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Verbal plurality cross-linguistically

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1 Introduction

The present chapter gives a general overview of verbal plurality phenomena cross-linguistically.¹ The term VERBAL PLURALITY MARKERS is used here as a descriptive label to cover verbal morphology marking multiple events as in the examples in (1).²

- (1) a. Yuusùf yaa **sàs~sàyi** littàttàfai (Hausa, Chadic)
 Yusuf 3SG.M.PF **RED-buy** books
 ‘Yusuf bought many (different) books’ (Součková, 2011, 94, ex 47b)
- b. adama takhan duqqa ‘a chai **miilira** (Chechen,
 Adam.ERG today many tea drink.PLR.WP
 Nakh-Daghestanian)

Adam drank a lot of tea over and over again today. (Yu, 2003, 294, ex 7b)

For Hausa verb forms marking multiple events as in (1-a), Newman (1980, 2012) coined the term PLURACTIONALS. The term PLURACTIONAL was later extended to a wider range of markers of multiple events including adverbs and adnominal modifiers (for discussion see in this volume: Chapter 16 on reduplicated PPs of the type N by N; Chapter 17 on occasional-type adjectives; Chapters 18 and 30 on distributive numerals; Chapter 29 for verbal number in Chadic).

In what follows, I outline the main issues addressed in the literature on verbal

¹The discussion in this chapter will center on the better studied cases of markers marking event multiplicity more generally (not of events with a participant plurality of cardinality two). There are some reports of verbal markers of dual number (see Corbett 2000, 248), and it would be possible to frame the discussion in terms of verbal number (as opposed to verbal plurality). However, the relevant descriptions of verbal duals are not very detailed and restricted to participant number of the subject or object (see section 2.2 for the distinction event number/ participant number).

²Abbreviations in the glosses: cited examples are given with the original gloss. ABS = absolutive, ACC = accusative, ADV = adverb, ASP = aspect, CAUS = causative, DECL = declarative, DEF = definite, DEM = demonstrative, DET = determiner, ERG = ergative, F = feminine, FREQ = frequentative, GEN = genitive, HAB = habitual, IND = indicative, INDEF.PL = indefinite plural, IO = indirect object, INTR = intransitive, ITR = iterative, IV = inflecting verb, LOC = locative, M = masculine, MULT = multiple, MULT.SG = multiple event with singular subject, NFUT = non-future, NOM = nominative, OBJ = objective case, PROG = progressive, PTCP = participle, PST = past, PF/PERF/PFV = perfective, PL = plural, PLR = pluractional (Chechen glosses), POSS = possessive, PREP = preposition, PROX = proximal, PRS = present, RED/REDUPL = reduplication, REFL = reflexive, RL/RLS = realis, S= subject, SBJ.NMLZ = subject nominalizer, SG = singular, SP = simple past, TR(LC) = limited control transitivizer, UV = uninflecting verb, WP = witnessed past

plurality.

Section 2 examines the delimitation of verbal plurality phenomena. As is well-documented, verbal plurality markers form a heterogeneous class cross-linguistically and many verbal plurality markers have readings that go beyond event plurality (sections 2.1 and 2.2). One factor underlying this variation is plausibly the fact that multiplicity readings can arise from different sources such as nominal plurality markers, collective nouns, additive expressions and degree expressions (section 2.3). In addition, the definition of event pluralities has to negotiate the well-known complexities surrounding the identification of single events (section 2.4).

Verbal plurality markers impose specific restrictions on the event pluralities they allow (section 3). These restrictions concern two aspects of the event plurality. On the one hand, **separation conditions** for sub-events of the event plurality specify the requirements for events to count as different events, including conditions on the distribution of sub-events over arguments and conditions on temporal and spatial distinctness. On the other hand, **similarity conditions** specify the limits of the variation between sub-events that can be taken to count as events of the same type.

Unlike event pluralities associated with frequency adverbials, the event pluralities introduced by verbal plurality markers are often limited in their interaction with other elements in the clause (section 4). The event plurality introduced by verbal markers does not behave like a scope-bearing element as it cannot multiply singular indefinites (section 4.1), contrasting with frequency adverbs. In addition, the event pluralities introduced by verbal plurality markers only allow a limited range of distributive dependencies between the event plurality and other pluralities in the clause. In particular, the availability of distributive dependencies between the event plurality and plural arguments depends on the syntactic type of the plurality denoting expression (section 4.2). In the literature, these types of restrictions have been noted in particular with cardinal arguments and cardinal adverbs (section 4.3).

Section 5 discusses three issues regarding the morphology of verbal plurality markers: the exponents of verbal plurality (section 5.1), the diagnostic criteria proposed in the literature that allow to draw a distinction between verbal plurality markers and agreement markers with plural arguments (section 5.2) and the role of suppletion in the marking of verbal plurality (section 5.3).

Section 6 examines the parallels between verbal plurality and plurality in the nominal domain.

2 The variability of verbal plurality markers

Verbal plurality markers are a highly heterogeneous class cross-linguistically (Dressler 1968; Cusic 1981; Xrakovskij 1997b). In this section I review four factors that contribute to the variability across the phenomena subsumed under the label VERBAL PLURALITY MARKERS in the literature. The first factor of variation is found in the semantic field covered by the verbal plurality marker: many verbal plurality markers are not limited to readings involving multiple events but often allow a wider range of readings that are not straightforwardly related to multiple events, in particular durative and intensive readings. The second source of variability arises from the different patterns linking event plurality to argument plurality. The third factor contributing to the variability of verbal plurality phenomena stems from the fact that interpretations involving multiplicities can be obtained by a range of linguistic means that do not form a natural class. Finally, the analysis of complex events as a multiplicity of events inherits the difficulties posed by the identification of single events.

The following sections discuss each of these factors in turn.

2.1 The semantic field of verbal plurality markers

As a first approximation, event plurality is often defined as a multiplicity of discrete events, in analogy with nominal plurals of count nouns (Jespersen, 1924, 210).

- (2) If the plural of *one walk* or *one action* is *walks, actions*, the plural idea of the verb must be *to undertake several walks, to perform more than one action*. (Jespersen, 1924, 210)

The intuition of event plurality as a discrete plurality of events is also expressed in Lasersohn's influential formula for the analysis of verbal plurality markers corresponding to the conditions in (4). This formula in (3) includes two separation

conditions for events in the event multiplicity X - paraphrased in (4)-b/c. These separation conditions ensure that the events making up the event multiplicity X are discretely identifiable. Notice that the condition in (4)-c is a temporal separation condition, irrespective of the dimension K chosen for the non-overlap condition in (4)-b; the formula thus gives a special status to the separation of events in time.

- (3) $V\text{-PA}(X) \iff$
 $\forall e, e' \in X [P(e) \sim (4)\text{-a}$
 $\& \neg K(e) \circ K(e') \sim (4)\text{-b}$
 $\& \exists t [\text{between}(t, \tau(e), \tau(e')) \& \neg \exists e'' [P(e'') \& t = \tau(e'')]] \sim (4)\text{-c}$
 $\& \text{card}(X) \geq n \sim (4)\text{-d}$
 with K = temporal trace or spatial trace or participants of the event
 PA = pluractional marker (Lasersohn, 1995)

- (4) A multiplicity of events X is a plurality of events satisfying the predicate V + pluractional marker PA if
- a. all the events in X fulfill a certain predicate P (P can be V or be lexically associated with V , see example (28))
 - b. the events in X do not have an overlapping running time and/or the events in X do not occupy overlapping space and/or the events in X do not have overlapping participants
 - c. any two events in X are separated by a temporal gap t (no continuative reading)
 - d. there is a certain number (more than n) of these events

However, as observed in many typological studies of verbal plurality (Dressler, 1968; Cusic, 1981; Xrakovskij, 1997a), verbal markers that mark event multiplicity often also allow other interpretations that go beyond the discrete event multiplicity that is taken to be basic in (2) and (4).

Consider the following examples from Chechen (Yu, 2003, 296) and Hausa (Součková and Buba, 2008). In (5)-a the plural-marked verb receives an interpretation with distribution of the simple predicate over the subject: each subject assumes a standing position once, while in (5)-b the plural-marked verb is attributed to a single sub-

ject, resulting in an iterative interpretation. (5)-c illustrates a durative reading of a plural-marked verb in Chechen, while (6) is an example of an intensive reading of a plural-marked verb in Hausa.

- (5) a. ysh niaxar ullie **hittira** (Chechen)
 they door by stand.PLR.WP
 ‘They assumed a standing position by the door.’ (distributive)
- b. i sialkhana niaxar ullie **hittira**
 3sg yesterday door by stand.PLR.WP
 ‘He stood by the door often yesterday.’ (iterative)
 (Yu, 2003, 296, ex 10c/11c)
- c. Ahxmed jaalx swohxtiahx **idira**
 Ahxmed six hour.LOC run.PLR.WP
 ‘Ahxmed ran for six hours (nonstop).’ (durative)
 (Yu, 2003, 299, ex 18)
- (6) yâraa sun **rur~ruucɗee** (Hausa)
 children 3PL.PF RED-be.confused
 The children were very confused (beyond control, alarmed). (intensive)
 (Součková and Buba, 2008, 137, ex 6b)

As a consequence, studies of verbal markers of event plurality generally adopt a wider definition of event plurality as *increase* in the verbal domain, including iteratives and habituals but also duratives, intensives and distributives (see e.g. Dressler 1968, 62-65, Cusic 1981, 64, Xrakovskij (1997a, 7).³

This wider view of verbal plurality also underlies the definition of the term PLURACTIONAL, coined by Newman for Hausa:

- (7) [...] “pluractional” provided a cover term to bring together the morphologically similar forms in the languages of the world that had previously been described as intensive, iterative, habitual, durative, frequentative, distributive, and plural action [...] (Newman, 2012, 188).

³Cusic (1981, 75) points out that this view is already found in de Jong (1917:310) who suggests that “reduplication defines a semantic category of INCREASE which has as sub-categories: plurality, distributivity, continuity, repetition, customary action, intensiveness and superlative degree”. (de Jong 1917:310)

Markers of verbal plurality can appear with more complex markers such as multiple causation and multiple displacement (see [Mithun 1988](#), 217 for Native American languages, [Golovko \(1997\)](#) for multiple causation markers in Aleut). [Golovko \(1997\)](#) shows that in Aleut causativity markers also mark plurality of situations:

- (8) Causative markers in Aleut (Eskimo–Aleut) ([Golovko, 1997](#))
- a. **-dgu-** causality and distributivity,
 - b. **-ya-** causality and multiplicativity,
 - c. **-t-** one causative situation.

The following discussion of verbal plurality markers focuses on markers with iterative, durative, distributive and intensive readings, leaving causatives marking event multiplicity aside.

2.2 Event plurality and participant plurality

Studies of verbal plurality generally include event number (9) and participant number (10) (see e.g. [Corbett \(2000, 246\)](#), [Collins \(2001\)](#), [Veselinova \(2008\)](#)).

Event number is illustrated by the Central Pomo examples in (9). As the contrast between (9)-b and (9)-c shows, the presence of a plural argument is not sufficient to trigger a plural marked form of the verb in central Pomo: the plural marked form of the verb requires a plurality of events (9)-c.

- (9) Event number
Central Pomo *ta* ([Mithun, 1988](#), 225, ex 31/32)
- a. [?]aa múutu manáač'
I him pay.semelfactive
I paid him.
 - b. [?]aa múutuyal manáač'
I them pay.semelfactive
I paid them. (The work crew received a single check jointly).
 - c. [?]aa múutuyaw manáataaytaw
I them pay.multiple event multiple displacement aspect

I paid them. (Each worker was paid individually).

In contrast, the descriptions of markers of participant number as in Shuswap (10) suggest that the presence of a plural argument is the determining factor for the choice of plural-marked verb-form.

(10) Participant number

Shuswap (Gibson, 1973, 52, apud Mithun 1988, 213, ex 3/4

'sit/dwell'	ʔém	'(one to) sit'	łéq	'(group to) sit'
'kill'	púl	'kill one'	'ik ^w	'kill several'

In Durie (1986, 355) "verbal number" is understood as marking of the verb for the number of an argument, i.e. as participant number on a par with (10). Durie provides a range of diagnostics that distinguish verbal marking for participant number from syntactic agreement in number (see 5.2 for discussion).

Participant number and event number are in principle independent of each other. As Wood (2007, 7) points out, in general, a plural argument may indicate event plurality but need not do so and consequently marking for participant plurality does not necessarily imply an interpretation involving event plurality. The dissociation between plural argument and plural event is particularly clear with verbal collective markers found in Native American languages. As Mithun (1999, 88) stresses, collective and distributive markers both imply a multiplicity as they specify ways of viewing the members of a group. Collective markers present the members of a group as a cohesive unit, as exemplified in (11) with the collective affix *-rrat(i)-* in Kalaallisut (Trondhjem, 2016). In particular, Trondhjem observes that "When [the collective affix *-rrat(i)/-t(i)-* is] added to telic verb stems, it seems that the only suitable adverb of time is a punctual one as *ataatsikkut* 'at the same time.'"

- (11) Oqaloreemat inuit nikuerrapput. (Kalaallisut)
 oqalo-reer-mat inuit nikue-**rra**-pput
 speak-PERF-CAUS.3SG people.ABS.PL stand.up-**crowd**-IND.3PL
 'When she finished her speech, they all stand up.' (Trondhjem, 2016, 135, ex 4)

Furthermore, there are languages where morphological exponents for participant number and for event number can combine: [Comfort \(2014, 153, ex 33-36\)](#) shows that in Uncu (Kordofanian Nubian) the marker for participant plural *-er-* can combine with the iterative marking *-k-* (13).

(12) Uncu (Kordofan Nubian) ([Comfort, 2014, 153, ex 33-36](#))

SUBJ	OBJ	‘poke’	‘poke (repeatedly)’
SG	SG	ʃĕrg-ĕé	ʃĕrk-ĕé
SG	PL	ʃĕrg-ĕr-ĕé	ʃĕrk-ĕr-ĕé

simplex V: ʃĕrg vs. iterative V: ʃĕrk
-er-: argument plurality marking

While participant number and event number are conceptually distinct, for many verbal plurality markers the two cannot be separated clearly. In particular, there are markers of verbal plurality that cannot be used with a purely iterative reading with singular count arguments. In Hausa the example of a verbal plural marked verb with singular count arguments in (13)-a is ill-formed: a purely iterative reading is not available. On the other hand, example (14) illustrates that a plural argument with a verbal plural marked verb is not felicitous in a context involving a single collective event [Součková \(2011, 96\)](#). The verbal plurality marked verb form in Hausa therefore imposes conditions on both participant and event plurality, namely (i) that one of the arguments in the clause be plural and (ii) that multiple events be distinguished (13)-b/c (see ch 29 for details on verbal plurality marking in Chadic).

- (13) a. *Màĩro taa ɗaɗ~ɗàgà kujèerâĩ (Hausa)
Mairo 3SG.F.PF RED-lift **chair.the**
 not: M. lifted the chair repeatedly.
- b. Yammaatân sun ɗaɗ~ɗàgà kujèerâĩ
girls.the 3PL.PF RED-lift **chair.the**
 ‘The girls lifted the chair’ (most natural interpretation: one by one)
- c. Màĩro taa ɗaɗ~ɓàgà kùjèerûn
Mairo 3SG.F.PF RED-lift **chairs.the**
 ‘Mairo lifted the chairs’ (most natural interpretation: one by one)

(Součková, 2011, 95, ex. 49a-c)

- (14) Naa bab~baa sù littàttàfai (Hausa)
1SG.PF RED-give them books
'I gave them some books'
N.B. #if it is a collective gift/ ok: several separate events of giving
(Součková, 2011, 96, 52b)

The data in this section shows that participant plurality and event plurality can in principle be marked separately, but that verbal plurality markers may show complex interactions between participant and event plurality. While some studies of verbal plurality group participant and event plurality together (Dressler 1968, Corbett 2000, Collins 2001, Veselinova 2008) other studies treat participant number separately from event plurality (Wood 2007, 44-51, Součková 2011, 46).

2.3 Different sources of discrete multiplicity

Interpretations involving a multiplicity of elements can arise from a range of different sources, illustrated in (15) for the nominal domain.

- (15) Some sources of multiplicity interpretations in the nominal domain
- a. inflectional plurals (*dog-s*)
 - b. distributive plurals (e.g. in Native American languages Mithun 1988)
 - c. collective nouns (*family, team, committee, swarm*)
 - d. cardinality expressions (*three/ several dogs*)
 - e. quantifiers (*many dogs*)
 - f. expressions of diversity (*a different dog, different dogs*)
 - g. additive expressions (*another dog, more dogs*)
 - h. distributive expressions (*each dog, dog by dog*)
 - i. degree expressions + count predicate (*a lot of dogs*)
 - j. intensional plurality (generic nominals)

As verbal plurality is generally defined in terms of multiplicity of discrete events, the diversity of verbal plurality markers can at least in part be attributed to the range of sources of multiplicity that also exists in the event domain.

Several proposals in the literature draw analogies between verbal plurality markers and collective nouns. Laca (2006) proposes to analyse the verbal plurality expressed by the aspectual periphrasis *ir+gerund* in Spanish as analogous to the group-denotation of collective nouns such as *family*, while Henderson (2017, 162) proposes that event-internal verbal plurality markers in Kaqchikel should be analysed as swarm-nouns, a subclass of collective nouns like *swarm*, *grove* that have an additional requirement of spatio-temporal proximity as part of their lexical semantics. For three types of verbal plurality markers in Maaka, Coly and Storch (2017, 69) propose an analysis in analogy to three types of nominal plural marking in Maaka.

Součková and Buba (2008, 135) suggest that the diversity condition on pluractionals in Hausa resembles the diversity conditions on distributive plurals in Native American languages.

These proposals draw an analogy between event pluralities marked by verbal plurality markers and noun-types and noun-forms that are associated with plurality of individuals in the nominal domain. The following briefly presents three sources of verbal multiplicity that show parallels to nominal pluralities that arise with additive, distributive and degree expressions.

Additive verbal markers are generally included in studies of verbal plurality markers, as the interpretation of examples like the following obligatorily involves more than one event.⁴

- (16) a. Jean reread this book. (verbal prefix)
 b. María **volvió** a leer este libro. (Sp)
 M. return.3SG.PFV.PST to read this book.
 M. read this book again. (verbal periphrasis)

Examples of additive markers studied within the wider context of verbal plurality

⁴An exception is Van Geenhoven (2005, 115, ex 28). In her study of West Greenlandic verbal plurality markers this author explicitly excludes the additive affix *-qqip-* and identifies it as an event presupposing verbal affix:

- (i) apaqqippoq (West Greenlandic)
 api-qqip-puq
 snow-again-IND[-TR]3SG
 It snowed again. (example from Fortescue 1984, 284)

marking include the duplicative marker *-keʔt-* in Zoque (Dressler (1968, 63-4, § 30) citing Wonderly (1951)) and the repetitive marker *-pa* in Cuzco Quechua (Faller, 2012).

- (17) a. Repetitive affix *-keʔt-* in Zoque (Wonderly, 1951, 157-8)
- | | | |
|----------|------------------|---------------------------|
| witkeʔtu | "he also walked" | (V1 + 551 + 561); (Zoque) |
| kengeʔtu | "he also looked" | (V1 + 551 + 561); |
- b. Repetitive affix *-pa* in Cusco Quechua (Faller, 2012, 61-62)
- Pedru pampa-ta picha-pa-n. (Cusco Quechua)
 Pedro ground-ACC sweep-REP-3
 'Pedro sweeps again.' (Faller, 2012, 62,ex15b)

However, as pointed out for additive adverbials by Tovená and Donazzan (2008), the event multiplicity involved in the interpretation of additive markers is a mixed event plurality consisting of an **asserted** event and one or more **presupposed** events (Tovená and Donazzan, 2008, 4). In fact, while their interpretation involves more than one event, additive markers do not assert an event multiplicity, as evidenced by the fact that they admit modification by adverbs restricting the event cardinality to one like *once/only once* in (18).

- (18) a. Jean reread this book **once**.
- b. María **volvió** a leer este libro **una sola vez**. (Sp)
 M. return.3SG.PFV.PST to read this book one only time.
 M. read this book again **once**.

These observations support an analysis of additive verbal plurality markers as a subclass of verbal plurality markers with its own distinctive properties.⁵

Distributive verbal markers Like additive verbal markers, distributive verbal markers are generally included in studies of verbal plurality (Dressler, 1968; Cusic, 1981). With distributive markers, the distribution over parts of a plural argument

⁵Note that additive verbal markers are included in the realm of verbal plurality markers as *verbal plurality* is a descriptive cover term for verbal forms whose interpretation involves more than one event. In contrast, in the nominal and adverbial domain additive expressions like *another N*, *more N* and *too*, *again* are not considered markers of plurality.

identifies subevents by a mapping between sub-events and the parts of the plural argument:

- (19) a. Errortat maniorarpai. (Kalaallisut)
 errortat mani-orar-pai
 laundry.ABS.PL hang.up-one.by.one-IND.3SG.3PL
 ‘She hangs up the laundry (one by one).’
- b. Naasut naajorarput.
 naasut naa-jorar-put
 flower.ABS.PL grow-one.by.one-IND.3PL
 ‘The flowers grow up one by one.’ (Trondhjem, 2016, 137, ex14/15)

As Wood (2007, 9) points out, distributive markers clearly link argument plurality to event plurality. Distributive markers differ from other verbal plurality markers, however, in that they lack a purely iterative or repetitive reading.

Degree expressions For a third group of verbal plurality markers, parallels with multiplicity interpretations induced by degree expressions have been observed.

It has been argued in detail that the distinction between count and mass familiar from the nominal domain is also relevant in the event domain (Mourelatos, 1978; Bach, 1986; Krifka, 1986).

- (20) Count-mass distinction in the event domain
- a. Activities (*sleep, walk*) → **mass** nouns
- b. Accomplishments/ achievements (*build a house, recognize*)
 → **count** nouns

As shown in Doetjes (2008), degree modification has similar effects in the nominal and in the verbal domain: with count predicates degree expressions like *a lot* give rise to a multiplicity interpretation (21), while with mass predicates a quantity interpretation obtains (22) (see ch 4 on Number and quantity expressions for discussion).

- (21) Count predicate: multiplicity interpretation
- a. Sylvia goes to the movies **a lot**. → many visits
- b. **a lot of** horses → many horses

(22) Mass predicate: quantity interpretation

- a. John slept **a lot**.
- b. **a lot of** soup

Cabredo Hofherr (2012) proposes to analyse habitual pluractionality as analogous to a modalized quantity expression, drawing a parallel between event plurality and nominal quantity as expressed by French *beaucoup de N* "a lot of N". Given the parallels observed between lexical aspect and countability, verbal plurality markers that behave like degree expressions are expected to interact with the lexical aspect of the verb, yielding multiplicity readings with verbal count predicates.

This is the case of verbal plurality markers in Chechen (Yu, 2003) and Niuean (Abdolhosseini et al., 2002) for which the authors explicitly note a correlation between the lexical aspect of the base predicate and the reading of the pluractional verb. Yu (2003, 293) shows for Chechen that the reading of the pluractional verb can be predicted from the event type of the base predicate: predicates with clear endpoints like achievements and accomplishments give rise to frequentative readings (23)-a while the pluractional form of activities and states has a durative reading (23)-b.

(23) a. **Frequentative** reading: predicates with clear endpoints

aftobas nouq'ahx siicira (Chechen)
 bus road.ADV stop.PLR.WP

The bus stopped along the road repeatedly. (Yu, 2003, 307, ex36)

b. **Durative** reading: activities

Ahxmed jaalx swohxtiahx **idira** / ***vedira**.
 Ahxmed six hour.LOC run.PLR.WP / V.run.WP

Ahxmed ran for six hours (non-stop). (Yu, 2003, 299, ex18)

Wood (2007, 213-5) provides further evidence that in Chechen the interpretation of verbal plural marked forms correlates with a difference in telicity. She observes that the definiteness of the object - that is known to influence lexical aspect (Verkuyl, 1972, and many studies since) - has an impact on the interpretation of the verbs marked for verbal plurality. With a bare plural object the VP is interpreted as atelic

and the verbal plural marked verb has a durative reading (24). With a definite plural object the VP is interpreted as telic and a frequentative reading arises (25) (see section 4.2 for an additional difference between bare plural *eesharsh* "songs" and demonstrative plural *hara eesharsh* "these songs" with respect to distributive dependencies between arguments and event pluralities).

(24) eekha swohxtiahx maliikas eesharsh **liiqira**. (Chechen)
 half hour.LOC Maliika.ERG song.PL sing.PLR.WP
 Malika sang songs for half an hour.
 (Yu, 2003, 297, ex 13a)

(25) As **hara** eeshar / **hara** eesharsh jux-juxa **liiqira**.
 1SG.ERG DEM song / DEM song.PL again.and.again sing.PRL.WP
 (Chechen)

I sing this song / these songs **again and again**.

(Wood, 2007, 215, exs 22/23)

In summary, there is evidence that verbal plurality markers can express event pluralities that share properties with different sources of multiplicity interpretations such as collective nouns, additive expressions and quantity expressions combined with count predicates. The different sources of the multiplicity interpretation found with verbal plurality markers are one factor contributing to the semantic diversity of verbal plurality phenomena cross-linguistically.

2.4 Complex events and event multiplicities

In order to analyse a complex event as a multiple event, the complex event has to be decomposed into sub-events. Decomposing complex events therefore inherits the notorious difficulties surrounding the identification of singular events.⁶ Consider the events described by expressions like (26). Arguably, the events in the denotation of these predicates are complex in that they entail a number of tasks that have to be

⁶For philosophical difficulties in identifying even events that seem simplex events see e.g. Davidson (1969). For a discussion of the issues surrounding the individuation of linguistically relevant events see Toven and Donazzan (2017); Truswell (2019). See Filip (2017) for a discussion of perfective aspect and the individuation of single events.

performed.

- (26)
- a. organise a party
 - b. bake a cake
 - c. travel to India

The possible decompositions of complex events into parts is only one aspect of the analysis of complex events. In a second step we have to establish which decompositions of a complex event are accessible given a particular event-description. With respect to the accessibility of sub-parts of a complex event, the parts made salient by an event description like *take ten steps* differ from the parts associated with the event description *walk 5m*. The accessibility of parts of a complex event in the denotation of an event description parallels the accessibility of individuals given the denotation of nominal expressions such as *trees* as compared with *forest* (see this volume ch 2 Semantics of number for the semantic analyses proposed for plurals and group-nouns, ch 12 Collectives for a discussion of collective nouns).

For event-descriptions, plural arguments and adverbial expressions provide explicit dimensions for the decomposition of a complex event. The three examples in (27) can be extensionally equivalent in the given context. However, the eventuality descriptions in (27)-b/c provide a plural linguistic expression that can plausibly be used to make subevents of the larger event salient. In (27)-b the individuals making up the plural object *three chapters* provide a salient subdivision into three events of reading one chapter, while in (27)-c the adverbial expression *over two afternoons* supplies two temporal intervals that support a division of the larger event into two (possibly still complex) subevents that are identified by their temporal traces included in two afternoons.

- (27) Context: A student reading a book with three chapters over two days.
- a. The student read the book.
 - b. The student read **three chapters** of the book.
 e_1 = The student read chapter 1, e_2 = The student read chapter 2, e_3 =
The student read chapter 3
 - c. The student read the book **over two afternoons**.

- e₁= The student read on afternoon 1,
 e₂= The student read on afternoon 2.

Examples (27)-b/c show that the identification of sub-events can depend on the separation criteria that distinguish between events: correspondence with atoms making up a plural argument in (27)-b⁷ or correspondence with two time intervals in (27)-c (see section 3 for a discussion of the restrictions on separation criteria between sub-events imposed by different verbal plurality markers). To establish whether an eventuality description denotes an event multiplicity in the strict sense, it has to be established whether the complex event in the denotation of the predicate can be decomposed into parts that should themselves be analysed as events in the language. In the context of verbal plurality, Cusic (1981, 78-9) addresses the question of the event status of the parts of complex events by proposing a distinction between EVENT-INTERNAL and EVENT-EXTERNAL plurality.⁸ According to Cusic's definition, event-external pluralities are **pluralities of events** that could be distributed (in time, space or over an argument). An event-internal plurality, on the other hand, is a **plurality of identical phases within a single event** that cannot be distributed over different occasions as exemplified by English verbs such as *wriggle*. In this view, the phases of an event-internal plurality are not events themselves and are not linguistically accessible to distribution over occasions.

- (28) a. **Event-internal plurality (= repetitive action)**
 (i) plurality of phases
 (ii) 1 event
 (iii) internal to a single occasion
 (iv) Examples: *flutter, wiggle, tickle*
 b. **Event external plurality (= repeated action)**
 (i) plurality of events

⁷For more complex cases of individuation of events and plural objects see Krifka (1990) on event-related readings of examples such as *Four thousand ships passed through the lock*. As Krifka observes, event-related readings count events of ships passing the lock and the same ship may be involved in more than one event so that fewer than 4000 ships are associated with the events described by this sentence.

⁸The event-internal/event-external distinction corresponds to the difference between **multiplicative** vs. **iterative** mode of action made in Xrakovskij (1997a, 27).

- (ii) potentially distributable (but not necessarily distributed) over different occasions
- (iii) Examples: *sing a song again and again*

According to the definition of event-external plurality the sub-events in the complex event are not necessarily distributed over occasions but only potentially distributable. This raises the recurrent question in the literature on verbal plurality markers of how to distinguish eventuality descriptions that denote non-distributed but distributable instances of event-external plurality from those eventuality descriptions that denote event-internal plurality made up of phases that are non-distributable.

Cusic does not view the distinction between event-internal and event-external plurality as a distinction between verbal plurality markers but as a distinction between different situations/ scenarios of events with multiple parts (Cusic, 1981, 70). In the literature on verbal plurality it has been pointed out, however, that certain verbal plurality markers are limited to event-internal readings (see Henderson (2017) for discussion and references).

A class of verbs that have been observed to have an affinity with event-internal verbal plurality marking cross-linguistically are predicates that describe events with temporally connected identical parts such as *cough*, *knock*, *dig*, *blink* in their activity reading. (Wood, 2007, 75) notes that repetitions of semelfactive verb-bases are often interpreted as taking place on a single occasion as illustrated in (29).

(29) Yup'ik %*ur*-postbase 'do purposely by several actions'

alleg	'to tear'	allguraa	'he is tearing it up'
kaleg-	'to brush against'	kalguraa	'he is strumming it'

(Jacobson 1984, 581 cited in Wood 2007, 75, ex 34).

Many languages have verbs that have the form of a stem combining with a verbal plurality marker but do not have a basic stem as counterpart (FROZEN PLURACTIONALS, see Newman 2012). These verbs that are intrinsically marked for verbal plurality are also often associated with event-internal plurality: the parts of the event are necessarily limited to a single occasion as illustrated in (30).

(30) Margi (Chadic) (Hoffmann 1963 cited in Newman 2012 ex 4a)

basic stem	verbal plural stem	
pəhlə 'break (e.g. a bottle)'	pəpəhlə	'smash'
-/-	tətəl	'scatter (intr.)'
-/-	ŋəŋəðə	'shake'
-/-	ŋuŋuni	'murmur'

As lexicalisation as a semelfactive and the presence of relevant verbal plurality markers are language-specific properties, the analysis of complex events as event-internal plurality has to take into account the lexicalisation patterns in a given language. A particularly clear example is given in Schultze-Berndt (2012, 30-31) who argues that while the English verbs *swim* and *drink* are lexicalised as activities, the stems of the translational equivalents in Jaminjung (non-Pama-Nyungan language of the Mirndi family, Australia) are semelfactive, lexicalising single swimming strokes for Jaminjung *liwu* and a single, bounded event of taking in liquid and swallowing it for Jaminjung *burlug*. As a consequence the activity reading of the Jaminjung verbs *liwu* and *burlug* requires marking by the verbal plural morpheme *mayan* on the stem:

(31) Janyungbari buliki burlug = **mayan** ga-yu gugu. (Jaminjung)
 another cow UV.drink = ASP[VPL] 3SG-IV.be.PRS water
 'The other cow is drinking water.' (Schultze-Berndt, 2012, 9, ex. 2a)

The Jaminjung example shows that whether an event is represented linguistically as a complex or a simplex event depends on the lexicalisation patterns and grammatical properties of a given language.

In summary, verbal plurality markers vary with respect to the readings they allow (some markers permitting durative and intensive readings) and with respect to the obligatory presence of nominal plural arguments. In addition, the parts of the complex events in the denotation of an eventuality-description vary with respect to their autonomy: in cases of event-internal plurality the parts of the complex event are limited to a single occasion while in cases of event-external plurality the complex event is decomposed into sub-events that can be distributed over separate occasions.

3 Verbal plurality: separation and similarity conditions

The complex events associated with verbal plurality marker are restricted by the interaction of two types of conditions making opposing demands. **Separation conditions** associated with the verbal plurality markers specify which sub-events are sufficiently **distinct** to be identifiable as different events. As we have seen sub-events of complex events can be identified by different separation criteria, such as distribution over plural arguments, times or locations. At the same time, verbal plurality markers impose **similarity conditions** that specify the conditions that sub-events have to fulfill to count as sufficiently **similar** to be members of a plurality of events of the same type (i.e. satisfying the same event description).

The present section discusses a range of similarity and separation conditions found with verbal plurality markers cross-linguistically.

3.1 Separation conditions

Verbal plurality markers differ with respect to the separation conditions imposed on the sub-events of the event plurality.

Some verbal plurality markers require distribution of the sub-events in time. [Faller \(2012, 72, ex 39\)](#) describes the frequentative suffix *-paya* in Cusco Quechua as requiring temporal gaps between events of the plurality:

- (32) a. Tashi p'unku-ta wisq'a-**paya**-n. (Cusco Quechua)
 Tashi door-ACC close-FREQ-3
 'Tashi closes the door again and again.'
- b. There is a plural closing event with many closing subevents, the plural agent of which is Tashi and the plural theme of which is the door, and any two atomic subevents of Tashi closing the door are **separated in time**. ([Faller, 2012, 72, ex 39a./d.](#))

Other verbal plurality markers, for example the CVC reduplication in Squamish, do not impose temporal gaps: durative readings without interruptions are possible (see also the Chechen verbal plural marking in [\(5\)-c](#))

- (33) chen kw'ech~kw'ach-nexw-as 7alhi slhanay' (Squamish)
 1S.SG RED-look.at-TR(LC)-3ERG DEM woman
 You've been watching her for a while. (continuous) (Bar-el, 2008, 4, ex. 9b)

There are also instances of verbal plurality markers that require distribution of the sub-events in space. Coly and Storch (2017, 62-63) describe verbal plurality marked by reduplication in Maaka (Chadic) as having a strong altrilocal semantic component implying events taking place at different locations:

- (34) kúɔ̀m kúunú ngèngèm-kínà (Maaka)
 pot three fill:REDUP-PTCP
 'filling three similar pots at different places'
 (Coly and Storch, 2017, 63, ex 31)

A further example of a verbal plurality marker imposing different locations for the sub-events is the marker kí-VERB-q||o in ≠Hoan (Khoisan) analysed in Collins (2001). Collins notes that "the basic meaning of kí-VERB-q||o is that there are several different places at which the event or action is sequentially repeated." As (35) shows, this verbal plurality marker is incompatible with the specification of a single location *ci mOun* "in one place":

- (35) Titi 'a- kí- 'am-q||o ki (*ci mOun) (≠Hoan)
 Titi PROG KÍ[PL] eat-around PREP place one
 "can be said if Titi is eating in several different villages in one day, or perhaps at several different places in one village" (Collins, 2001, 467, ex 31a)

The examples (32) and (35) illustrate restrictions on the distribution of the event plurality in time and in space respectively. There are other markers that combine a spatial requirement for events at different points in space with a temporal requirement that the events take place at different points in time. This is found with the ambulative verbal plurality markers for which the action successively affects many points of space (Dressler, 1968), illustrated here with the Purépecha andative marker *-pa* (Aranda Herrera, 2015, 76-93). When employed in a context with movement, *-pa* marks a series of events coinciding with centri-petal movement (36)-a, the marker is undergoing grammaticalisation as a verbal plurality marker and allows

uses marking incremental event plurality without movement for transitive verbs as in (36)-b/c.

- (36) a. Context: Alejandra is driving to Carapan. Every time she goes through a village she sees some dogs.

Alejandra wíchuechani xépasti. (Purépecha)

Alejandra wichu-echa-ni xe-pa-s-ø-ti

Alejandra dog-PL-OBJ see-PLR-PFV-PRS-3IND

'Alejandra sees dogs (along the way).'

 (Aranda Herrera, 2015, 77, ex 19b)

- b. Context: You are sitting next to the fire. Your mother is making tortillas and you are eating them as she is making them.

Ji apaxaka iámindu echujta.

ji a-pa-xa-ø-ka iamindu echujta

1SG eat-PLR-PROG-PRS-1IND all tortilla

'I eat all the tortillas (one after the other as they are being made).'

(no movement implied) (Aranda Herrera, 2015, 80, ex 28)

- c. María apasti manzanani.

María a-pa-s-ø-ti manzana-ni

María eat-PLR-PFV-PRS-3IND apple-OBJ

'María ate the apple incrementally.'

(no movement implied) (Aranda Herrera, 2015, 90, ex 41)

Grammaticalisation can be limited to one type of movement. As Aranda Herrera (2015, 93-96) shows, the Purépecha venitive marker *-pu* allows readings parallel to the andative marker *-pa* in (36-a), but not the equivalents of incrementality without actual directed motion as in (36-b)/(36-c). This contrast shows that interpretations with sub-events ordered along the temporal interval associated with a directed movement path provide a lexical means of individuating sub-events in time that can then be grammaticalised as a verbal plurality marker (see also Laca 2006 for discussion of the incremental periphrasis *ir* "go"+ gerund in Spanish, and Aranda Herrera 2015, 90-93 for a comparison of Purépecha *-pa* and the Spanish *ir* "go"+ gerund periphrasis).

In addition to separation between sub-events in a temporal or a spatial dimension, verbal plurality markers can impose separation between subevents with re-

spect to a plural argument. As Součková (2011, 95) shows the Hausa verbal plurality marked verb cannot be used if the sentence only contains singular count nouns: the event can be spread over parts of a plurality as in (37)-a or over different portions denoted by a mass noun like *ruwaa* 'water' (37)-b.

- (37) a. Yaa kaĩ~késhé fitílûn (Hausa)
 3SG.M.PF RED-kill lights.the
 'He switched off the lights' N.B. #with one switch/ OK: several switches,
 one by one (Součková, 2011, 96, ex. 49a-c)
- b. Ruwaa yaa zuz~zuboo (Hausa)
 water 3SG.PF RED-pour
 'The water was coming/ pouring from different places (or interrupt-
 edly); crucially not in one stream.' (Součková and Buba, 2008, 141)

The preceding examples illustrate particular conditions on the separation of sub-events of the event plurality, be it distribution in time, in space or over a participant. There are other verbal plurality markers that require separation of the subevents without specifying the dimension of separation between events as exemplified by example (38) from Seri (Isolate, Sonora, Mexico). The Seri verbal plurality form *cöy-atooquelam* "they crossed.MULT" is acceptable in contexts with distribution in time only (Context 1) and in contexts with simultaneous events with trajectories moving in different directions starting from different sides of the brook (Context 2).

- (38) Cmajjic quih hant ipzx com imac *cöyatooquelam* .(Seri)
 woman.PL DEF brook DEF 3POS.middle 3IO.RLS.YO.CROSS.MULT.PL
 The women crossed.mult the brook.
 ok: Context 1: The women crossed the brook together, various times. (dis-
 tribution in time)
 ok: Context 2: The women were on different sides of the brook, they all
 crossed at the same time once. (distribution in space)
 (Pasquereau and Cabredo Hofherr, 2019)

Separation conditions over participants, times and locations can be further semantically enriched by diversity requirements between events. For Hausa, for example, Součková (2011, 102) observes that "the pluractional form is not used to refer to

simply plural events but rather to ‘multiple and varied’ events” and that the most natural translations of sentences with verbal plurality marked verbs involve expressions of diversity such as *various, different kinds of* as in examples (1-a) and (39).

- (39) Yaa dad~dàfà àbinci (Hausa)
 3SG.M.PF RED-cook food
 ‘He cooked different kinds of food’ (Součková, 2011, 102, ex 61b)

3.2 Similarity conditions

Verbal plurality markers can also impose conditions that limit the variation between the parts of the complex event.

A clear example of such restrictions is provided by markers of event-internal plurality. With event-internal plurality markers, the parts of the complex event are not accessible to distribution and have to be internal to a single occasion (see section 2.4).

Another example is found with verbal plurality markers that require that each atom making up a plural argument be involved in its own associated event plurality.

This restriction is exemplified by the verbal plurality marker **kí- ‘am-q||o** in †Hoan (Collins, 2001). As (40) shows, **kí- ‘am-q||o** requires that each individual in a plural argument be involved in a plural event of going around eating in different places. A scenario in which each member of the plural subject only participates in a singular eating event is not admissible.

- (40) tsi i kí- ‘am-q||o(†Hoan)
 3PL PAST KI[PL] eat-around
 They ate around.
 (Cannot mean Chris ate in one place, Titi ate in another place and ate in a third place.)
 They are going around (separately or together) eating in different places.
 (Collins, 2001, 467, ex 32)

A further example of a verbal plurality marker that does not seem to allow distribution of single events of the event plurality over participants is the Squamish CVC-

reduplication. In the following examples with plural participants, each participant has to be associated with a plural event of watching the woman or of jumping repeatedly (Bar-el, 2008, 12).⁹

- (41) a. na kw'ech~kw'ach-nexw-as 7alhi slhanay' (Squamish)
 RL RED-look.at-TR(LC)-3ERG DEM woman
 (i) He's been watching her [the woman]
 (ii) They have been watching her [the woman]
 (iii) */? They each saw her once. (Bar-el, 2008, 12, exs 24)
- b. chet xwet~xwit-im
 1S.PL RED-jump-INTR
 (i) We are jumping
 (ii) */? We jumped (Context: we each jumped once)
 (Bar-el, 2008, 12, ex 25)

The examples in (40) and (41) illustrate verbal plurality markers that require a plural event for each individual in the argument plurality. These markers contrast with verbal plurality markers that allow distributive dependencies pairing atomic participants and single events as exemplified in (42). The Chechen verbal plurality marker can combine felicitously with the once-only predicate *lilxira* "explode", that forces an interpretation associating each bomb with a single explosion event.

- (42) Bombanash lilxira (Chechen)
 bomb.PL explode.PL.R.WP
 'The bombs exploded.' (Wood, 2007, 211, ex 17b/c)

Section 4 examines the possible distributive dependencies between the event plurality and plural participants in more detail.

⁹Bar-el (2008, 4) shows independently that CVC-reduplication in Squamish is not a marker of event-internal plurality, as it has habitual readings:

- (i) a. chen t'l'exwenk vs b. chen t'l'ex-t'l'exwenk
 1S.SG win.INTR 1S.SG REDUP-win.INTR
 'I won' 'I'm winning all the time' (Bar-el, 2008, 3, ex 4a/b)

4 Distributive dependencies between event pluralities and other pluralities

Verbal plurality can interact with other sources of plurality in the clause such as plural arguments and plural adverbial expressions.

However, there is clear evidence that the plurality contributed by verbal plurality markers behaves differently from the plurality contributed by quantified arguments such as *each N* and quantified adverbial expressions (section 4.1). This suggests that the distributive dependencies observed between pluralities of events and other pluralities are not a matter of scope interactions but of distributive dependencies between two plurals.

Section 4.2 summarises the evidence showing that the availability of distributive dependencies is dependent on the verbal plurality marker but also the syntactic type of the plural argument.

Section 4.3 reviews the restrictions on exact cardinality expressions found with verbal plurality markers in the light of the syntactic restrictions on distributive dependency readings.

4.1 Verbal plurality is scopeless

There is evidence that the event plurality associated with verbal plurality markers is typically scopeless.

As observed by Van Geenhoven (2004), the plurality of events marked by a verbal plurality marker does not take scope over singular indefinites: overt frequentative markers in West Greenlandic cannot ‘multiply’ singular participants, as in (43)-a, but they can enter into distributive dependencies with a bare plural argument (43)-b.¹⁰

¹⁰Kratzer (2008) proposes an account of the difference between indefinite singulars and plural DPs with iteratives and habituales in English that relies on the lexical cumulativity hypothesis for verbal predicates (following Krifka 1992; Landman 1996) and an additional pluralization of VPs introduced by plural DPs. Kratzer notes that pluractional operators should not be automatically analysed in terms of lexical cumulativity of the base predicate (Kratzer, 2008, FN 25). This conclusion is supported by the facts reported in section 4.2 that for many verbal plurality markers not just plurality of the argument but the specific syntactic type of plural DP constrains the availability of distributive dependency readings between the event plurality and the plural argument.

- (43) a. # Qaartartoq sivisuumik qaaqattaarpoq (West Greenlandic)
 qaartartuq sivisuu-mik qaar-**qattaar**-puq
 bomb.ABS lengthy.INS explode-QATTAAR-IND.[-tr].3SG
- b. Qaartartut sivisuumik qaaqattaarput
 qaartartu-t sivisuu-mik qaar-**qattaar**-put
 bomb.ABS-PL lengthy.INS explode-QATTAAR-IND.[-tr]3PL
 ‘Bombs exploded again and again for a long time.’

(Van Geenhoven, 2004, 147, examples 30/31)

The diagnostic test combines the once-only achievement predicate *explode* with a singular argument. As the singular indefinite cannot be multiplied, the only available reading is the pragmatically anomalous reading under which the same bomb explodes several times. At the same time the combination with a bare plural shows is felicitous (43-b), showing that the West Greenlandic verbal plurality marker QATTAAR allows distribution of single events down to atoms for the bare plural subject.

Van Geenhoven (2004) observes that overt frequentative markers in West Greenlandic Eskimo behave like the frequentative interpretations arising in English when achievements are combined with *for*-adverbials (see Dowty 1979:78-82). In both cases, the verbal plurality marker involved cannot ‘multiply’ singular participants (44)-a, but it can enter into a particular sort of distributive dependency with a plural participant (44)-b.

- (44) Achievements + *for*-adverbials (Dowty 1979: 78-82)
- a. ?Mary discovered **a flea** on her dog for six weeks.
 ‘Mary discovered a flea and she discovered it again and again for six weeks.’ (absurd reading , same flea, "the same" reading) (Van Geenhoven, 2004, 175, ex (100))
- b. Mary discovered **fleas** on her dog for six weeks
 ‘Mary discovered a flea and she discovered another flea and... again and again for six weeks.’ (ok, "another" reading) (Van Geenhoven, 2004, 175, ex (102))

As Van Geenhoven (2004, 183) stresses, with respect to the the multiplication of indefinite singulars, the frequentative interpretation in (44)-a and the interpretation

of the verbal plurality marker in (43-a) contrasts with the plurality introduced by overt frequency adverbs. In (45) the explicit quantificational adverbial *every day* allows the multiplication of the singular argument yielding an interpretation where each event involves a different entity fulfilling the description of the indefinite singular argument avoiding the absurd reading found with (43-a) and (44)-a:

- (45) Mary discovered a flea on her dog **every day** for a month. Van Geenhoven (2004, 151, ex. 42)

The contrast between the quantificational adverbial *every day* and the implicit frequentative in (44)-a and the verbal plurality marker in (43-a) supports the conclusion that verbal plurality markers should not be analysed as abstract equivalents quantificational adverbs.

4.2 Distributive dependencies and syntactic argument type

Van Geenhoven (2005, 114-5) points out, based on examples from English and West Greenlandic, that distributive dependencies are only possible for certain types of syntactic arguments. As (46) illustrates, in English distribution of the event plurality to atoms is only possible for unbounded plurals; cardinalised indefinites like *three/several N* are excluded.

- (46) ?Mary discovered **three/several fleas** on her dog for six weeks.

Laca (2006) refines Van Geenhoven's observations showing that verbal plurality markers can differ in the range of DPs that support cumulative distributive dependencies between the plural argument and the event plurality. The Spanish verbal periphrases *ir/andar+gerund* allow distributive dependencies with plural definites (47)-a, universally quantified DPs (47)-b and coordinations (47)-c:

- (47) a. Definite plurals
El zorro anduvo matando **las gallinas**. (Spanish)
the fox walk.SP killing the hens
'The fox has been killing the hens.' (Laca 2006 ex.22a)

b. Quantified NPs

Juan anda llamando por teléfono a **cada uno de sus amigos**.
 Juan walk.PRS calling by phone to each one of his friends
 'Juan is phoning every one of his friends.' (does not require more than one phone-call per friend) (Laca 2006 ex.23a)

c. Coordinations

Juan se va poniendo **la camisa, la chaqueta y la corbata**.
 Juan REFL go.PRS putting.on the shirt, the jacket, and the tie
 'Juan succesively puts on his shirt, his jacket, and his tie.' (Laca 2006 ex. 23b)

Chechen verbal plurality marked verbs clearly contrasts with Spanish verbal plurality periphrases. Yu (2003) shows that coordinations of singulars do not allow plural-marked verbs (48-a), unlike (47-c).¹¹ If the coordination contains a plural, *beerash* "children.PL" the verbal plural marked verb is chosen.

- (48) a. xyyrana johanna'a elita'a so'a niaxar ullie **dxa-hwettira** /
 morning.ADV **Johanna=& Elita=& 1SG=&** door next.to DX-stand.WP /
***dxa-hittira**
 DX-stand.PLR.WP (Chechen)
 'Johanna, Elita and I stood by the door in the morning.'
 (Yu, 2003, 316, ex 56)
- b. xyyrana beerash'a elita'a so'a niaxar ullie ***dxa-hwettira** /
 morning.ADV child.PL=& Elita=& 1SG=& door next.to DX-stand.WP /
dxa-hittira
 DX-stand.PLR.WP
 'The children, Elita and I stood by the door in the morning.'
 (Yu, 2003, 317, ex 59)

Wood (2007, 216) further observes that demonstrative plurals and plural pronouns in Chechen do not allow distributive dependency readings in contexts where

¹¹Notice that the examples are not entirely parallel: the Spanish example can be viewed as an enumeration of a complex whole *his clothes* while the Chechen example contains a coordination of singular individuals.

the indefinite plurals do. With an unbounded direct object *duqqa zulamxoi* "many criminals" the distinction between a singular and plural-marked verb is reflected in a collective as opposed to a distributed interpretation (cf. (49)-a vs. (49)-b). As Wood shows, when the absolutive refers to a bounded set of criminals *hara zulamxoi* "these criminals" the distinction between a collective and a distributed reading disappears and the plural-marked verb *liicira* can only be interpreted to mean that the same criminals were caught repeatedly (cf. (50)-a vs. (50)-b).

(49) Unbounded plural object → distributive reading with vpl

- a. Sialxana milcuos tykan chohw **duqqa zulamxoi**
yesterday police.officer.ERG store.GEN inside many criminal.PL
leecira (Chechen)
catch.WP
'Yesterday the police officer caught a lot of criminals (together) in the store.'
- b. Sialxana milcuos ghaalaw **duqqa zulamxoi** liicira
yesterday police.officer.ERG city.LOC many criminal.PL catch.PLR.WP
'Yesterday the police officer caught many criminals in the city (separately).' (Wood 2007:216, ex.24a/b)

(50) Bounded plural object → no distributive reading with vpl

- a. Sialxana milcuos **hara zulamxoi** leecira (Chechen)
yesterday police.officer.ERG DEM criminal.PL catch.WP
'Yesterday the police officer caught these criminals (together or separately).'
- b. As **ysh** sialxana liicira
1SG.ERG 3PL.ABS yesterday catch.PLR.WP
'I caught them again and again yesterday.' (Wood 2007:217, ex.25a/b)

The different patterns for Spanish and Chechen are explained in very different terms by the respective authors. While Laca (2006) analyses the event plurality of *andar/ir*+ gerund as groups, drawing an analogy with distribution effects observed for collective nouns (as *family, group*), Yu (2003) and Wood (2007) attribute the effects of argument type to an atelicity requirement associated with the Chechen verbal plurality marker.

Independently of the account for distribution effects with verbal plurality marker in each language, the data discussed in this section show that syntactic argument type of plural arguments has to be taken into account as a factor in the licensing of distributive dependencies.

Notice that in studies of distributive dependencies between argument pluralities and event pluralities marked by verbal plurality markers the examples examined contain plural subjects of intransitives and plural objects of transitives. This echoes a recurrent observation for verbal plurality markers that the choice of the verbal plurality form is associated with argument plurality following an ergative-absolutive pattern correlating with plural subjects of intransitive verbs and plural objects of transitive verbs, (see [Dressler 1968](#), 70, §40, [Cusic 1981](#), 111-23, [Durie 1986](#), 357, [Mithun 1988](#), 214 for North American languages, see [5.2](#) for a verbal plurality marker that does not obey this restriction and [Wood 2007](#), 42 for other examples). From the available studies it is not clear whether the choice of examples following the ergative-absolutive alignment for the study of distributive dependencies is coincidental or whether it reflects a deeper intrinsic limitation on the distributive potential of plural arguments with verbal plurality markers following the ergative-absolutive pattern.

4.3 Event plurality and cardinality expressions

As we have seen, the possibility of having distributive dependencies between the event plurality and the atoms of another plurality varies with the verbal plurality marker and with the syntactic type of the second plurality-denoting expression. In the literature on verbal plurality markers special attention has been given to exact cardinality expressions, as in many languages they are reported to be incompatible with verbal plurality markers ([Dressler 1968](#), 89, §68, [Xrakovskij 1997a](#), [Yu 2003](#), 303). Two types of cardinal expressions are discussed in this context: cardinal arguments and cardinal adverbial expressions

For certain verbal plurality markers a combination with DPs containing a numeral (51)-a-c or a coordination of singulars (51)-d is degraded.

- (51) a. Mutàanee sun fiř~fitoo dàgà gidàajên (??àshĩrin) (Hausa)
 people 3PL.PF RED-come.out from **houses.the (twenty)**
 'People came out of the houses/ ??twenty houses.' (Součková, 2011, 111,
 ex 74b)
- b. **Muitas / # Vinte** pessoas têm morrido no
 many / twenty people have.PRS3PL die.PST.PTCP in+the
 Iraque. (Brazilian Portuguese)
 Iraq
 'A lot of / #twenty people have been dying in Iraq.'
 (Cabredo Hofherr et al., 2010, 82, ex 21a)
- c. Haxaca pac/ *Haxaca quih capxa hacx
 dog.PL INDEF.PL/ dog.PL DEF SBJ.NMLZ.three apart
 yomiihtolca. (Seri)
 RLS.YO.die.MULT.PL
 'Dogs /# three dogs died.' (Pasquereau and Cabredo Hofherr, 2019)
- d. xyyrana johanna'a elita'a so'a niaxar ullie **dxa-hwettira /**
 morning.ADV **Johanna=& Elita=& Isg=&** door next.to DX-stand.WP /
***dxa-hittira**
 DX-stand.PLR.WP (Chechen)
 Johanna, Elita and I stood by the door in the morning.
 (Yu, 2003, 316, ex 56)

In the examples (51), exact cardinality is associated with arguments; restrictions on exact cardinality can also arise with exact cardinality adverbials. Yu (2003, 303, ex27a/b) shows that Chechen prohibits the use of a plural marked verb when the exact number of repetitions is specified by an adverbial, as illustrated by the ungrammaticality of (52)-b. In Seri, the event plurality introduced by the verbal plurality marker does not allow a distributive dependency with cardinal adverbial expressions: the adverbial cannot be interpreted as counting the number of event-repetitions. The only possible interpretation is one in which the frequency adverbial counts occasions on which an event plurality takes place.

- (52) a. adama takhan **yttaza** chai **melira** (Chechen)
 Adam.ERG today ten.times tea drink.WP
 'Adam drank tea ten times today.'

- b. *adama takhan **yttaza** chai **miillira**
 Adam.ERG today ten.times tea drink.PRL.WP
 ‘Adam drank tea ten times today.’ (Yu, 2003, 303,ex27a/b)
- (53) Icatoomec hino coofin tintica Juan quih sahmees
 PON.week 1POSS.in SBJ.NMLZ.happen DEM.AW Juan DEF.FLX orange
 pac ihexl / #ihexelim isnaap yoozøj (Seri)
 INDE.PL INF.buy.SG INF.buy.MULTSG 3POSS:breast RLS.YO.one
 ‘Last week, Juan bought oranges six times. /#Last week, Juan bought oranges six times various times.’
 [SC on MULT form: It’s weird. It sounds like he bought oranges six times various times.] (Cabredo Hofherr et al., 2019, ex 19)

While restrictions on exact cardinality are widely found with verbal plurality markers, there are pluralational markers that are reported to be compatible with exact cardinality expressions.

- (54) Marluriarluni quersortarpoq. (Fortescue 1984, p. 283)
 marlu-riar-lu-ni quirsur-**tar**-puq
 two-do.times-INF-3SG.PROX cough-**repeatedly**-IND.[-tr].3SG
 i. ‘He coughed twice.’
 ii. ‘He repeatedly coughed, each time doing it twice.’
 (Van Geenhoven, 2004, 160, ex 64)
- (55) Nek kwelekw ku nahksemi **wegoych-ok** (Yurok)
 1SG well ART three be-away.at.night.ITR-1SG
 I shall be away three days. (iterative infix <eg>) (Wood, 2007, 188, ex 49a)

The restriction on exact cardinality adverbials can arise from at least two sources. Firstly, some verbal plurality markers yield atelic eventuality descriptions and are therefore incompatible with bounded adverbial expressions such as *three times/several times* (see Van Geenhoven (2004) for West Greenlandic, Yu (2003), Wood (2007) for Chechen).

A second possibility is that pluralities introduced by adverbial frequency expressions are only available for certain syntactic types of DPs, in parallel to restrictions on distributive dependencies depending on the syntactic type of the argument discussed in section 4.2. The restrictions on cardinal arguments and cardinal adverbial

expressions illustrated in (51) and (52) should be examined in the wider context of restrictions on distributive dependencies depending on the syntactic types of plural arguments (*books / three books/ every book*) and adverbial expressions of frequency (*on Sundays / on three Sundays / every Sunday*).

5 The morphology of verbal plurality markers

This section summarises observations regarding the morphological exponents of verbal plurality (section 5.1), diagnostics to distinguish verbal plurality markers from plural agreement morphology (section 5.2) and the role of suppletive forms marking verbal plurality (section 5.3).

5.1 Morphological exponents of verbal plurality

Verbal plurality markers are defined here as markers of event multiplicity that are realized on the verb stem (56) or as verbal periphrases (57). The morphological exponent of verbal plural marking on the stem can be affixal (56)-a, expressed through ablaut (56)-b or by different types of reduplication (56)-c.

(56) a. Affixal marking

X-Ø-chin-ilöj ri kanpana. (Kaqchikel)
 COM-A3SG-ring-**löj** the bell
 ‘The bell rang repeatedly.’ (Henderson, 2012, 47, ex 87)

b. Ablaut

eekha swohxtiahx maliikas eesharsh **liiqira**. (Chechen)
 half hour.LOC Maliika.ERG song.PL **sing.PLR.WP**
 Malika sang songs for half an hour. (sing.SG. **lequira**)
 (Yu, 2003, 297, ex 13a)

c. Reduplications

(i) CVC-reduplication

lha Linda na kw’elh-kw’elh-nexw-as ta stakw (Squamish)
 DET Linda RL RED_{CVC}-spill-TR-3ERG DET water
 Linda spills the water all the time. (ex 3b Bar-el 2008, 3)

(ii) CV reduplication

na nam' ke-kew na7 ta stakw (Squamish)
 RL go RED CV-descend LOC DET water
 He went down and down. (Bar-el, 2008, 15, ex 29)

(57) Verbal periphrasis

les **vivo** **llamando** la atención a los niños (Bogotá Sp)
 3PL.DAT **live-PRS-1SG call-GER** the attention to the children
 'I have to remind the children all the time' (Amaral, 2013, 107, ex 5a)

Marking of pluractional forms can be inherent in the stem or derivationally marked. In Konso (Cushitic), verbs have two forms that Orkaydo (2013) terms the *punctual* and the *pluractional* (see ch 16 on N by N constructions for discussion). The *punctual* and *pluractional* verb forms in Konso are strongly associated with singular and plural arguments respectively (Orkaydo, 2013, 152,154) but can be dissociated from participant plurality to mark event plurality (Orkaydo and Mous, 2017, 228,259). Simple verb stems can be punctual or pluractional and the punctual / pluractional pairs arise through two types of derivations: from the punctual base to the pluractional form and inversely from the pluractional base to the punctual form (Orkaydo, 2013, 153).¹²

(58) Konso

Stem	punctual form		pluractional form	
inherently sg	piʔ-	'to fall (SG)'	pippiʔ-	'to fall:PL'
	toom-	'to hit with fist (SG)'	tottoom-	'to hit with fist:PL'
	kull-	'to enter (SG)'	kukull-	'to enter:PL'
inherently pl	rakk-	'to hang.SG'	rak-	'to hang(PL)'
	tuukk-	'to push.SG'	tuuk-	'to push(PL)'

¹²Parallel patterns of variable directionality between number-related forms are reported for nominal number marking in Nilo-Saharan languages by Dimmendaal (2000). These languages typically have a system with three types of number marking: singulative marking, plural marking and REPLACEMENT MARKING with two suffixes for singular and plural (see Dimmendaal 2000 for discussion and ch 7 on Nominal number morphology for examples).

(Orkaydo and Mous, 2017, 226, ex 1a/2a/b)

(brackets indicate the inherent number of the stem)

In some cases, different markers of verbal plurality can combine (59), yielding HYPER-PLURACTIONALS (see Newman 2012, 199 and references cited there).¹³

(59) Hyper-pluractionals in Hausa (Newman, 2012, 199, ex 5)

BASIC STEM	GLOSS	PLURACTIONAL	HYPER-PLURACTIONAL
máƙàláa	'lodge, stick'	máƙááƙàláa	mámámááƙááƙàláa

As pointed out by Newman (2012), many languages have FROZEN PLURACTIONALS: these are verbs with verbal plurality marking that do not have corresponding basic stems (see also the (30)).

(60) a. English: babble, hobble, gobble, mumble, nibble

b. French (Kihm and Tovená, 2009)

basic stem	verbal plural stem	
vivre 'live'	vivoter	'barely make a living'
-/-	pianoter	'to play around on the piano'

The lack of a basic stem for the frozen pluractionals can arise through the diachronic loss of the simple counterpart (as for the English *nibble*, *babble*). In addition, the French example *pianoter* shows that verbs can be semantically aligned on verbs with an event-internal semantics just by virtue of sharing the same pattern (Kihm and Tovená, 2009): *pianoter* is morphologically a denominal verb derived from *piano* with the epenthetic consonant *-t-* and the verbal suffix *-er*, yielding the ending

¹³A slightly different pattern is found in Konso. Inherently plural stems allow the reduplication pattern deriving the pluractional verb form but pluractionals morphologically derived from inherently singular (punctual) stems cannot undergo another pluractional derivation. Konso

Stem	punctual form	pluractional form	double	pluractional
inherently pl	rakk- 'to hang.SG'	rak- 'to hang.PL'	rarrak-	'to hang.PL'
	tuukk- 'to push.SG'	tuuk- 'to push.PL'	tuttuuk-	to push.PL'

(Orkaydo and Mous, 2017, 226, ex 2a-c)

-oter was therefore never a deverbal suffix on a par with *vivre/vivoter* 'live/ barely make a living'. Given the right semantics, verbs with a denotation corresponding to the activity reading of a semelfactive can be lexicalised with a morphological pattern associated with an event-internal verbal plurality marker.

In many languages, not all verbs show verbal number distinctions (Corbett, 2000, 257). The degree of productivity of verbal plural markers is variable cross-linguistically. In Chechen, for example, 20% of the verbal lexicon are marked for verbal plurality (Yu, 2003, 292), but there are also languages like Konso for which verbal plurality marking is described as completely productive (Orkaydo and Mous, 2017, 225). Furthermore, many languages have more than one marker of verbal plurality; for studies comparing different verbal plurality markers in a single language see e.g. the studies in Xrakovskij (1997b), Collins (2001) on ≠Hoan, Garrett (2001); Wood (2007) on Yurok, Rose (2008) on Emerillon, Henderson (2012) on Kaqchikel Maya, Faller (2012) on Cusco Quechua, and Schneider-Blum (2017) on Tima.

In addition, in many languages verbal plurality marking is not obligatory for event multiplicities, illustrated here by Karitiana. For Karitiana Müller and Sanchez-Mendes (2008) observe that a sentence with a simplex verb is made true by any number of events, while a verb with a reduplicative marker of verbal plurality excludes singular events. (See ch 29 this volume on Verbal plurality in Chadic for similar facts for Hausa). The simplex verb in Karitiana is therefore not a singular verb but a stem unspecified for event number.

- (61) a. Inacio namangat Nadia ka'it (Karitiana)
 Inacio \emptyset -na-mangat- \emptyset Nadia ka'it
 Inacio 3-DECL-lift-NFUT Nadia today
 'Inacio lifted Nadia today (once or more)' singular or plural event
- b. Inacio namangatmangadn Nadia ka'it
 Inacio \emptyset -na-mangat-mangat- \emptyset Nadia ka'it
 Inacio 3-DECL-lift-REDUPL-NFUT Nadia today
 'Inacio lifted Nadia today (more than once)' plural event
 (Müller and Sanchez-Mendes, 2008, 451, ex 32/33)

In languages like Karitiana the simple verb is not a singular verb but rather a stem that is unspecified for event number.

5.2 Verbal plurality markers and plural agreement

As discussed in section 2.2, verbal plurality markers can mark event plurality or participant plurality, i.e. the fact that one argument participating in the event is plural.

Verbs marked for participant plurality show co-variation in the verbal form depending on the number-value of an argument (see ex (10)). As this type of co-variation is a hall-mark of argument-predicate agreement, it is necessary to tell verbal plurality marking apart from syntactic number agreement with plural arguments (Durie 1986, see Corbett 2000, 243-264 for discussion). Durie proposes a range of diagnostics to distinguish verbal number from number agreement with plural arguments.

The first argument to distinguish verbal plurality and argument agreement concerns contexts in which the multiplicity associated with the participant bearing the appropriate semantic role is at odds with the singular morphological number of the syntactic relation-bearing NP. This is illustrated in the Georgian example (62)-c that contains a semantically plural numeral DP *čemi sami megobari* "my three friends" that is grammatically singular in Georgian. In this case number agreement on the verb reflects grammatical number ((62)-a ~ (62)-c) while verbal plurality marking reflects semantic multiplicity ((62)-b~(62)-c), showing that verbal plurality is distinct from plural agreement.

- (62) a. *ivane šemovid-a da daǰd-a* (Georgian)
John enter-3SG and sit:SG-3SG
John entered and sat down. (singular)
- b. *čemi mšobl-eb-i šemovid-nen da dasxd-nen*
my parent-NONSG-NOM enter-3NONSG and sit:NONSG-3NONSG
My parents entered and sat down. (plural)
- c. *čemi sami megobari šemovid-a da dasxd-a*
my three friend-SG-NOM enter-3SG and sit:NONSG-3SG
My three friends entered and sat down. (numeral + NP)
(Aronson 1982, apud Durie 1986, 359)

The second diagnostic for a distinction between verbal number and number agreement relies on syntactic contexts where agreement is typically absent, such as control constructions and imperatives. Chickasaw provides an example of dissociation

between verbal plurality and plural agreement. In Chickasaw, certain verbs have different stems depending on the number of the argument (63)-a. In control constructions (63)-b and in imperatives (63)-c there are no agreement markers on the embedded verb and the imperative, respectively, but the participant number marking marked by the stem pair *malili/tilhaa* "run.SG/run.PL" is preserved.

(63) Chickasaw (Durie, 1986, ex.8-10)

a. Subject agreement

subject agreement	no verbal plural marking		verbal plural marking	
1sg	hilha -li	"I dance"	malili -li	"I run"
1pl	kii- hilha	"we dance"	kii- tilhaa	"we run"

b. Control: subject agreement disappears, verbal number preserved

- (i) **malili** sa-banna
run:SG 1SG-want
 "I want to run"
- (ii) **tilhaa** po-banna
run:NONSG 1NONSG-want
 "we want to run"

c. Imperatives: subject agreement disappears, verbal number preserved

- hilha** Dance! (1 or more people)
- malili** Run! (1 person)
- tilhaa** Run! (more than one person)

While Durie (1986) proposes the diagnostics to distinguish between markers of participant number and plural agreement, these tests carry over to verbal plurality markers that combine participant plurality and event plurality.

Verbal plurality marking tends to follow an ergative-absolutive pattern, tracking the number of the intransitive subject or transitive objects (see Dressler 1968, 70, §40, Cusic 1981, 111-23, Durie 1986, 357, Mithun (1988, 214) for North American languages, see Wood (2007, 42) for discussion). In languages that have nominative-accusative alignment for number agreement, the ergative alignment of verbal plurality marking provides a further contrast between verbal plurality and plural num-

ber agreement.

The ergative alignment of verbal plurality is frequent but not general; exceptions are noted in [Corbett \(2000, 253\)](#), [Wood \(2007, 43\)](#) and [Součková \(2011, 95\)](#). Součková, for example, notes that in Hausa the plural marked verb allows events distributed over plural subjects and objects (13)-b/c, but also over plural indirect objects (64)-a, goals (64)-b and locations (64)-c.

- (64) a. Yaa zuz~zùbaa musù shaayì (Hausa)
 3SG.M.PF RED-pour to.them tea
 ‘He poured tea for them’ (plural indirect object)
- b. Yaa zuz~zùbà shaayì cikin koofunàa
 3SG.M.PF RED-pour tea in cups
 ‘He poured tea into (different) cups’ (plural goal)
- c. Suunansà yaa fĩ~fitoo à wuràaree dàban-dàban
 name.his 3SG.M.PF RED-come.out at places different-different
 ‘His name came up in different places’ (plural location)
 ([Součková, 2011, 95, ex. 50a-c](#))

In sum, there are diagnostics that show that verbal plurality marking tracking participant number is different from grammatical number agreement.

5.3 Verbal plurality markers and suppletion

It is often observed in the literature on verbal plurality that what seem to be number-distinctions on the verb are expressed by stem suppletion ([Durie, 1986](#); [Veselinova, 2008](#)). [Mithun \(1988, 214\)](#) argues that the suppletive verb pairs putatively marking participant number should be analysed as semantically related but not as the result of a suppletive form realising a derivational or inflectional morphological relationship. Mithun’s argument is based on languages that only have a relatively small inventory of pairs marking a distinction between verbs with singular or plural participants. In these languages robust evidence for derivational or inflectional marking of verbal plurality is lacking. The argument does not extend to languages with a larger inventory of verbs displaying morphologically transparent forms marked for verbal plurality with some verbs having suppletive forms that align with plural forms in this paradigm. Uncu (Kordofan Nubian) has participant number marking

by a morpheme *-er-*, with some verbs having suppletive stems instead of the *-er-* marking (Comfort, 2014, 147)

- (65) Uncu (Kordofan Nubian) (Comfort, 2014, 147, Table 1, Table 3)
Participant number marking, imperative forms

		regular V		suppletive V
SUBJ	OBJ	'blow'	'burn'	'eat'
SG	SG	úú b -í	wàʃ-í	kōl -í
PL	SG	úú b -é	wàʃ-é	kōl -é
SG	PL	úú b-ér -í	wàʃ- èr -í	kàm -î
PL	PL	úú b-ér -é	wàʃ- èr -é	kàm -ê

6 Verbal plurality markers and nominal plural

Verbal plurality markers differ from inflectional nominal plural markers in several respects.

Firstly, as discussed in section 2.1, markers of verbal plurality do not mark multiplicity but cover a more general notion of *increase* in the event domain, including duration, progressivity, frequency, repetition, habituality and intensity (Dressler 1968, 62ff, Cusic 1981, 64,75).

Secondly, many verbal plurality markers pattern with derivational morphemes changing the lexical aspect of the base (see Dressler 1968; Cusic 1981; Xrakovskij 1997b). Note that these studies include distributive and spatial properties of the event description in the definition of lexical aspect, in addition to the temporal contours of events that underpin the definitions of lexical aspect in Comrie (1976).

Thirdly, many languages have more than one verbal plurality marker that may apply to the same bases. Several markers of verbal plurality can combine (see Mithun 1988, 217, for Native American languages). Trondhjem (2016, 133) discusses an example from Kalaallisut combining several verbal plurality markers in one form: the iterative affix *-tar-* applies to the semelfactive stem *ikut-* and *-qattaar-* indicates the repetition of the whole situation with the last *-tar-* marking the habitual (66).

- (66) Ikuttaqattaartarpaa. (Kalaallisut)
 ikut-**ta-qattaar-tar**-paa
 hack-REP-REP-HAB-IND.3SG.3SG
 ‘S/he used to hack on it (several times).’ (Trondhjem, 2016, 133, ex 1)

And finally, unlike inflectional nominal plural as in languages like English or Spanish, the multiplicity expressed by verbal plurality markers is limited to vague cardinality. Doetjes (2008) argues that even though the domain of events has a mass/count distinction (Bach, 1986), **exact counting** is not characteristic of the event domain. She points out that the expression of exact cardinality in the event domain needs the support of nominal expressions such as English *times*, Dutch *keer*, French *fois*, Hausa *sàu* "times" or of a cognate object (68-b) (see ch 4 Number and quantity expressions for discussion).

- (67) a. John went to the movies **three times**.
 b. Jean est allé **trois fois** au cinéma (French)
 J. is gone three times to-DET cinema
 c. Jan is **drie keer** naar de bioscoop gegaan (Dutch)
 J. is three times to DET cinema gone
 (Doetjes, 2008, 13, ex 27a/a'/a")
- (68) a. Sun ci jarràbâawaa **sàu** ukù (Hausa)
 they eat exams **time** three
 ‘They passed exams three times’
 b. Taa zàagee shì **zaagì** ukù
 she insult him **insulting** three
 ‘She insulted him three times’ (cognate object + numeral)
 (Doetjes, 2008, 14, ex 28a/b)

These observations suggest that the semantics expressed by verbal plurality markers is not the equivalent of inflectional nominal count-plurals like English *dragons* in the verbal domain. This conclusion converges with the evidence reviewed in this chapter, that verbal plurality markers vary widely in their readings and in the additional semantic content they contribute.

However, in the nominal domain different types of nouns involving a plurality of atoms in their interpretation have been studied, including distributive plurals in

Native American Languages (Mithun, 1999) (see ch 7 Nominal number morphology), pluralities induced by degree expressions (see (21) above) and different types of collectives (see ch 12 Collectives). Furthermore it has been shown that inflectional plurals can have readings with an enriched semantics under certain conditions (*plurals of abundance*, see ch 11 Lexical plurals).

While a narrow analogy with obligatory count plurals on nouns is not plausible for verbal plurality markers, future research has to establish to what extent a given verbal plurality marker may share properties with a different expressions in the nominal domain that involve a plurality of atoms (see (15)).

7 Conclusions

Verbal plurality markers are highly heterogenous cross-linguistically.

As shown by the research summarised in this chapter, the observed variability can be linked to a number of factors.

Firstly, a global definition of verbal plurality as verbal marking of event plurality groups together event multiplicities that arise from a wide range of linguistic expressions. Sources of multiplicity include distributive markers, additive expressions and degree expressions combined with count predicates, each giving rise to different patterns of semantic and syntactic restrictions on the event plurality.

Secondly, the individuation of events can be obtained by different criteria including individuation by participants, temporal traces or locations. Different verbal plurality markers vary with respect to the individuation criteria they require for the events making up the event pluralities they denote.

Finally, verbal plurality markers impose different restrictions on the distributive dependencies they allow between event pluralities and other pluralities. These pluralities can be lexically expressed or contextually inferred, e.g. distribution over implicit locations. For lexical pluralities, the possible distributive dependencies with the event plurality clearly show interactions with the syntactic type of the plural expression.

The evidence reviewed in this chapter supports the conclusion that the wide range of verbal plurality phenomena cannot be analysed as an analogue of inflec-

tional plural marking on nouns. Further research is needed to establish in how far verbal plurality phenomena found cross-linguistically mirror different means of expressing multiplicity in the nominal domain.

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