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Verbal Plurality and Distributivity

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Introduction – event plurality, verbal plurality and distributivity

1. Theoretical issues

The articles collected in this volume deal with different aspects of event plurality in a wide variety of languages (Arabic, Cuzco Quechua, European Portuguese, Karitiana, Modern Hebrew, and Russian).^{*} Before we present the individual papers, we would like to lay out the central issues that underlie much recent research on event plurality.¹

We consider under the general term EVENT PLURALITY any linguistic means of expressing a multiplicity of events, be they verbal markers (*re-read*), adverbials (*twice, often, always, again*), or adnominal markers (*John lived in **different** countries, **each** boy built a canoe, John repaired **several** bicycles*). We use the term VERBAL PLURALITY more narrowly for event plurality marked on the verb. Following the usage in the literature we refer to markers of verbal plurality as PLURACTIONAL MARKERS.

A rough typology of the expressions of event plurality should chart the specific restrictions that markers may impose on the event pluralities they describe. Here, we have singled out restrictions bearing on three different aspects of event plurality: (i) variability among singular events within the event plurality, (ii) restrictions on event pluralities made up of (possibly singular) asserted and presupposed events and (iii) the expression of exact cardinality in the event domain.

The first type of restriction concerns the degree of variability among the singular events within the event plurality: along which dimensions (parti-

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¹ In the glosses we have preserved the glossing in the original sources where possible. The abbreviations used are the following: ABS = absolutive, ACC = accusative, ADV = adverb, ASP = aspect, CL = classifier, DEM = demonstrative, DISTR = distributive morpheme, ERG = ergative, IND = indicative, INS = instrumental, LC = limited control, MOD = modal, PF = perfective, PL = plural, PLR = pluractional, PPRT = past participle, PREP = preposition, PRS = present, PST = past, S = subject, SG = singular, SP = perfective past, RED = reduplication, RL = realis, TR = transitive, TRZ = transitivity, WP = witnessed past (Chechen).

pants, space, time) are the singular events in the event-plurality allowed or required to differ from each other? As we will see, clear requirements on the spatio-temporal distribution of the event-plurality are found with different markers (section 2.1). The conditions restricting the range of relationships between the arguments of the (sub-)events and the event plurality are more intricate as they may depend on the type of argument-DP and on the argument position (section 2.2). Since the distributive behaviour of many verbal plurality markers is typically scopeless, we will highlight the contrasts found with scope-taking expressions as exemplified by adnominal markers and reduplicated numerals (section 2.3).

A second array of restrictions is found with additive markers of event plurality. These are peculiar in that they yield a mixed event plurality resulting from the combination of one (or more) asserted events with one or more presupposed events. As we will see in section 3 the challenge of characterising possible variability between events rears in a different guise here since the presupposed event is construed on the basis of the asserted event, and different additive markers impose different identity conditions on the description of the presupposed event.

The third type of restriction concerns the specification of cardinality. Many pluractional markers are reported to be incompatible with the expression of cardinality of the event plurality they contribute (section 4.1). This incompatibility is unexpected if pluractional markers are seen as the expression of plurality in the verbal domain on a par with inflectional plural number in the nominal domain. For this reason we will place the exact-cardinality restriction in the wider context of similarities and differences observed for plurality in the nominal and in the verbal domain (section 4.2).

2. Event plurality: restrictions on variability among sub-events

Markers of event plurality vary with respect to the conditions they impose on the events making up the event plurality.² Markers of verbal plurality in particular can be differentiated for a number of properties including distribution over participants, places and times as well as causation and multiple displacement (see Mithun 1988b, 217, for North American languages). Here, we

² A single language typically has various means of marking event plurality, with a choice of verbal, adverbial or adnominal expressions. Note that languages may also have more than one marker of verbal plurality; for studies comparing different pluractional markers in a single language see e.g. Collins (2001), Faller (this volume), Garrett (2001), Rose (2008).

will consider examples with single markers that do not have clear additional grammatical meaning such as causation or agency.

For markers that distribute the event plurality the distribution requirements can be of different types: the distribution required for the felicitous use of a marker can be over different individuals, places or times, and possibly over more than one dimension simultaneously. For pluractional markers this can be captured by the formal definition proposed by Lasersohn in his seminal analysis (1995:256).

- $$(1) \quad V\text{-}PA(X) \leftrightarrow \forall e, e' \in X [P(e) \ \& \ \neg K(e) \circ K(e') \ \& \ \text{card}(X) \geq n]$$
- with **K** = temporal trace or spatial trace or participants of the event

One of the crucial ingredients of Lasersohn's concerns the individual events of the plurality: the formula requires these events to fulfill a property *P* that is not necessarily identical to the basic verb *V* that the pluractional marker *PA* attaches to. Lasersohn specifically distinguishes cases where *P* is identical to *V* from cases where *P* is otherwise lexically specified.

In what follows we will first give examples illustrating markers of event plurality that impose spatial or temporal distribution on the individual sub-events of the plurality. We will then turn to examples that include distribution over participants. In terms of Lasersohn's definition, the latter examples show that beyond the basic verb meaning the construction of the property *P* has to take the nominal arguments into account.

2.1 Temporal and spatial distribution requirements

A clear example of a pluractional marker requiring spatial distribution of the event plurality is the complex marker *kí-Verb-q||o* described for ≠Hoan in Collins (2001). Collins gives the meaning of this construction as marking "that there are several different places at which the event or action is sequentially repeated" (Collins 2001, 467). The fact that *kí-Verb-q||o* is incompatible with PPs meaning "in one place" shows that the marker requires that different places be involved (2).

- (2) Titi i- **kí-am-q||o** *(ki ci m⊙un) (≠Hoan)
 Titi PAST ki[pl] eat-around (PREP place one)
 'Titi eats around *(in one place).' (Collins 2001:467, ex 31a)

An example of a marker including temporal distribution is the West Greenlandic pluractional marker *-tar-* "repeatedly" analysed in Van Geenhoven (2004, 2005) as imposing distribution in time with temporal gaps between the individual events:

- (3) Nuka ullaap tungaa tamaat sanioquttarpoq. (West Greenlandic)
 Nuka ullaap-p tunga-a tama-at
 N.ABS morning-ERG direction-SG.SG.ABS all-3SG
 sanioqut-tar-puq
 go.by-**repeatedly**-IND.[-TR].3SG
 ‘Nuka went by repeatedly for the whole morning.’
 (Van Geenhoven 2004: 146, ex 27)

Another clear case of distribution over different times (i.e. distribution in time with temporal gaps) is provided by the present perfect in a Northeastern variety of Brazilian Portuguese that we have argued should be analysed as a pluractional marker (Cabredo Hofherr, Laca & de Carvalho 2010). The requirement that the event-plurality described by the present perfect be separated by temporal gaps is illustrated by the following minimal pair:

- (4) a. Pedro **tem dormido** na varanda o inverno inteiro. (NE-BrPort)
 P. has sleep.PPRT in-the balcony the winter whole
 ‘Pedro has been sleeping on the veranda all winter.’
 b. # O urso **tem dormido** na sua caverna o inverno inteiro.
 The bear has sleep.PPRT in-the his cave the winter whole
 ‘The bear has been sleeping in his cave all winter.’
 (Cabredo Hofherr, Laca & de Carvalho 2010:76)

Markers can also underspecify the dimension of distributivity; in the Hausa example below temporal distribution or spatial distribution are equally possible interpretations, but *lack* of distribution crucially is not:

- (5) ruwaa yaa **zuzzuboo** (Hausa)
 water 3SG.PF **RED-pour**
 ‘The water was coming/ pouring from different places
 (or interruptedly); crucially not in one stream.’
 (Soucková & Buba 2008: 141)

As suggested by the examples in (3) and (4), markers indicating primarily or exclusively temporal distribution are the main area of overlap between the phenomenon of event plurality and the domain of aspect, in particular lexical aspect in the tradition of Vendler (1957) and much subsequent work, or derived situation aspect as identified by Smith (1991). However, as event plurality, and in particular pluractional markers, can also clearly impose patterns in the distribution over locations (see (2)) and over participants (section 2.2), it does not seem to be empirically adequate to conflate the whole array of verbal plurality with lexical aspect, contrary to the general approach taken in the major cross-linguistic surveys on verbal plurality by Dressler (1968), Cusic (1981) and Xrakovskij (1997).

2.2 Distribution over participants

Event plurality markers not only vary with respect to the requirements they impose on the distribution of the event plurality in space and time; they also allow different distributive dependencies between the plural arguments and the event plurality. Some markers require each individual member of a plural argument to participate in a *necessarily plural* event. Other pluractional markers do not impose this condition, permitting situations where each individual is only involved in a *single* event of the type described by the basic verb. In these cases the event plurality can be the distributive key with the plural argument as the distributive share in a dependency between the singular events and their participants.³

The pluractional marking in the Chechen example (6) below illustrates the latter case: The pluractional marking on the verb is possible even though the predicate only applies once to each individual in the subject argument in (6a/c) and the object argument in (6b). This difference appears particularly clearly in the availability of pluractional marking with once-only predicates as in (6b/c) (a bomb can only explode once, a fish is only caught once).

(6) Chechen pluractional marking: once-only predicates possible

- a. ceera~duezalsh takhana duqa hxaalkhie **ghittira**
 their members.of.family today very early wake.up.PLR.WP
 ‘Their family members woke up very early today.’
 (Yu 2003:297)
- b. takhana as duqq’a ch’eerii **liixira**
 today 1SG.ERG many=& fish.PL catch.PLR.WP
 ‘I caught a lot of fish today.’ (each fish is only caught once).
 (Yu 2003:297)
- c. Bombanash **liixira**
 bomb.PL explode.PLR.WP
 ‘The bombs exploded.’ (Wood 2007:211, ex 17b)

As Yu (2003) points out, example (6a) does not have “the expected repeated event reading [...] [the sentence] means that all the family members woke up more or less around the same time” (Yu 2003:297), suggesting that Chechen does not impose temporal distribution in all cases.

³ Choe (1987) proposes that distributive dependencies are relations between to a SORTING KEY and DISTRIBUTED SHARE:

- | | | | | | |
|------|------------|--|----------|------------|-----------|
| (i) | Each child | ate | a sweet. | sweets | per child |
| | KEY | | SHARE | | |
| (ii) | Bombanash | liixira | | explosions | per bomb |
| | bombs | explode.PLR.WP (see 6c in the main text) | | | |
| | KEY | SHARE | | | |

Squamish CVC-reduplication, in contrast, is an example of a pluractional marker that requires each member of the plural argument to participate in a plural event (Bar-el 2008:12).

(7) Squamish CVC-reduplication does not allow once-only predicates

- a. na **kw'ech-kw'ach**-nexw-as 7alhi slhanay'
 RL RED-look.at-TRZ(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, ex 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)

While the Squamish CVC-reduplication shows that a temporally distributed event plurality has to apply to each participant, the ≠Hoan marker *kí-VERB-q||o* provides an example of the same requirement for a spatially distributed event plurality. The interpretation of (8b) shows that spatial distribution of a plurality of events involving different individuals is not enough: the marker imposes the additional restriction that each member of the plural argument has to be involved in a spatially distributed plural event:

- (8) a. *Titi i- **kí-**'am-q||o ki ci m○un (≠Hoan)
 Titi PAST ki[pl]-eat-around PREP place one
- b. tsi i **kí-**'am-q||o
 3PL PAST ki[pl]-eat-around
 'They ate around.'
 (Cannot mean: Chris ate in one place, Titi ate in another place and Leha ate in a third place.)
 They are going around (separately or together) eating in different places. (Collins 2001:467, exs 31a & 32)

The markers of event plurality we have considered here differ in whether they allow distributive dependencies between the plural event and an argument of the main predicate. This plural argument is expressed by different plural DPs in the examples: a possessive plural DP (6a), a plural indefinite (6b), a bare plural (6c) and plural pronouns. To obtain a distributive dependency, however, a plural argument is not necessary; in contexts containing quantificational expressions such as (9) below, *singular* indefinites can give rise to a reading that distributes over a multiplicity of individuals (multiplication of singular indefinites):

- (9) a. Each boy read **a book**.
(different books for each boy)
b. Mary often fixed **a bicycle**.
(different bicycles on each occasion)

Strikingly, it has been observed that many pluractional markers allowing distributive dependencies with plural arguments do not allow multiplication of indefinite singulars -- and more generally of cardinalized indefinites -- in the same position.

As pointed out by Yu (2003) for Chechen, Van Geenhoven (2004) for West Greenlandic, and Laca (2006) for Spanish, pluractional markers that allow distribution over bare plurals (see 10-12a) may bar multiplication of singular indefinites (10-12b).

- (10) a. Qaartartut sivirusumik qaaqattaarput (West Greenlandic)
qaartartu-t sivirusu-mik qaar-**qattaar**-put
bomb.ABS-PL lengthy.INS explode-QATTAR-IND.[-TR]3PL
'Bombs exploded again and again for a long time.'
b. #Qaartartoq sivirusumik qaaqattaarpoq
qaartartuq sivirusu-mik qaar-**qattaar**-puq
bomb.ABS lengthy.INS explode-QATTAR-IND.[-TR].3SG
'#A/the bomb exploded again and again for a long time.'
(Van Geenhoven 2004: ex. 30-31)
- (11) a. Bombanash **lilxira** (Chechen)
bomb.PL explode.PL.R.WP
'The bombs exploded.'
b. #Bomba **lilxira**
bomb.SG explode.PL.R.WP
'The bomb exploded again and again.'
(one bomb produces several explosions)
(Wood 2007:211, ex 17b/c)
- (12) a. El zorro anduvo matando gallinas. (Spanish)
the fox walk.SP killing hens
'The fox has been killing hens.'
b. ??El zorro anduvo matando una gallina.
the fox walk.SP killing a hen
'The fox has been killing a hen.' (same hen)
(Laca 2006, ex 20/21)

As Van Geenhoven (2004) points out, scope-taking elements do not have this restriction: Q-adverbs and quantified arguments can multiply singular indefinites.

- (13) Jim hit a golf ball into the lake for an hour.
 i. There is a golf ball and Jim hit it into the lake repeatedly for an hour.
 ii. # For an hour, Jim hit each time another golf ball into the lake.
- (14) Jim hit a golf ball into the lake **every five minutes** for an hour.
 i. There is a golf ball and for an hour Jim hit it into the lake every five minutes.
 ii. For an hour, Jim hit every five minutes another ball into the lake.
 (Van Geenhoven 2005: exs 40/41)

This suggests that the distributive dependency observed in the examples (10-12a) with bare plurals are not due to scopal interactions but rather comparable to distributive dependencies that obtain between two plural arguments.

Laca (2006) further shows that verbal plurality markers can differ in the range of DPs that support cumulative distributive dependencies (see Landman 2000) with the event-plurality. While the Spanish verbal periphrases *ir/andar*+gerund allow distributive dependencies with definites, universally quantified DPs and coordinations, this is not the case for the Czech distributive prefix *po*- (discussed in Filip 1999):

- (15) 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 successively puts on his shirt, his jacket, and his tie.'
 (Laca 2006 ex. 23b)
- (16) a. ??**Po**-zamykal zásuvku. (Czech)
 DISTR-lock.PAST.3.SG drawer.SG.ACC
 ?? 'He locked a/the drawer [gradually/successively].'
- b. **Po**-zamykal zásuvky.
 DISTR-lock.PAST.3.SG drawer.PL.ACC
 'He locked the drawers [successively, one after the other].'
- c. Quantified NPs
 ??**Po**-zamykal každou zásuvku
 DISTR-lock.PAST.3.SG each/every drawer.SG.ACC
 not: 'He locked each/every drawer gradually/successively.'
 (Filip 1999, ch 5, exs. 63, 9b & 66)

The behaviour of the Spanish periphrases also contrasts with Chechen pluractional verbs. In Chechen a coordination of singulars is not compatible with a pluractional verb (contrasting with (15c) above).

- (17) takhana as c'ii-ch'aara'a jai-ch'aara'a miaq-ch'aara'a
today 1SG.ERG sturgeon=& bullhead=& catfish=&
leecira / ***liicira**
catch.WP/ *catch.PL.RPWP
'Today I caught a sturgeon, a bullhead, and a catfish.'
(Yu 2003: 317 ex. 58)

Furthermore, Wood (2007:216) observes that demonstrative plurals and plural pronouns in Chechen do not allow distributive dependency readings in contexts where the indefinite plural does. Wood notes that when the absolutive refers to a bounded set of criminals the distinction between a distributed and a non-distributed reading disappears ((18a) vs (18b)), and the pluractional *liicira* can only mean that the same criminals were caught repeatedly:⁴

- (18) 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
yesterday police.officer.ERG city.LOC many criminal.PL
liicira
catch.PRL.WP
'Yesterday the police officer caught many criminals in the city
(separately).'
- (19) 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.PRL.WP
'I caught them again and again yesterday.'
(Wood 2007:216, ex.24a/b)

⁴ Wood (2007:216) notes that “the different location expressions in the two sentences were provided spontaneously by a native speaker in order to make the relevant (simulfacitive or pluractional) verb form sound natural and appropriate.”

This again contrasts with the Spanish periphrasis *ir+gerund* that allows distributive dependencies with plural pronouns:

- (20) El bibliotecario recibe los libros, los etiqueta y
 the librarian receives the books, 3PL.ACC labels and
 los va poniendo en los anaqueles.
 (Spanish)
 3PL.ACC go.PRS3SG putting on the shelves.
 ‘The librarian receives the books, labels them and gradually puts them on the shelves.’

The examples discussed here show that the availability of distributive dependencies with pluractional verbs depends on the syntactic type of DP. For all the markers we reviewed, bare plurals allow the dependency, while indefinite singulars block it. For other types of DP, we have seen that there is cross-linguistic variation. Coordinations of singulars and plural pronouns allow distributive dependencies with the pluractional periphrases *ir/andar+ gerund* in Spanish, but not with the pluractional verb in Chechen. Quantified DPs can enter a distributive dependency with *ir/andar+ gerund* in Spanish, but not with the *po*-prefix in Czech.

2.3 Adnominal distributive markers and distributive adverbs

Unlike the pluractional markers discussed in sections 2.1 and 2.2, adnominal distributive markers such as *each* (marking the distributive key) and adnominal distributive expressions such as reduplicated numerals (marking the distributive share) generally allow multiplication of cardinalized indefinite arguments.

- (21) a. **Each** boy read a book. (a different book for each boy)
 b. Romanma da Zurabma **sam-sami**
 Roman.ERG and Zurab.ERG DISTR-three.ABS
 čanta caiyo. (Georgian)
 suitcase. ABS carry.PST.SG
 (i) ‘Roman and Zurab carried three suitcases each/ a piece.’
 (ii) ‘Roman and Zurab carried the suitcases three by three.’
 (Gil 1988)

The fact that multiplication of cardinalized indefinites is possible suggests that these types of distributivity markers -- unlike the pluractional markers discussed before -- are scope-taking expressions.

The question then arises, how the distributivity of scope-taking expressions should be analysed. An influential proposal (originating in work by

Schein 1993) holds that distributivity is uniformly over events. Under this view distributivity over individuals arises from distributivity over events when each event involves a single individual.

This approach accounts well for some markers, such as the reduplicated numerals in Karitiana studied by Müller & Negrão (this volume); as these authors show, Karitiana reduplicated numerals allow readings distributing over individuals as well as over events while consistently behaving as adverbs syntactically. However, as Pereltsvaig (this volume) points out, there are empirical arguments against generalizing a uniform analysis of distributivity over individuals and distributivity over events. Pereltsvaig shows that many languages have two distinct markers for distributivity over individuals and distributivity over events. Furthermore, the marker for event-distributivity tends to be morphologically more complex than the marker for distributivity over individuals. Both observations are unexpected if event-distributivity is taken to be the basic case.

A further case of distributivity is found with distributive readings arising from lexical cumulativity. It is generally assumed that the denotation of plural nouns is cumulative (see Link 1983 and much work since); it has further been proposed that basic verb denotations are also cumulative, including singular and plural events (Krifka 1992, Landman 1996, Kratzer 2008).

Müller and Negrão (this volume) specifically compare distributive readings arising from lexical cumulativity of noun- and verb-denotations and distributivity contributed by reduplicated numerals in Karitiana. They show that while sentences without a reduplicated numeral allow distributive interpretations -- as well as collective and cumulative interpretations -- the reduplicated numerals force a distributed reading distributing over the object.

Among distributive readings at least three cases have to be distinguished: (i) distributivity induced by scope-taking elements such as *each*, (ii) distributivity requirements that are part of the meaning of markers of event plurality (as discussed above) and (iii) distributive readings that arise as a result of cumulative denotations.

2.4 Summary

In the preceding sections we have discussed examples of distributivity requirements imposed by a marker of event plurality.

While there are examples that show a clear effect of distributivity over time, space and participants to the event, it is frequently the case that not all examples in a given language display distributivity along the same dimension. For Chechen pluractional marking, e.g., only a lexically specified subset of verbs allows a distributive reading (Yu 2003:315). As pointed out by

Wood (2007) while some verbs have distributive readings (see (6) above) other verbs such as *ai'ira* “to lift” that would have an equally plausible distributive reading do not allow it:

- (22) a. As jashchik hwala- ai'ira / **ii'ira** (Chechen)
 1SG.ERG box up- lift.WP / lift.PRL.WP
 ‘I lifted the box once /repeatedly.’
 b. As duqa jashchikash hwala- ai'ira / **ii'ira**
 1SG.ERG many box.PL up- lift.WP / lift.PRL.WP
 ‘I lifted many boxes once / repeatedly (either together or
 separately).’ (Wood 2007, 213, ex 19a/b)

There have been proposals to link the variation in the readings of pluractional markers with the Aktionsart of the underlying predicate (e.g. Haji-Abdolhosseini, Massam & Oda 2002 for Niuean, Yu 2003 for Chechen) but the coverage of these proposals remains partial, suggesting that additional factors have to be taken into account in future studies.

Based on the observation that pluractional markers express continuative, frequentative, durative and intensive readings many studies have viewed verbal plurality as a special case of lexical aspect (Dressler 1968, Cusic 1981, Xrakovskij 1997). As we have seen in this section, however, pluractional markers can carry at least two types of additional semantic restrictions that go beyond temporal properties specified by the lexical predicate. First, markers of event plurality can force the distribution of the event-plurality over space and over participants. Secondly, the distributive dependencies available between participants and events can be restricted to plural arguments of particular syntactic types. We therefore conclude that event plurality and more specifically verbal plurality include reference to distributivity in space and over participants and cannot be reduced to the same primitives as lexical aspect if the latter is understood as essentially specifying the temporal contour of the basic eventuality.

3. Mixed event plurality: additive operators

While the examples discussed up until now contained markers asserting a plurality of events, there are other markers that impose a mixed event plurality in the sense that the event-plurality is made up of asserted and presupposed events (see Tovená & Donazzan 2008 for discussion).

Examples of the latter type of event plurality are additive adverbs such as *again* and its equivalents, repetitive affixes such as the prefix *re-* in English

and Romance (Fr. *relire* “reread”) or Cuzco Quechua *-pa* (Faller this volume) and additive nominal expressions such as English *some more N* and Modern Hebrew *od* (Greenberg this volume).

The study of additive markers opens a series of very relevant questions concerning the identity conditions between asserted and presupposed event-types. As shown by Tovena & Donazzan (2008) and Greenberg (this volume) additive markers vary with respect to the events-types that count as possible presupposed events.

As Tovena & Donazzan (2008) show, for the Mandarin Chinese additive adverb *zai* the subject has to be shared by the asserted and the presupposed event parts, while this is not the case for French *encore* or Italian *ancora* or English *again*, with *ancora* and *encore* allowing a “choice between keeping the subject, the direct object and/or other parts”.

- (23) a. #Zhangsan/wo gangcai qu kan le yi xia, (Mandarin)
 Zhangsan/ I just go watch ASP a little
 guo yi huir wo hui **zai** qu.
 pass a moment 1SG MOD ZAI go
 # ‘Zhangsan/ I just went to take a look, I will go again later.’
 b. Marie a mangé trois kiwis et puis **encore** autre chose. (French)
 ‘Mary ate three kiwis and then some more stuff.’
 c. Maria ha appena controllato che il bambino dormisse. (Italian)
 Controllò **ancora** fra cinque minuti e poi andiamo.
 ‘Mary just checked that the baby is asleep. I’ll check again in five minutes and then we can go.’
 (Tovena & Donazzan 2008, exs 35, 36a/b)

Nominal reference further constrains the computation of the presupposed event: referential NPs and rigid designators, for example, force the identity of arguments between the asserted and the presupposed events (Tovena & Donazzan 2008). The following example shows that verbs of consumption are impossible with a referential NP, since a verb of consumption cannot apply to the same referent twice.

- (24) Zhangsan hui **zai** xizao /#chi zhe ge pingguo. (Mandarin)
 Zhangsan MOD ZAI wash/ eat this CL apple
 ‘Zhangsan will rinse/ #eat this apple again.’
 (Tovena & Donazzan 2008, ex. 37)

The nominal additive particle *od* in Modern Hebrew examined by Greenberg (this volume) imposes a much weaker identity condition: subjects, times, locations and even the verbal predicate can differ between the asserted and the presupposed event. Greenberg shows that the variation of the predicate is restricted by a superset condition requiring the two predicates to be instantiati-

ons of a more abstract predicate. The example in (25a) is possible in the given context since “acquiring sheep” is available as a superset predicate, while (25b) is not felicitous since no plausible superset predicate can be constructed:

- (25) kibalti 30 kvasim mi-dod šeli. (Modern Hebrew)
 I-got 30 sheep from-uncle mine
 ‘I got 30 sheep from my uncle.’
 a. be-šavu'a ha-ba ekne **od** 10
 in-week the-next I-will-buy OD 10
 ‘Next week I will buy 10 more.’
 b. # be-šavu'a ha-ba emkor **od** 10
 in-week the-next I-will-sell OD 10
 ‘Next week I will sell 10 more.’
 (Greenberg this volume, exs 20 and 20')

As a mixed plurality is made up of two distinct sets of events, the markers of mixed event plurality can carry additional information concerning the relationship between asserted and presupposed events. Additive markers like *again*, for example, specify a temporal ordering between the presupposed event(s) and the asserted event(s), as the following example due to Kripke shows (cited by Kamp and Roßdeutscher 1994):

- (26) a. We will have pizza on Mary's birthday. So we should not have
 pizza on John's birthday **too**.
 b. We will have pizza on Mary's birthday. So we should not have
 pizza **again** on John's birthday

As Kripke points out, the example (26b) differs from (26a) since using *again* as opposed to *too* supports the inference that John's birthday takes place after Mary's birthday.

4. Exact cardinality and number in the verbal domain

Following current usage, we have referred to event plurality expressed by pluractional markers on verbs as verbal plurality. Since the late 1980s structural parallels between the nominal and the verbal domain have been emphasised (Abney 1987, Grimshaw 1991 and a large literature since). This general approach has also been applied in many studies treating verbal plurality as an instance of a more abstract category NUMBER in the verbal domain.

One of the fundamental questions is therefore whether verbal plurality should be understood as the verbal counterpart to nominal plurality. To begin

with, we will review the restrictions observed on exact cardinality specifically for pluractional markings. These restrictions are unexpected if verbal plurality is the counterpart of number in the nominal domain, and we will therefore consider the cardinality restriction in the wider context of differences between nominal and verbal plurality.

4.1 Restrictions on exact cardinality

As pointed out by Corbett (2000:250) verbal plural markers differ from nominal plural markers in that they often do not express a plurality corresponding to *more than one* but rather a plurality corresponding to *several*. These expressions of event plurality would not be applied to a plurality containing only two or three events; this restriction can be termed the *many*-ness requirement.

There are, however, classes of markers that do not display this limitation. As stressed by Faller (this volume) the repetitive marker *-pa* in Cuzco Quechua can be applied to an event plurality containing just two events; this applies to additive markers like *again* more generally.

Another class of markers that seems to be exempted from the *many*-ness requirement are collective plural markers (Mithun 1999:92). Mithun characterises collective and distributive plural markers in North American languages as follows:

- (27) a. **Collective plural markers:**
Sets of events viewed collectively are typically contiguous in space and time, often implying the spatial proximity of their participants. The participants are typically treated as a unit as well, often with the implication that agents cooperate in concerted action, or that patients are affected or manipulated together as a set.
- b. **Distributive plural markers:**
with distributives members [of a plural participant, PCH&BL] are presented as distinct individuals, separated in space, type or time. Mithun (1999: 92)

Mithun notes that distributive markers would not be used to describe an action affecting only two elements while collective plural markers can appear in this context (Mithun 1999:93).

If we examine the *many*-ness requirement more closely, it becomes apparent that it conflates three distinct requirements: (i) vague amount as expressed by degree expressions (*a lot*), (ii) vague cardinality (*many times*) and (iii) relatively large cardinality (*ten times*).

Compatibility with expressions of exact cardinality provides a test bearing more narrowly on the last of these properties, since exact cardinality expressions can refer to relatively large cardinalities. It has been observed that many markers of event plurality do not combine with expressions of exact cardinality:

- (28) a. ??mutàanee àshirin sun **firfitoo** (Hausa)
 people twenty 3PL.PF RED-come.out
 (Souckova & Buba 2008:135)
- b. adama takhan **yttaza** chai **melira** / ***miillira** (Chechen)
 Adam.ERG today **ten times** tea **drink.WP/ drink.PLR.WP**
 ‘Adam drank tea ten times today.’
 (Yu 2003: 303, exs 27a/b, pluractional V excluded)

In Chechen, the same effect arises with a coordination of singulars. However, if one of the NPs in the NP-conjunction is plural, the pluractional verb is clearly preferred.

- (29) a. xyyrana johanna’a elita’a so’a niaxar ullie
 morning.ADV Johanna=& Elita=& 1SG=& door next to
dxa-hwettira / ***dxa-hittira**
DX-stand.wp/***DX-stand.PLR.WP**
 ‘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
 morning.ADV children.pl=&Elita=& 1SG=& door next to
 ***dxa-hwettira** / **dxa-hittira**
 ***DX-stand.wp**/**DX-stand.PLR.WP**
 ‘The children, Elita, and I stood by the door in the morning.’
 (Yu 2003: 316, ex. 56)

The examples discussed here involve different expressions of exact cardinality: an explicit expression of exact cardinality contained in a noun phrase (28a) or an adverbial expression (28b), and a coordination of singulars (29a), where exact cardinality is an accidental byproduct of the construction. It is an open question whether there is a single restriction on cardinality specification covering coordinated singulars, nouns modified by numerals and cardinality adverbs, or whether these three restrictions can be dissociated for particular markers.

4.2. Plurality in the nominal and verbal domain

We have seen that many markers of event plurality mark a plurality that corresponds to *several/ many events*. This contrasts with nominal plurality that