

Distributive numerals

Georgian and Tagalog (Gil 1992; chapters 6 and 7)
 Karitiana (Muller and Negrão 2009; Muller 2011)

1. Tagalog

1.1 *Some properties of Tagalog*

- Verb initial language
- Voice and case marking morphology: *ng* direct case; *sa* locative; *para sa* benefactive
- Case morphology suggest definiteness (*ang* definite; *ng* indefinite)
- thematic relations are marked as a verbal affix: *nag-* actor topic; *-in-* patient topic; *pinag-* locative topic; *-an* benefactive topic

1 Nagpatay ang lalaki ng manok sa bahay para sa bata
 Killed-AT TOP man DIR chicken OBL house for OBL boy
 ‘The man killed a chicken in a/the house for a/the boy’
 (Gil 1992; 157 – example 1a)

- Nouns can be bare and plural morphology is optional:

2a Binasa ko ang libro
 Read-PT dir-1SG TOP book
 ‘I read the book(s)’

2b Binasa ko ang mga libro
 Read-PT dir-1SG TOP PL book
 ‘I read the books’

2c Binasa ko ang tatlong libro
 Read-PT dir-1SG TOP three-LIG book
 ‘I read three books’
 (Gil 1992; 161 – examples 4a – 4c)

- There are syntactic similarities between constructions with numerals and adjectives (same position in the sentence and the enclitic *-ng* is affixed on numerals and adjectives):

- 3a Binasa ko ang **tatlong** libro
 read-PT DIR-1SG TOP three-LIG book
 'I read three books'
- 3b Binasa ko ang **bagong** libro
 read-PT DIR-1SG TOP new-LIG book
 'I read the new book(s)'
 (Gil 1992; 162 – examples 5a – 5b)

- Syntactic similarities between nominal phrases and verbal phrases (predicate + *ang* + topic):

- 4a Yumaman ang artista
 got:rich-AT TOP actress
 'The actress got rich'
- 4b Nagluto ng pagkain ang artista
 cooked-AT DIR food TOP actress
 'The actress cooked food'
 (Gil 1992; 163 – examples 6a – 7a)

1.2 Distributive numerals

1.2.1 Adnominal distributive numerals

- Four different morphological series of adnominal distributive numerals:

Table 1. Adnominal Distributive Numerals (Tagalog)

Numerals		Series 1 Prefix: <i>tig-</i>	Series 2 Prefix: <i>tig-</i> + numeral reduplication (first syllable)	Series 3 Prefix: <i>tig-</i> and reduplication (first two syllables)	Series 4 Prefix: <i>man-</i>
1	Isa	Tig-isa	Tig-iisa	Tigi-tigisa	---
2	Dalawa	Tig-idadalawa	Tig-dadalawa	Tiga-tigalawa	---
3	Tatlo	Tig-tatlo	Tig-tatatlo	Tiga-tigatlo	---
4	Apat	Tig-apat	Tig-aapat	Tiga-tigapat	---
10	Sampu	Tig-sampu	Tig-sasampu	---	mamulo
<i>Notes:</i>		Most productive series		Restricted to numerals 1 to 4	Powers of ten

(Gil 1992; 164-165 – example 8)

NB: despite their morphological differences, Gil does not report semantic differences between the four series of adnominal distributive numerals; the author argues that the four classes of distributive numerals occur in the same scenarios.

- Distributive numerals can also be formed from Spanish numerals:

O = oblique NP

Ang, ng and *sa*: case marking

- Exemplifying the hierarchy proposed by Gil (1992):

Example: *ang* A (case marking + actor of transitive verb) > *ng* P (case marking + patient of transitive verb):

6a Nakakita [*ng* **tigdalawang babae**] *ang* tatlong lalaki
 saw-AT DIR DIST-two-LING woman TOP three-LIG man

 sa Luneta
 OBL Luneta
 ‘Three men saw [two women each] in the Luneta’

NB: the distributive numeral must occur within a patient NP marked with *ng* ‘forcing it to distribute over an actor NP marked with *ang*’ (Gil 1992; 173)

6b * Nakakita *ng* dalawang babae [***ang* tigtatlong lalaki**]
 saw-AT DIR two-LIG woman TOP DIST-two-LIG man
 sa Luneta
 OBL Luneta
 ‘[Three men each] saw two women’
 (Gil 1992; 172 – examples 17a and 17b)

1.3.2 Patient topic verb

7a Nakita [***ng* tigtatlong lalaki**]*ang* dalawang babae
 saw-PT DIR DIS-three-LIG man TOP two-LIG woman
 sa Luneta
 OBL Luneta
 ‘[Three men each] saw two women in the Luneta’

7a * Nakita *ng* tatlong lalaki [***ang* tigdalawang babae**]
 saw-PT DIR three-LIG man TOP DIST-two-LIG woman
 sa Luneta
 obl Luneta
 ‘Three men saw [two women each] in the Luneta’
 (Gil 1992; 173 – examples 20a and 20b)

In other words...

- In (6), the agent is the topic; in (7) the patient is the topic. The distributive numeral cannot occur inside the topic.
- The author discusses two sub-hierarchies that can be derived from the hierarchy presented in (5):

8a *Case Marking Subhierarchy*
 Ang N > Sa N > Ng N

8b *Thematic Relations Subhierarchy*
 P > A > S
 O

From the subhierarchy proposed by Gil (1992), it follows that:

- (i) Adnominal distributive numerals are more likely to occur within indefinite NPs than within definite NPs (remember from the introduction that *ng* is a case morpheme associated to indefiniteness) similarly to *each* in English.
- (ii) Also, according to the patient prominence hypothesis, adnominal distributive numerals are more likely to occur within actor NPs than within patient NPs (similarly ‘patient NPs are more likely to have wider scope than actor NPs’) (Gil 1992; 179)

1.3.3. *Other syntactic considerations:*

- Distributive numerals may occur as a main verb:

9 Papagtigisahin mo sila ng saging
 DIST-one-AT DIR-2SG TOP-3PL DIR banana
 ‘Let each one take a banana’

(Gil 1992; 182 – example 35)

- Gil (1992) did not find adnominal distributive numerals occurring in adverbial position, but he did find adverbial distributive numerals in adnominal positions:

tatlu-tatlo ‘three (adverbial)’ in adverbial position:

10a Pumanta sa parti ang mga lalaki nang tatlu-tatlo
 went-AT OBL party TOP PL man ADV DIST-three
 ‘The men went to the party in threes’

tatlu-tatlo ‘three (adverbial)’ in adnominal position:

10b ?? Pumanta sa parti ang mga tatlu-tatlo-ng lalaki (topic position)
 went-AT OBL party TOP PL DIST-three-LIG man
 ‘The men went to the party in threes’

tatlu-tatlo ‘three (adverbial)’ in adnominal position:

10c Tatlu-tatlo-ng lalaki ang pumanta sa parti (predicate position)
 DIST-three-LIG man TOP went-AT OBL party
 ‘The men went to the party in threes’

(Gil 1992; 181 – examples 30a to 30c)

NB: Gil (1992; 181) argues that sentences (10a) to (10c) can all be translate as ‘The men went to the party in threes’ (‘...but with different pragmatic structures’)

1.4. *The semantics of distributive numerals*

- In order to discuss the possible semantic interpretations of sentences with adnominal distributive numerals, Gil (1992; 184) contrasted a sentence in Tagalog and in English:

11a Nagdala ng tigtatlong maleta ang dalawang lalaki
 carried-AT DIR DIST-three-LIG suitcase TOP two-LIG man

11b Two men carried three suitcases each
 (Gil 1992; 184 – examples 36a and 36b)

Classes of interpretation (Gil 1992; 184 and 216):

Class A: clausal distributivity over subject NP (two men carried some/the suitcases; the suitcases carried by each man were (individually or collectively) heavy)

Class B: clausal distributivity over verbal phrase (two men carried some/ the suitcases; the suitcases carried each time were (individually or collectively) heavy)

Class C: phrasal distributivity over head (two men carried some/the suitcases; each suitcase was heavy)

NB: whether the suitcases were disjoint and carried collectively or distributively is not determined by A, B, or C. To investigate the possible different interpretations for the sentences in (11), Gil propose five state of affairs:

Five state of affairs:

State of affairs 1

M1 carried {s1, s2, s3}
 M2 carried {s4, s5, s6}

State of affairs 2

M1 carried {s1, s2, s3}
 M2 carried {s3, s4, s5}

State of affairs 3

M1 carried s1
 M1 carried s2
 M1 carried s3
 M2 carried s4
 M2 carried s5
 M2 carried s6

State of affairs 4

M1 carried s1
 M1 carried s2
 M1 carried s3
 M2 carried s3
 M2 carried s4

M2 carried s5

State of affairs 5

M1 carried s1

M1 carried s2

{m1, m2} carried s3

m2 carried s4

m2 carried s5

- Gil (1992; 187) consulted two Tagalog speakers and one English speaker for each state of affairs described above:

Table 5. Tagalog and English speakers evaluate the sentences in (11) according to five possible state of affairs

State of affairs	1	2	3	4	5
Distributivity	+	+	+	+	-
Disjointness	+	-	+	-	-
Collectivity	+	+	-	-	-
Tagalog S1	T	T	F	F	F
Tagalog S2	T	F	?	F	F
English	T	T	T	T	F

(Gil 1992; 187 – table 1)

NB: according to the author, the consultants' responses indicate that Tagalog *tigtatlo* 'is more restricted than that of the corresponding English expression three... each' (Gil 1992; 188). Besides, *tig-* and *each* force the patient to distribute over the actor NP given the unacceptability of state of affairs 5 by all the consultants.

1.5 Other considerations

1.5.1 Double Distributive Constructions

12a Dinala [ng tigdawang lalaki] [ang tigtalong maleta]
 carried-PT DIR DIST-two-LIG man TOP DIST-three-LIG suitcase

12b Nagdala [ng tigtalong maleta] [ang tigdawang lalaki]
 carried-AT DIR DIST-three-LIG suitcase TOP DIST-two-LIG man
 'Sets of two men carried (the same) three suitcases'

In Gil's representation:

12c [[2-DIST ⇒ UNITS] MAN] CARRIED [[3-DIST UNITS] SUITCASE]

(Gil 1992; 189; examples 39a and 39b)

NB: for those sentences, Tagalog speakers rejected interpretations ‘involving distributivity within both NPs’ and favored an interpretation within the actor NP. Gil’s hypothesis (1992) is that this reading is due to patient prominence in Tagalog. Besides, he argues in favor of the ‘criterion of referential strength-uniqueness’ according to which an NP referring to a single set is preferred to a NP referring to multiple sets. In these examples, there is a referential strength-uniqueness preference of patients over actors.

1.5.2. *Bawat*: distributive numeral formative

- *Bawat*, as *each*, is a universal quantifier that marks distributivity:

13a Each of two men carried three suitcases

13b Two men carried three suitcases each
(Gil 1992; 193; examples 46a and 46b)

- English: examples (13a) and (13b) are synonymous

14a Dinala ng **bawat** isa sa dalawang lalaki ang tatlong maleta
carried-PT DIR each one OBL two-LIG man TOP three-LIG suitcase

14b Dinala ng dalawang lalaki ang **bawat** tatlong maleta
Carried-PT DIR two-LIG man TOP each three-LIG suitcase
(Gil 1992; 193; examples 47a and 47b)

- Tagalog: examples (14a) and (14b) are not equivalent; (14a) is synonymous to (13a) and (13b). (14b) is synonymous to adnominal distributive numeral sentences, i.e., numerals preceded by *bawat* are similar in syntax and semantic distribution to numerals preceded by *tig-*.
- Gil suggests that a diachronic explanation for the derivation of adnominal distributive numerals may be that the mechanism is derived from universal quantifiers that mark distributivity (distributive numeral formative Gil 1992; 194):

15 Two men [_S each carried 3 suitcases]

Two men [_{VP} each carried 3 suitcases]

Two men carried [_{each} 3 suitcases]

Two men carried [_{NUM} each 3] suitcases
(Gil 1992; 194 – examples 48)

2. Georgian

2.1 Some properties of Georgian

- Word order is free (SOV, most basic)
- Split ergative case (case morphology depends on the lexical category of the verb (16c) and aspect of the verb (16a and 16b)). Examples:

16a k'abeci merian
men-NOM sing-3PL
'The men are singing'
(Gil 1992; 203 – example 1a)

16b k'aebma imeres
men-ERG sang-3PL
'The men sang'
(Gil 1992; 203 – example 1b)

16c k'acebma cantebi c'aies
men-ERG suitcases-NOM carried-3PL
'The men carried the suitcases'
(Gil 1992; 204 – example 2a)

- No morphological distinction between NPs and DPs:

17 Bavavi mirboda
boy-NOM ran-3SG
'A/the boy ran'
(Gil 1992; 205 – example 4a)

- As in Tagalog, reduplicated numerals form a subclass of adjectives:

Table 6. Georgian Case Marking

Nominative	sami	lamazi	bavsvi
Ergative	samma	lamazma	bavsvma
Vocative	samo	lamazo	bavsvo
Genitive	sami	lamazi	bavsvi
Instrumental	sami	lamazi	bavsvit
Dative	sam	lamaz	bavsvs
Adverbial	sam	lamaz	bavsvat
	'three'	'pretty'	'boy'

Where:

These three suffixes occur on numerals, adjectives, and nouns:

Nominative = *-i*; Ergative = *-ma*; Vocative = *-o*

Affixes that only occur with nouns:

Genitive = *-is*; Instrumental = *-it*; Dative = *-s*; Adverbial = *-at*

- Numerals are basically adjectival, but they can also occur as adverbs or nouns:

Adnominal numerals:

18 Sami bavsvi mirboda
 three-NOM boy-NOM ran-3SG
 '(The) three boys ran'

Adverbial numerals (-*at* adverbial case marking):

19 Bavsvebi samat mirboda
 boys-NOM three-ADV ran-3SG
 'Some/the boys ran threeley'

20 bavsvebi sameulat mirboda
 boys-NOM three-NML-ADV ran-3SG
 'Some/the boys ran threesomely'
 (Gil 1992; 207-208; examples: 6a-6d)

Nominalization of numerals (-*eul* nominalization suffix):

21 Bavsvebis sameuli mirboda
 boys-GEN three-NML-NOM ran-3SG
 'A/the threesome of boys ran'

2.2 Reduplication and distributivity

- Distributive numerals can be formed by reduplication:

Table 7. Formation of adnominal distributive numerals by reduplication

	Cardinal numerals	Adnominal Distributive Numerals
1	erti	ert-erti
2	ori	or-ori
3	sami	sam-sami
4	otxi	otx-otxi
5	xuti	xut-xuti
11	tertmet'i	tertmet'-tertmet'i
123	as-oc-da-sami	as-co-da-sam-as-oc-da-sami

(Gil 1992; 211 – example 13)

- As numerals, adjectives also reduplicate:

Adjectives	Numerals
22a ckari at'let'ebi fast-NOM athletes- NOM Comment: athletes may be fast individually or collectively	23a Sami at'let'ebi three- NOM athletes- NOM Comment: single set of three athletes
22b ckar-ckari at'let'ebi	23b Sam-sami at'let'ebi

fast fast-DIST-NOMathletes- NOM Comment: each individual athlete was	three-DIS-NOM athletes-NOM Comment: several sets of three athletes
--	---

(Gil 1992; 213 – examples 19a and 19b)

- Gil's analysis is that reduplicated numerals and adjectives distribute over the classifier head:

22

[FAST UNITS] ATHLETE
Collectively fast (units of) athlete (for 22a only)

[FAST ⇒ UNITS] ATHLETE
Individually fast (units of) athlete (for 22a and 22b)

23

[3 UNITS] ATHLETE
Collectively fast (units of) athlete (for 23a)

[3 ⇒ UNITS] ATHLETE
Units numbering three each, of athlete (for 23b)

- Reduplication may also apply for adverbs and also entails distributivity:

24a **Ckar-ckari** at'let'ebi mirbodnen (Distributive adjective)
fast-DIST-NOMathletes-NOM ran-3PL

24b at'let'ebi **ckar-ckara** mirbodnen (Distributive adverb)
athletes-NOM fast-DIST-ADV ran-3PL
Gil's comment (1992; 218): 'both sentences entail that each individual athlete was fast'
(Gil 1992; 218 – examples 27a and 27b)

- Gil (1992; 219) emphasize that some sentences with distributive adverbials may be ambiguous, as presented below:

25a K'acebma amocanebi gamoicnes prtxil-prtxilat
men-ERG problems-NOM solved-3PL care-DIST-ADV
Possible interpretations: each man acted carefully or each problem was solved carefully

25b K'acebma amocanebi gamoicnes prtxil-prtxilat
men-ERG problems-NOM solved-3PL care-DIST-ADV
Possible interpretations: the men acted in threes the problems were acted upon in threes
(Gil 1992; 219 – examples 31a and 31b)

- A few verbs reduplicate in Georgian, and they also refer to distributivity:

26a Adamiani gamalda
 man-NOM became:tall-3SG
 'The man became tall'

26b Adamiani gamald-gamalda (phrasal distributivity)
 man-NOM became: tall-DIST-3SG
 'The man became tall in stages'

26c Adamianebi gamald-gamaldnen (clausal distributivity)
 men-NOM became: tall-DIST-3PL
 'The men became tall in degrees'
 'The men each became tall'

- The kind of distributivity entailed by the verb may be phrasal or clausal distributivity if the object is singular:

27a Man vaslebi mic'ia
 3sg-ERG apples-NOM moved-3SG
 'He moved the apples'

27b.i Man vaslebi mic'i – mic' ia (phrasal distributivity)
 3sg-ERG apples-NOM moved-PH:DIST-3SG
 'He moved the apples in stages'

27b.ii Man vasli mic'i – mic' ia
 3sg-ERG apple-NOM moved-PH:DIST-3SG
 'He moved the apple in stages'



In Gil's terms: HE [[S UNITS] APPLE] [[S UNITS] MOVED-DIST]

27c.i Man vaslebi mic'-mic'ia (clausal distributivity)
 3sg-ERG apples-NOM moved-CL: DIST-3SG
 'He moved each of the apples separately'

27c.ii * Man vasli mic'-mic' ia
 3sg-ERG apples-NOM moved-CL:DIST-3SG



In Gil's terms: HE [[S UNITS] APPLE] [[S UNITS] MOVED-DIST]

- clausal distributivity is not compatible with singular objects (*vasli* in 27.c.ii) (Gil 1992; 222); phrasal distributivity is compatible with singular objects (26.c.ii).

- If the subject is plural, the sentence that includes the verb form associated to clausal distributivity -- ‘mic’-mic’ies’ -- is going to be ambiguous (but not mic’i-mic’ies, ‘phrasal distributivity’ verb):

28a	Ingenma 3PL-ERG	vaslebi apples-NOM	mic’ies moved-PL	
	‘They moved the apples’			
28b	Imgenma 3PL-ERG	vaslebi apples-NOM	mic’i-mic’ies moved-PH:DIST-3PL	(phrasal distributivity)
	‘They moved the apples in stages’			
28c	Ingenma 3pl-ERG	vaslebi apples-NOM	mic’-mic’ies moved-CL: DIST-3PL	(clausal distributivity)
	‘Each of them separately moved the apples’ (<i>mic’-mic’ies distributes over the subject</i>)			
	‘They moved each of the apples separately’ (<i>mic’-mic’ies distributes over the object</i>)			
	‘Each of them separately moved each of the apples separately’ (<i>mic’-mic’ies distributes over both NPs</i>)			

- Reduplication of nouns is more restricted in comparison to distributive numerals, adjectives, adverbs. Noun reduplication is restricted to nominal numerals formed by suffixation of the morpheme *-eul*:

29a	Bavsvebis boys-GEN	sam-sameulebi three-DIST-NML-NOM	mirboda ran-3SG
29b	Bavsvebi boys-NOM	sam-sameulat three-DIST-NML-ADV	mirbodnen ran-3PL
	‘Some/the boys ran in threes’		

Summary:

- Verbs, adjectives, adverbs but mostly numerals can undergo reduplication;
- Reduplication trigger a distributive reading;
- Gil argues in favor of a parallel between adjectives and adnominal numeral in Georgian;
-

2.3 *A final note before we conclude the discussion on Georgian: “stack numerals”*

English

30a	Tall Albanian students
30b	* Ten two students

Georgian

- Non-reduplicated numerals:

31a	* Ati ten- NOM	ori two-NOM	st’udent’i student- NOM
	‘Ten two students’		

33a

Contexts: A boy broke two eggs at once (one event only).
A boy broke two eggs, one after the other (more than one event).

Õwã nakakot sypomp opokakosypi
õwã Ø-naka-kot-Ø sypom-t opok-ako-sypi
child 3-DECL-break-NFT two-OBL egg
'Children broke two eggs' / 'Child broke eggs twice'

33b

Contexts: *A boy broke two eggs at the same time (one event only).
A boy broke two eggs, one after the other (more than one event).

Õwã nakakokonat sypomp
Õwã Ø-naka-kot-kot-a-t sypom-t
boy 3-DECL-break-RDPL-TV-NFT two-OBL
'Children broke two eggs (two or more events)' / 'Children broke eggs twice'
(Muller and Negrao 2009; examples 27)

3.2. Distributive numerals

- Distributive numerals in Karitiana are formed by numeral reduplication:

34 Sypomp.sypomp nakam't gooj õwã
sypom-t.sypom-t Ø-naka-m-'a-t
two-OBL.two-OBL 3-DECL-CAUS-build-NFT canoe child
'Each child built two canoes'
'Children built two canoes at a time'

- Distributive numerals in English and in Karitiana, according to Muller (2011), do not share the same interpretations:

Karitiana:

For each kid₁, there is an event of kid₁ breaking two eggs

For each occasion, there is an event of kids breaking two eggs

English:

For each occasion, there is an event of two kids breaking two eggs

For each occasion, there is an event of kids breaking two eggs

- Muller reports the existence of distributive numerals being interpreted as adverbial distributivity operators:

Paraphrase for sentence 34:

'There was an event of children building canoes and this event is divided into subevents of children building two canoes; and these subevents are individuated on the basis of the agent (children) or on the basis of 'times''

- NPs and VPs are claimed to have cumulative denotations in Karitiana:

35a Ōwã nakam't gooj
 Ø-naka-m-'a-t
 child 3-DECL-CAUS-build-NFT canoe

35b $\exists e \exists x \exists y$ [build (y) (e) & agent (x) (e) & child (x) & canoe (y)]
 'There is a possibly plural event in which an indefinite number of children build an indefinite number of canoes'

Possible interpretations:

- ✓ cumulative reading (some children are building canoes individually, some are building canoes in group...)
- ✓ collective reading (children are building canoes together)
- ✓ distributive reading (each canoe is being build separately)

36 myhimt-myhimt õwã nakam'at gooj
 myhim-t-myhim-t õwã Ø-naka-m-'a-t gooj
 one.OBL-one.OBL child 3-DECL-CAUS-build-NFT canoe
 'Every child built one canoe'
 'Children built canoes one at time'

- ✗ cumulative reading
- ✗ collective reading
- ✓ distributive reading

Analysis for reduplicated numerals:

37 *Myhint-myhint*

P is true in eventuality E iff E has smaller eventualities $e_1, e_2, \dots, e_n, e_{n+1}, \dots$ as parts, in which P is true, and e_n is atomic.

$[[\text{myhint myhint}]] = \lambda P \langle s, t \rangle \lambda E [P(E) \exists e_1 \dots e_n [e_1 \dots e_n < E \ \& \ \text{atomic}(e_n) \ \& \ P(e_n)]]$
 (Muller and Negrão 2009; 18 – example 38 and 39)

3.2. *Properties of distributive numerals*

Property 1: a distributive numeral break an event into subevents of the same type:

38a Ombaky naka'yt pikom
 jaguar eat monkey
 'Jaguars ate monkeys'

38b $\exists e \exists x \exists y$ [jaguar (x) & agent (x) (e) & monkey (y) & eat (y) (e)]

- 39a myhint myhint ombaky naka'yt pikom
 myhim-t-myhim-t jaguar eat monkey
 one.OBL-one.OBL
 'For each jaguar, there is an event of eating one monkey'
 'For each occasion, there is an event of jaguars eating one monkey'
- 39b $\exists e \exists x \exists y$ [jaguar (x) & agent (x) (e) & monkey (y) & eat (y) (e)] & e is made of eating jaguars...

Property 2: the subevents are distributed over the subject or occasions (in the example above, 'for each subject/occasion, there is a subevent of eating monkeys')

Property 3: distributive numerals impose a restriction on the cardinality of one of the sentence arguments:

Transitive verbs with direct objects:

- 40 Ōwā nakakot sypomp.sypomp opokakosypi
 ōwā \emptyset -naka-kot- \emptyset sypom-t-sypom-t opok.ako.sypi
 kid 3-DECL-break-NFT two-OBL-two-OBL egg
 'For each kid, there was an event of his breaking two eggs'
 'For each occasion, there was an event of kids breaking two eggs'

Transitive verbs with oblique objects:

- 41 Inácio Cizino Renato naakat kamyt sypomp.sypomp
 Inácio Cizino Renato \emptyset -na-aka-t i-amy-t sypom-t.sypom-t
 3-DECL-COP-NFT NMZ-buy-CONC.ABS two-OBL-two-OBL
 caroty
 carro-ty
 car-POS
 'Inácio, Cizino and Renato bought two cars each'
 'On each occasion, Inácio, Cizino and Renato bought two cars'

Intransitive verbs:

- 42 Sypomp.sypomp naotām taso
 sypom-t.sypom-t \emptyset -na-otām- \emptyset taso
 two-OBL-two-OBL DECL-arrive-NFT man
 'Men arrived two by two'
 'On each occasion, two men arrived'

3.3. *On the absence of adnominal distributive numerals*

- Muller argues that distributive numerals can only be adverbial quantifiers, never adnominal quantifiers

Evidence 1: distributive numerals may occur in different sentence positions:

43a	Myhimt.myhimt one-OBL.one-OBL	nakam'at 3-DECL-CAUS-build-NFT	gooj canoe	õwã child
43b	nakam'at 3-DECL-CAUS-build-NFT	myhimt.myhimt one-OBL.one-OBL	gooj canoe	õwã child
43c	õwã child	nakam'at 3-DECL-CAUS-build-NFT	gooj canoe	myhimt.myhimt one-OBL.one-OBL

'Each child built one canoe'
'On each occasion, children built one canoe'

Evidence 2: distributive numerals have the same distribution as adverbial quantifiers (e.g., *kandat* 'many times')

- Matrix sentences: adverbs may be left or right adjoined to the clause or left adjoined to VP:

Adverbs – matrix sentences

44a	Kandat kandat many times	jonso jonso woman	nakaot ∅-naka-ot-∅ 3P-DECL-get-NFUT	ese ese water	Adv S V O
44b	* jonso jonso woman	kandat kandat many times	nakaot ∅-naka-ot-∅ 3P-DECL-get-NFUT	ese ese water	* S Adv VO
44c	jonso jonso woman	nakaot ∅-naka-ot-∅ 3P-DECL-get-NFUT	kandat kandat many times	ese ese water	S V Adv O
44d	jonso jonso woman	nakaot ∅-naka-ot-∅ 3P-DECL-get-NFUT	ese ese water	kandat kandat many times	S V O Adv

'Women brought water many times'

Distributive numerals - matrix sentences

45a	Myhint-myhint myhim-t-myhim-t one.OBL-one. OBL	nakam'at ∅-naka-m'-a-t 3DECL-CAUS-build-NFT	gooj gooj canoe	ōwā ōwā child
45b	*ōwā child one.OBL-one. OBL	Myhint-myhint myhim-t-myhim-t one.OBL-one. OBL	nakam'at ∅-naka-m'-a-t 3DECL-CAUS-build-NFT	gooj gooj canoe
45c	ōwā child 3DECL-CAUS-build-NFT	nakam'at ∅-naka-m'-a-t one.OBL-one. OBL	myhint-myhint myhim-t-myhim-t one.OBL-one. OBL	gooj gooj canoe
45c	ōwā child	nakam'at ∅-naka-m'-a-t 3DECL-CAUS-build-NFT	gooj gooj canoe	myhint-myhint myhim-t-myhim-t one.OBL-one. OBL

‘Children built canoes distributively (in ones)’

- Embedded sentences: adverbs must adjoin to the left periphery of the sentence:

46a	myhimt-myhimt one.OBL-one. OBL	jonso woman	ōwā child	mangataty lift-OBL	y-ta-pyting 1P-DEC-want-NFUT	yn 1P
46b	*jonso woman	myhimt-myhimt one.OBL-one. OBL	ōwā child	mangataty lift-OBL	y-ta-pyting 1P-DEC-want-NFUT	yn 1P
46c	*jonso woman	ōwā child	myhimt-myhimt one.OBL-one. OBL	mangataty lift-OBL	y-ta-pyting 1P-DEC-want-NFUT	yn 1P
46d	*jonso woman	ōwā child	mangataty lift-OBL	myhimt-myhimt one.OBL-one. OBL	y-ta-pyting 1P-DEC-want-NFUT	yn 1P

‘I want women to lift children distributively’

Muller's proposal: distributive numerals are not ambiguous between determiner and adverbial quantifiers (despite the fact that distributive numerals may distribute over subjects and over occasions)

But...

- The author does not present the rules that regulate that in a scenario *x* the distributive numeral is going to distribute over subjects and in a scenario *y* it is going to distributive over contextually given occasions.