verbal extension *-an* can be used to indicate a *reciprocal situation* as in (1a) as well as an *iterated event* at in (1b).²

- | | | | | |
|-----|----|--------------------------------|----|-----------------------------|
| (1) | a. | <i>avaana va-lol-an-i</i> | b. | <i>Sira y-ashiamul-an-i</i> |
| | | 2child 2SM-see-AN-FV | | 1Sira 1SM-sneeze-AN-FV |
| | | ‘The children saw each other.’ | | ‘Sira sneezed repeatedly.’ |

Along with *reciprocal-reflexive* and *reciprocal-sociative* polysemies, Nedjalkov (2007) lists the *reciprocal-iterative* polysemy as one of the three most robustly attested patterns found in reciprocal constructions cross-linguistically. (See also discussions of cross-linguistic patterns in Frajzyngier and Curl 1999; König and Gast 2008). This suggests that the pattern in Logoori is not an accident of the language, rather it reflects a deeper connection between reciprocity and event plurality.

I propose below an analysis of *-an* that semantically, syntactically, and morphologically unifies its use and distribution: *-an* always expresses a cumulative plural event for single-participant (i.e., intransitive) events. While this meaning is transparently observed in (1b), it is a sub-component of the meaning found in (1a). The analysis fully explains not only *-an*'s meaning contribution, but also its morphological and syntactic distribution.

¹Immense thanks to my Logoori teachers Mwabeni Lavusa Indire, Bernard Lavussa, and Walter Kigali. Thanks also to Pam Munro, Yael Sharvit, Dave Odden, Mike Diercks, Margit Bowler, and audiences at UCLA's American Indian Seminar, the University of Kansas, and ACAL 49 at MSU, and naturally the feedback from attendees of TripleA 5 in Konstanz. All errors are my own.

² Luhya (also Luyia) languages are spoken in Western Kenya and Uganda. Logoori is also known as Logoli, Maragoli, Luragooli, Llogoori.

AC : Anticausative	FV : Final Vowel	PAST : Past
APPL : Applicative	PRES : Present	REFL : Reflexive
CAUS : Causative	PASS : Passive	SM : Subject Marker

This paper makes two broader points. First, reciprocity in Logoori is *compositional*. Reciprocal meaning arises as a result of combining independently motivated syntactico-semantic processes, as argued for English in Heim et al. (1991). Second, reciprocal “polysemies” arise when languages grammaticalize — or recruit morphology for — subcomponents of the complex semantics of reciprocity. In these cases, other processes “pick up the slack” for filling in the rest of reciprocal meaning.

2 Iterative use

Attached to some verbs, *-an* can be used to indicate an iterative, or sometimes intensive event Table 1.³ (See Maslova 2007; Nurse and Philippson 2003 for similar uses in other Bantu languages).

<i>kumera</i>	‘to grow’ (intr)	<i>kumerana</i>	‘to grow fast, a lot’
<i>kumeeda</i>	‘to increase’ (intr)	<i>kumeedana</i>	‘to increase steadily.’
<i>kusunduka</i>	‘to spill’ (intr)	<i>kusundukana</i>	‘to spill here and there’
<i>kwuma</i>	‘to freeze’ (intr)	<i>kwumana</i>	‘to freeze over and over’
<i>kwishiamula</i>	‘to sneeze’	<i>kwishiamulana</i>	‘to sneeze over and over.’
<i>kwivora</i>	‘to give birth’	<i>kwivorana</i>	‘to breed, increase in #'s’
<i>kuhanzuka</i>	‘to shout’	<i>kuhanzukana</i>	‘to shout over and over’
<i>kunagora</i>	‘to run’	<i>kunagorana</i>	‘to run over and over, keep running’
...		...	

Table 1: Iterative/intensive uses of *-an*. (*Ku-* is the class 15 infinitival prefix.)

In its iterative use, *-an* expresses two pieces of meaning.

1. The event of the predicate involves a *single participant*. This functionally restricts *-an* to appearing with intransitive predicates.
2. The event of the predicate is a *cumulative plural event*.

I illustrate these two properties in the next sections.

2.1 Property 1: Cumulative plurality

I assume that an event of P is cumulatively plural if it is perceived as being a single event of P with multiple sub-events of P (Krifka, 1989; Sternefeld, 1998). Thus, *-an* is only felicitous where there is a perceived single event involving multiple sub-events, as shown in the following contexts.

- | | |
|---------------------------------|---|
| (2) <i>Sira y-ashiamul-an-i</i> | (a) ✓ <i>Sira had a fit of sneezing.</i> |
| Sira 1SM-sneeze-AN-FV | |
| ‘Sira sneezed repeatedly.’ | (b) ✗ <i>Over the course of the day, Sira sneezed multiple times.</i> |

³I assume that the intensive reading is a type of iterative event.

- (3) *kisaga ki-vun-ik-an-i*
 7branch 7SM-break-AC-AN-FV
 ‘The branch broke in many pieces.’
- (a) ✓ *Sira stepped on a branch, and it broke in many pieces.*
- (b) ✗ *Over the course of the day, many people stepped on a branch, breaking it in many pieces.*

It’s worth noting that *-an* does not impose any sort of structure on the sub-events. They can be consecutive, as in (2), or they can be simultaneous, as in (3). All that matters is that the sub-events are perceived as being a part of some larger macro-event.

2.2 Property 2: Single-participant events

Though *-an* pluralizes events, it cannot be used with all event-predicates. For instance, it is not permitted with transitive verbs.

- (4) a. **Sira a-ras-an-i mpira*
 1Sira 1SM-throw-AN-FV 3ball
 [intended: ‘Sira threw the ball repeatedly’]
- b. **Sira a-duy-an-i Imali*
 1Sira 1SM-hit-AN-FV 1Imali
 [intended: ‘Sira hit Imali repeatedly.’]

As can be observed in Table 1, *-an*’s occurrence is restricted to intransitives. However, crucially, *-an* is restricted to a particular kind of intransitive, namely, *semantic intransitives*. I take this term to mean an event which only has a single participant. This differs from *syntactic intransitivity*, which may not involve a single-participant event.

The distinction can be seen in *-an*’s restriction to co-occurring with only one kind of derived intransitive. In Logoori, there are two ways to derive an intransitive verb from a transitive verb: *passivization* and *anticausativization* (Gluckman and Bowler, 2016).⁴

- (5) a. *mpira gu-ras-w-i (na Sira)* PASSIVE
 3ball 3SM-throw-PASS-FV by Sira
 ‘The ball was thrown (by Sira)’
- b. *mpira gu-ras-ik-i (*na Sira)* ANTICAUSATIVE
 3ball 3SM-throw-AC-FV by Sira
 ‘The ball was thrown (by Sira).’ (≈ ‘The ball threw.’)

One canonical difference between passives and anticausatives is whether reference to the demoted Agent is permitted. Passives permit explicit reference to the implicit Agent in a *by/na*-phrase (5a). Thus, passives are taken to be syntactically intransitive, but semantically transitive, in that the event of the predicate still involves two participants. Anticausatives on the other hand do not permit

⁴The verbal extension *-Vk* has a number of differ labels and uses across Bantu (Nurse and Philippson, 2003). I refer the reader to Gluckman and Bowler (2016) for evidence that its function in Logoori is that of an anticausative marker — though the argument goes through whether this is true or not.

(implicit or explicit) reference to the Agent (5b). This is because anticausatives involve semantic intransitivity: the overall valency has been decreased by one (cf, Kemmer 1993; Haspelmath 1993; Schäfer 2008 among many others).

Returning to *-an*, we observe that it can only pluralize derived anticausatives, and not passives.⁵

- (6) a. * *mpira gu-ras-w-an-i* (na Sira)
 3ball 3SM-throw-PASS-AN-FV by Sira
- b. *mpira gu-ras-ik-an-i* (*na Sira)
 3ball 3SM-throw-AC-AN-FV by Sira
 ‘The ball was thrown repeatedly.’
 (i.e., it was juggled)
- (7) a. * *amaaze ga-sund-w-an-i*
 6water 6SM-spill-PASS-AN-FV
- b. *amaaze ga-sund-uk-an-i*
 6water 6SM-spill-AC-AN-FV
 ‘The water spilled here and there.’
 [Speaker comment: ‘Like when the waiter brought it to the table. It was sloshing around.’]

This follows if *-an* is sensitive to the number of semantic arguments that are associated with the predicate. Observe in fact that there is a distinct transitive (cumulative) event pluralizer *-any* (<-ap>). *-Any* may only occur with transitive predicates, and is restricted to passive derived intransitives.

- (8) a. * *Sira y-ashiamul-any-i*
 1Sira 1SM-sneeze-ANY-FV
 [intended: ‘Sira sneezed repeatedly.’]
- b. *Sira a-ras-any-i mpira*
 1Sira 1SM-threw-ANY-FV ball
 ‘Sira threw the ball repeatedly’ (i.e., he juggled the ball).
- c. *mpira gu-ras-any-w-i*
 3ball 3SM-throw-ANY-PASS-FV
 ‘The ball was thrown repeatedly’ (i.e., it was juggled).⁶
- d. * *mpira gu-ras-ik-any-i*
 3ball 3SM-throw-AC-ANY-FV

⁵There is no phonological reason to rule out (6a), (7a). Also, no other ordering of the suffixes works.

⁶Note the different ordering of the pluralizer and voice morphology: *-any* must precede the passive, but *-an* must follow the anticausative. I believe this reflects the different function of anticausative vs. passive heads, rather than a (morpho-)syntactic difference between the two different event pluralizers. See Gluckman (to appear) for more discussion. Thanks to Claire Halpert for useful comments on this topic.

2.3 Defining iterative *-an*

Given that *-an* expresses both plurality and intransitivity, I define *-an* as a cumulative event pluralizer, with a presupposition such that the event it pluralizes only has a single participant. \leq is ordering on events.⁷

(9) $\llbracket -an \rrbracket = \lambda P_{\langle v, st \rangle} \lambda e \lambda w:$

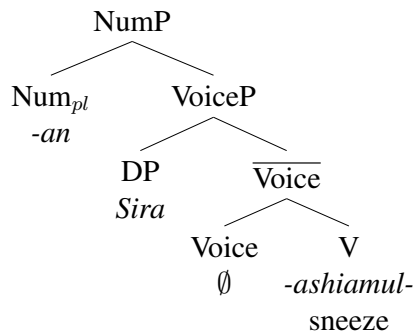
Presupposition: *e* has a single event participant

Assertion: $\exists e_1, e_2 [P(e)(w) \ \& \ P(e_1)(w) \ \& \ P(e_2)(w) \ \& \ e_1 \neq e_2 \ \& \ e_1, e_2 \leq e] \ \& \ \forall e', e'' [P(e')(w) \ \& \ P(e'')(w) \ \rightarrow \ P(e' \oplus e'')(w)]$

I assume that the single event participant restriction can be satisfied by a plural individual (cf Link 1983; Schwarzschild 1996 among others).

I propose that *-an* is an instantiation of verbal number in a Number Phrase (NumP). Syntactically, NumP sits on top of the verbal domain, including the external argument assumed to be in VoiceP (Kratzer, 1996).

(10)



I assume that Bantu verbs are morphologically constructed via head movement reflecting the Mirror Principle (Baker, 1985). As the verb (V) moves up the tree to its surface position (likely in C), it collects heads on its way. The result is that heads which are lower in the structure will appear closer to the root.

The meaning and tree in (9) and (10) make two predictions about the use and morpho-syntactic location of *-an*. First, we predict that subjects should be able to scope under the pluralizer. This prediction is borne out. In the following, the subject is distributed among events of sneezing. Each event involves a single (different) participant.

(11) *In a meeting, everyone sneezed once all at the same time.*

avaana va-shiamul-an-i
 2person 2SM-sneeze-AN-FV
 ‘People sneezed.’

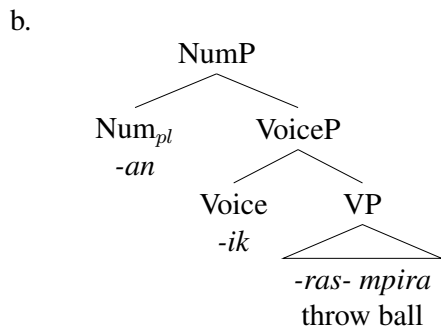
The second prediction concerns where *-an* appears with respect to valency increasing and decreasing morphology. *-An* should always appear *outside* of valency decreasing morphology (i.e.,

⁷The definition of cumulativity (minus the presupposition) is adapted from Krifka (1989).

the anticausative marker *-Vk*). That is, *-an* may only appear after a single-participant-event verb phrase has been derived.

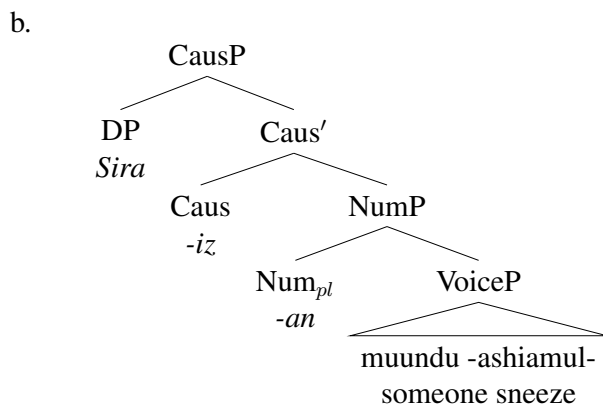
Again, this prediction is borne out. As we saw earlier, when the anticausative and *-an* co-occur, the anticausative must precede *-an*, which reflects the fact that *-Vk* sits lower in the structure.

- (12) a. *mpira gu-ras-ik-an-i*
 3ball 3SM-throw-AC-AN-FV
 ‘The ball was thrown repeatedly.’



On the other hand, *-an* should always appear *inside* of valency increasing morphology. For instance, when a causative affix *-iz* is added, the valency is increased by one. In this case, we predict that *-an* should only be able to appear inside of *-iz*, since it must pluralize the event before another event-participant is added.⁸

- (13) a. *Sira y-ashiamul-an-iz-i muundu* CAUSATIVE
 Sira 1SM-sneeze-AN-CAUS-FV person
 ‘Sira made someone sneeze repeatedly.’ (**yashiamul-iz-an-i*)



Likewise, when an applied argument is added to the event structure, because this process creates a two-participant event, *-an* must pluralize the event before the argument can be added, predicting that *-an* should appear before the applicative *-el/-il*.

⁸Note that, despite the translation on (13), it is not clear whether *-iz* in fact adds another *event*, in addition to adding another argument. A more accurate translation might be “Sira sneezed someone.”

- (14) *Sira y-ashiamul-an-il-i muundu* APPLICATIVE
 1Sira 1SM-sneeze-AN-APPL-FV person
 ‘Sira sneezed repeatedly for someone.’ (**yashiamul-il-an-i*)

Moreover, we have evidence from scope that the added arguments are above the pluralizer. With applied arguments, the added argument cannot scope under the pluralizer. This is evident using the indefinite *muundu*, ‘someone.’ The example in (14) is not felicitous if Sira sneezed once for a lot of different people. It can only mean that there is some particular person for whom Sira sneezed over and over.

3 Reciprocal use

In addition to its iterative use, *-an* can be used to indicate a reciprocal situation. This use of *-an* is robustly found across (Narrow) Bantu languages (Dammann, 1954; Mchombo, 1993b; Dalrymple et al., 1994; Nurse and Philippson, 2003; Maslova, 2007) among many others.

- (15) a. *avaana va-lol-an-i*
 2child 2SM-see-AN-FV
 ‘The children saw each other.’
 b. *Sira na Imali va-duy-an-i*
 1Sira and 1Imali 2SM-hit-AN-FV
 ‘Sira and Imali hit each other.’

As pointed out for Chichewa (Bantu) by Mchombo (1993b, 2007), reciprocal-*-an* has many of the core properties we associate with reciprocal markers. For instance, it is subject to locality and c-command conditions (i.e., Condition A).

- (16) a. **avaana va-vor-i [ndii Maina a-lol-an-i]* LOCALITY
 2child 2SM-say-FV that 1Maina 1SM-see-AN-FV
 ‘*The children said that Maina saw each other.’
 b. **muremi y-a avaana a-lol-an-i* C-COMMAND
 1friend 1-of 2child 1SM-see-AN-FV
 ‘*The children’s friend saw each other.’

Similarly, there are conditions on the phi-features of the antecedent: it must be plural.

- (17) a. **Maina a-lol-an-i*
 1Maina 1SM-see-AN-FV
 ‘*Maina saw each other.’

Reciprocal constructions also display something akin to “subject-orientation” (putting aside complexities of how to define the term “subject”). For instance, the antecedent for a reciprocal cannot be the Goal in a Double Object construction.

- (18) * *Sira a-many-an-i avaana*
 1Sira 1SM-show-AN-FV 2child
 [intended: ‘Sira showed the children each other (in the mirror).’]

Finally, reciprocal-*an* always appears outside of valency increasing morphology. The other ordering yields an iterative reading of -*an*.

- (19) a. *avaana va-sek-iz-an-i* CAUSATIVE
 2child 2SM-laugh-CAUS-AN-FV
 ‘The children made each other laugh.’ (\neq *vasek-an-iz-i*)
 b. *avaana va-hanzuk-il-an-i* APPLICATIVE
 2child 2SM-shout-APPL-AN-FV
 ‘The children shouted at each other’ (\neq *vahanzuk-an-il-i*)

This of course directly contradicts what was observed earlier for the iterative use of -*an*. Indeed, all of the properties associated with the reciprocal use are not observed with the iterative use. There are no conditions on the “antecedent” (i.e., the subject) with iterative-*an*.

However, although there is no apparent (morpho-)syntactic evidence to connect the two uses, we can state that -*an* has a uniform *semantic* distribution. This is because reciprocal situations are also cumulatively plural events with a single (plural) event participant (Klaiman, 1991; Kemmer, 1993; Evans et al., 2011). Thus, we can say that -*an* expresses a *part* of the meaning associated with reciprocity. I will spell out this idea in the next section.⁹

4 The meaning of reciprocity

Reciprocal meaning can be broken down into independent pieces of meaning. This is the central observation of Heim et al. (1991), who argue that a plausible semantics for *each* coupled with a plausible semantics for *other* (plus assumptions about movement) can derive reciprocal meaning in English, since reciprocity always involves some sort of distributor (*each*) and a “distinctor” (*other*).

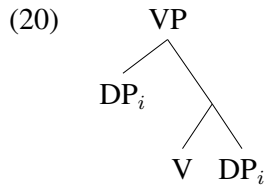
Since Heim et al, there has been a growing amount of research into the particular semantic pieces that make up reciprocity (Beck, 2001; Schein, 2001; Evans et al., 2011) among others. I focus here on two of them.

⁹It’s worth noting that in Logoori, -*an* cannot appear in the *associative construction*, commonly found in Bantu languages (Dammann, 1954; Vitale, 1981; Maslova, 2007; Dimitriadis, 2008). (It’s also called the *sociative*, *comitative* or *discontinuous* reciprocal (Nurse and Philippson, 2003; Maslova, 2007).) The associative allows the plural group whose members are in a reciprocal relation to be syntactically divided between the subject and an associative phrase.

- (1) *Sira a-na-pend-an-a na Imali* (Swahili)
 * *Sira y-a-yaanz-an-a na Imali* (Logoori)
 1Sira 1SM-PRES-love-AN-FV and Imali
 ‘Sira and Imali love each other’

However, associative constructions are possible with inherently reciprocal predicates in Logoori like *kwaagana*, ‘to meet,’ *kufana* ‘to resemble,’ etc. Note that all inherently reciprocal verbs appear to bear a lexicalized -*an* marker at the end.

First, reciprocal situations are intransitive — in fact, they describe *single-participant events* in that there is only a single argument of the predicate which fill two distinct grammatical positions (Klaiman, 1991; Kemmer, 1993):¹⁰ The idea is sketched in (20).



The tree in (20) describes an event with a single participant (DP_i) which is mapped to two grammatical positions. (Note that DP_i could itself denote a plurality.) That is, the event of the verb involves one less “distinct” argument (Kemmer, 1993). Indeed, in many languages the reduction in valency is reflected in the appearance of valency-reducing morphology in the expression of reciprocity (Nedjalkov, 2007).

Moreover, reciprocal situations are *cumulatively plural events* (Carlson, 1998; Kemmer, 1993; Schein, 1993; Dimitriadis, 2008). In this respect, they always appear to describe a maximal event of P which consists of sub-events of P.¹¹

(21) *Last week, Imali stared at Sira. The following day, Sira stared at Imali.*

a. # *Sira na Imali va-hondolel-an-i*

Sira and Imali 2SM-stare-AN-FV

‘#Sira and Imali stared at each other.’

[Speaker comment: “This only makes sense if Sira and Imali are staring at each other at the same time.”]

(22) *On Tuesday, Sira kicked Imali. On Wednesday, Imali kicked Sira.*

a. # *Sira na Imali va-nagiz-an-i*

Sira and Imali 2SM-kick-AN-FV

‘#Sira and Imali kicked each other.’

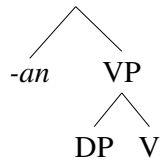
[Speaker comment: “No... They did it on different days? They need to do it like one after the other.”]

Thus, since reciprocals are also cumulatively plural and semantically intransitive, the appearance of *-an* is expected: it is the element that cumulatively pluralizes single-participant events. In other words, *-an* pluralizes a single-participant event, which can be mapped to different syntactic configurations:

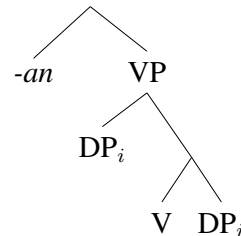
¹⁰I’ll note that reciprocals do not act *syntactically intransitive* in Logoori, unlike in Chichewa (Dalrymple et al., 1994; Mchombo, 1993a). See also Safir and Sikuku 2018 for a similar observation for Lubukusu, a related Luhya language. It’s worth noting that *-an* can be used with other syntactically transitive, but semantically intransitive predicates, including cognate objects (e.g., *sneeze a big sneeze*). I take this as further evidence that *-an* is sensitive to semantic, not syntactic transitivity.

¹¹It’s pointed out in Bruening (2007) that there are differences between stative and non-stative reciprocal expressions. I use both kinds of verbs to control for this.

(23) a. **Iterative use:**



b. **Reciprocal use:**



On this analysis, *-an* does not come with reciprocal meaning; it's always an event pluralizer. The reciprocal meaning must be compositional, i.e., a result of putting together different pieces of the meaning parts of reciprocity, one of which is event plurality of intransitive predicates. I discuss what else is needed to get the meaning in section 5.

Before that, consider again the (morpho-)syntactic reciprocal properties discussed earlier. First, observe that locality and c-command (i.e., Condition A) are enforced because *-an* can only occur with intransitive predicates.

- (24) a. **avaana va-vor-i [ndii Maina a-lol-an-i]* LOCALITY
 2child 2SM-say-FV that 1Maina 1SM-see-AN-FV
 ‘*The children said that Maina saw each other.’
- b. **muremi y-a avaana a-lol-an-i* C-COMMAND
 1friend 1-of 2child 1SM-see-AN-FV
 ‘*The children’s friend saw each other.’

The verb phrase containing *-lol-*, ‘see’ doesn’t describe a single-participant event in either (24a) or (24b).

Similarly, *-an* can never have a non-subject antecedent because it would require that *-an* attach to something that isn’t a property of events, say a (low) applicative phrase.

- (25) **Sira a-many-an-i avaana*
 1Sira 1SM-show-AN-FV 2child
 [intended: ‘Sira showed the children each other (in the mirror).’]

The verb phrase doesn’t describe an event with a single-participant in (25). Moreover, there is no plausible projection below VP that could conceivably be construed as a single-participant event.

Finally, if *-an* appears outside of valency increasing morphology, then it can only have a reciprocal use. Again, this follows as long as the DPs are “indistinct,” i.e. are co-referential.¹²

¹²Presumably, the fact that *-an* must appear with a plural antecedent reduces to a blocking effect. With a singular antecedent, the only possible interpretation is that of a reflexive action, which is expressed using the affix *i-* (again, commonly found across Bantu languages). For space reasons, I must leave the expression of the reflexive prefix/object-marker *i-* out of the discussion here. A couple of notes may be useful for future work though. The reflexive appears to cover the semantic space of reciprocals in that it is compatible with Murray’s (2008) so-called “mixed” readings. Second, reflexive and reciprocal affixes may co-occur in certain contexts. See Safir and Sikuku 2018 for related observations in Lubukusu (Luhya).

- (26) a. *avaana va-sek-iz-an-i* CAUSATIVE
 2child 2SM-laugh-CAUS-AN-FV
 ‘The children made each other laugh.’ (\neq *vasek-an-iz-i*)
- b. *avaana va-hanzuk-il-an-i* APPLICATIVE
 2child 2SM-shout-APPL-AN-FV
 ‘The children shouted at each other’ (\neq *vahanzuk-an-il-i*)

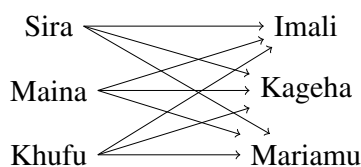
5 The rest of reciprocity

Since *-an* doesn’t express reciprocity, only event plurality, then the reciprocal meaning must come from somewhere else. As noted above, there is a long tradition of treating reciprocity as *compositional*. Independent processes that are found in the language “conspire” to create a reciprocal meaning (Heim et al., 1991; Davies, 2000; Faller, 2004). Of particular importance is the well-known fact that there is a parallel between reciprocal situations and relational plurals (Fiengo and Lasnik, 1973; Langendoen, 1978; Dalrymple et al., 1994; Beck, 2001) among others. Both relational plurals and reciprocals involve different mappings between the subject and object, i.e., the “strong” and “weak” readings.¹³

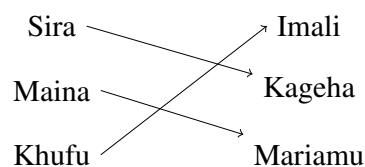
The strong reading is characterized by having every individual in the subject noun phrase be in a relation with every individual in the object noun phrase, and vice versa. Thus in (27), the strong reading holds if each of Sira, Maina, and Khufu all saw each of Imali, Kageha, Mariamu, and Imali, Kageha, and Mariamu were each seen by Sira, Maina, and Khufu.

- (27) *avikura va-vagaa va-lol-i avakana va-vagaa*
 2boy 2-three 2SM-see-FV 2girl 2-three
 ‘Three boys saw three girls.’

Strong reading:



Weak reading (one of many):



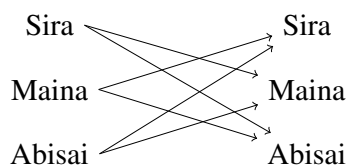
On the weak reading, every individual in the subject noun phrase is in a relation with *at least one* individual in the object noun phrase, and vice versa. Note that in Logoori, these two readings are not morphologically marked in any way. There is some implicit semantic processes, say, a distributivity operator, that creates the mappings.

¹³There are many ways a reciprocal/plural relation can be “weak” — indeed the strong reading can be framed as a type of weak reading (Bruening, 2007). Under the right contexts, all the ambiguities are available in Logoori for both relational plurals, as well as reciprocals. *-An* also gives rise to scope ambiguities with intensional verbs, i.e., *Sira and Imali think they saw each other*.

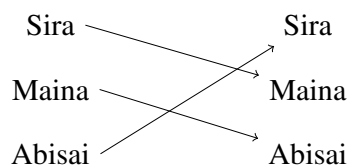
The weak and strong readings are also found in reciprocal situations in Logoori. The strong reading is the one in which each of Sira, Maina, and Abisai sees each (other) boy.¹⁴ The weak reading is where each of Sira, Maina, and Abisai sees (at least) one other boy.

- (28) *avikura va-vagaa va-lol-an-i*
 2child 2-three 2SM-see-AN-FV
 ‘Three boys saw each other.’

Strong reading:

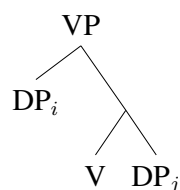


Weak reading (one of many):

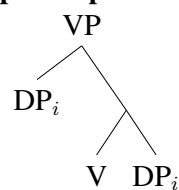


Given that there must be some mechanism for calculating a relational plural, the same mechanism applies in a reciprocal construction. The difference is that the reciprocal involves two co-referential DPs filling each syntactic position.

Plural relation



Reciprocal plural relation



There are many formal theories for how to derive to plural relations (Heim et al., 1991; Beck, 2001; Sternefeld, 1998; Murray, 2008). Any of these is compatible with the proposal above (*modulo* theoretical differences). More importantly, the mapping of the subject and object only form a part of reciprocal meaning. *-An* contributes that the reciprocal situations are also cumulative plural events. In other words, relation plurals are not necessarily cumulatively plural events. This piece of meaning does not come as part of the asserted meaning of relation plural sentences like (27) (though it may be part of pragmatic meaning), thus it must be provided some other way.

6 On reciprocal polysemy cross-linguistically

Among the various types of reciprocal polysemies mentioned earlier, it's notable that the “second” meaning is always something that forms a sub-component of overall reciprocal meaning. For instance, reciprocal-reflexive polysemy (e.g., Romance SE) can be analyzed as the grammaticalization of the a mapping between two co-referential, possibly plural, individuals. See Murray (2008) for Cheyenne and Safir (1996) more generally. With reciprocal-sociative polysemy (e.g.,

¹⁴The reflexive relation is left out of strong reciprocity in Logoori — though this is not always cross-linguistically true (Murray, 2008).

Ancient Greek) the marker expresses that there is a collective/cumulative plural individual as a single event participant. See Dixon (1988) for Boumaa Fijian and Dimitriadis (2008) for related Bantu languages. As argued above reciprocal-iterative polysemy grammaticalizes the event plurality found in reciprocal situations. Similar facts have been reported in Davies (2000); Faller (2004). Importantly, (as noted by Nedjalkov (2007)) we don't find, say, a *reciprocal-telic* polysemy, or a *reciprocal-definite* polysemy. This is presumably because telicity/definiteness aren't sub-components of RECIPROCALITY.

Finally, what implications does Logoori's *-an* have for the numerous cognate *-an*'s across Bantu? A clue for future work is that *-an* often functions closer to a sociative marker in many Bantu languages (cf footnote 9). This suggests that *-an* is a quantifier in those languages, but over individuals. Interestingly, Maslova (1999) makes essentially this argument. The variation in *-an*'s use could then be attributed to whether *-an* in a particular language is allowed to quantify over individuals, events, or even both. In other words, *-an* is never a "reciprocator," it always expresses some sub-component of reciprocal meaning.

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