Verbal plurality and event plurality [1]

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Contents

Introduction

In recent years plural marking on verbs has attracted increased interest.

I will distinguish **event plurality**, i.e. the expression of multiple events, from **verbal plurality**, i.e. the expression of multiple events by markers on the verb (also called **pluractional markers**).

We will first examine what it means for an event to be plural and the different readings that have been treated as event-plurality in the literature.

We will then present the distinctions between different types of verbal plurality that have been proposed, namely

(1)   a. **distributive** and **non-distributive** plurality (Dressler, 1968)

      b. **event-internal** and **event-external plurality** Cusic (1981, 61),
         (see also **multiplicative** vs. **iterative** Xrakovskij 1997b),

      c. **event number** and **participant number** (Corbett, 2000).

Following on from this, we will discuss the boundaries between verbal plurality and other linguistic categories.

(2)   a. Verbal plurality and **argument agreement**

      b. Verbal plurality and **aspect**

      c. Verbal plurality and **distributive markers**

We then examine verbal plurality and event plurality from two complementary angles: (i) the comparison of different pluractional markers, (ii) pluractional markers on the verb compared to other means of expressing event plurality.

First, I will give an overview over case-studies of pluractional marking on the verb (i.e. verbal affixes that indicate the occurrence of a multiplicity of events) and discuss the properties that have been identified across different instances.

(3) a. languages with more than one pluractional marker: Aleut (Golovko, 1997), Émérillon (Rose, 2008), ǂHoan (Collins, 2001), Sandawe (Kießling, 2002), Squamish (Bar-el, 2008), West Greenlandic (Van Geenhoven, 2004, 2005), Yurok (Garrett, 2001; Wood, 2007)

   b. languages with different verb-classes wrt to pluractionality: Papago (Ojeda, 1998)

   c. meanings of pluractionals vs. simplex verbs (Karitiana Müller and Sanchez-Mendez (2008), Hausa (Newman, 1990; Součková and Buba, 2008)

   d. scope properties wrt indefinite singular objects

   e. distribution properties, wrt to bare plurals, definite plurals, quantified NPs *books, the books, all the books/ each book*

In a second step, the properties of verbal plurality expressed by pluractional markers on the verb will be compared to other means of marking event plurality:

(4) a. **affixes indicating repetition** (e.g. *re-* on Romance and English verbs) presupposing a previous event

   b. iteration induced by **imperfective tenses**
       Une bombe explosait   (* toutes les   deux minutes) (French)
       A   bomb   exploded.IMPF (* every (the) two   minutes)

   c. **verbal periphrases**: (e.g. *ir*+gerund/ *andar*+gerund in Spanish, (Laca, 2006), the present perfect in Northeastern Brazilian Portuguese (Cabredo Hofherr, Laca & de Carvalho 2010))

   d. **adverbs and adverbial clauses**:
       i. adverbs presupposing a previous event (e.g. the equivalents of English *again, still*, Italian *ancora*, French *encore* Modern Hebrew *od*, Tovena and Donazzan (2008); Greenberg (to appear)
       ii. "counting adverbs" e.g. English *twice, many times* Doetjes (2008)
       iii. frequency adverbs e.g. English *often* French *souvent* vs degree adverbs e.g. English *a lot* French *beaucoup* (Bach et al. (1995), see Doetjes (2007))
       iv. adverbial clauses expressing frequency e.g. *every time he comes home*

   e. **distributive numerals** (often reduplicated numerals) Gil (1988, 2005)

   f. **plural arguments**: e.g. John built *three houses / many houses.*

We will examine the semantic differences between the different formal means marking event plurality.

(5) **Scope properties of the event plurality:**

    a. As pointed out by Laca (2006), the pluractional markers described by van Geenhoven and Yu only have scope over the verb, while adverbials can have scope over the arguments, too.

    b. pluractional marking on the verb cannot induce a multiplication of a singular argument, while adverbs can (position of the adverb is also a factor):
Three times, John ate an apple ⟶three apples

(6) **Precise cardinality of the event plurality:**

    a. pluractional marking in Greenlandic and Chechen is not compatible with specification of a precise number of times e.g. adverbs such as *three times*,

    b. compare the iterative prefixes in English and French allow this:
Jean a relu le livre trois fois. / John reread the book three times.

(7) **Distributive properties of the event plurality:**

    a. Can the event plurality be distributed over the individuals making up a plural argument, i.e. can each individual of a plural argument be involved only once?

    b. What are the distinctions between plural arguments wrt to this? Bare plurals *houses*, cardinal NPs *three houses*, indefinites *some / many houses*, quantified *every house/ all the houses*

Finally, we will briefly compare event plurality expressed on verbs and by adverbs with plurality expressed in the nominal domain (see Bach (1986), Corbett (2000), Doetjes (2008), Newman (1990)).

The aim is to put the properties observed for pluractional markers on the verb in the wider context of event plurality.

1   The semantic field of verbal plurality

• The basic questions concerning verbal/ event plurality (see Cusic 1981, 64).

(8)   a.   **Question 1:** in what senses may events be said to be plural

     b.   **Question 2:** what is the relation between event plurality and the familiar notions of number developed for nouns and noun phrases

     c.   **Question 3:** what devices do languages use to indicate the plurality of events

• It is notoriously difficult to identify single events since expressions that seem to describe single events may have complex internal phases:[2]

(9)   a.   organise a party

     b.   prepare a cake

     c.   travel to India

• With event plurality we face the inverse question: when are several different sub-events treated as a single complex plural event, when are we dealing with a plurality of single events?

(10)   a.   break a stick in two

     b.   break a stick into small pieces (more than one event operating on one argument)

     c.   repeatedly break a stick (more than one event operating on one or more arguments)

     d.   repeatedly break a stick into small pieces

• Notice that the different types of verbal plurality in (10b/c) can combine (10d).

• In order to address this question systematically, we will first examine the different meanings that have been taken to belong to the semantic field of verbal plurality.

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[2]For philosophical difficulties in identifying even events that seem simplex events see e.g. Davidson (1969).

1.1   Jespersen: plural number in verbs

• O. Jespersen discussed the problem of the "idea of plural number in verbs" side by side with number in nouns (Jespersen, 1924, 210) (see quotes below).

• In his short text, Jespersen identifies several central problems associated with event plurality.

• First: the role of (obligatorily) plural arguments vs event plurality

(11)   a.   "I am not thinking here of what Meyer (IF 24 279ff) terms VERBA PLU-
            RALIA TANTUM, for he speaks of such verbs as German *wimmeln, sich an-
            häufen, sich zusammenrotten, umzingeln* ["swarm, accumulate, to gather
            together (with ill intent), surround", PCH] (English examples would be
            swarm, teem, crowd, assemble, conspire), where the necessary plural idea
            is not in the verb as such, but in the subject, [...]"
       b.   "cases in which it is really the verbal idea itself that is made plural."
       c.   "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.*

• Second: event plurality can pattern with the tense/aspect system, but other mark-
ings seem derivational ("separate verbs")

(12)   a.   "the real plural of the verb is what in some languages is expressed by
            the so-called frequentative or iterative - sometimes a separate "form" of
            the verb which is often classed with the tense or aspect system of the
            language in question"
       b.   Examples of marking on the verb
           i.   repetition indicated in Semitic by strengthening (doubling, length-
               ening) of the middle consonant
          ii.   in Chamorro by a reduplication of the stressed syllable of the verbal
               root (citing K. Wulff, Festschrift Vilh. Thomsen 49)
         iii.   a separate verb indicating repeated or habitual action: Latin *cantito,
               ventito* "sing frequently, come often"
          iv.   In Slav this category of plural or frequentative verbs is well devel-
               oped, e.g. Russ. *strělivat'* "to fire several shots", from *strĕljat'* "to
               fire one shot"
           v.   In English, several verbs in *-er, -le* imply repeated or habitual action
               stutter, patter, chatter, cackle, babble

• Third: The idea of repeated action can be rendered by other linguistic means.

(13)   Examples of other means of rendering repeated action
    a. he talked and talked
    b. he used to talk of his mother
    c. he was in the habit of talking
    d. he would talk of his mother for hours
    e. he talked of his mother over and over again
    f. adverbial groups *now and then*, *here and there*

1.2   Dressler (1968)

• In Dressler (1968) the semantic field of verbal plurality is construed more broadly.

(14)   The maximal model of verb plurality comprises (Dressler (1968, 62-), cited apud Xrakovskij (1997a, 7))
    a. The **iterative** mode of action which include Dressler (1968, 62-65, §29-33)
        i.   the discontinuative (§29 irregular repetition with stressed pauses)
        ii. the repetitive (§30 rather frequent repetition without stressed pauses)
        iii. the duplicative (§30 repeated action performed either by the same or different participants)
        iv. the reversative (§30 backward/home motion - with verbs of motion)
        v.   the frequentative (§31 frequent regular repetition)
        vi. the conative (§32 repetition of attempts at performing an action)
        vii. the alternative (§33, repetition of oppositely directed actions)
    b. The **distributive** modes of action
        i.   the subject distributive (each of many subjects acts separately, actions being performed either simultaneously or not)
        ii. the object distributive (actions performed separately with each of many objects, either simultaneously or not)
        iii. the dispersive (the action takes place in different points of space simultaneously)
        iv. the diversative (each of many subjects acts in a separate direction)
        v.   the ambulative (the action successively affects many points of space)
    c. the **continuative** modes of action
        i.   the usitative (repetition as an ability, inclination or habit)

> ii. the durative (prolonged action)
>
> iii. the continuative (continuation of a previously started action)

d. the **intensive** modes of action, which include

> i. the intensive proper (intensified action)
>
> ii. the attenuative (relaxed action)
>
> iii. the accelerative (quick action)
>
> iv. the exaggerative (excessive action)
>
> v. the pejorative (negatively assessed action)
>
> vi. the asseverative (accentuated action performed in the absence of necessary conditions)

• This view of verbal plurality adds the **continuative** and the **intensive** modes to Jespersen's list.

• This extension is based on the observation that cross-linguistically the same markers can express iterative/ distributive and continuative and intensive meaning.

(15) Hausa pluractional verbs: intensive meaning

  a. yaa / yâraa sun ruuɗèe   (Hausa)
    3sg-pf / children 3pl.pf be.confused
    He was / (the children were) confused.

  b. yâraa sun rur-ruuɗèe
    children 3pl.pf RED-be.confused
    The children were very confused (beyond control, alarmed). (intensive)

  c. * yaa rur-ruuɗèe
    3sg-pf RED-be.confused
    Not: he is very confused. (exs 6a-c from Součková and Buba (2008, 137))

(16) Hausa pluractional verbs: distributive/iterative meaning

  a. mutàanee sun fir-fitoo   (dàgà gidàajensù)
    people 3pl.perf RED-come.out from houses.their
    Many people came out of their houses (one by one or at the same time).
    (ex 2, Součková and Buba 2008, 134)

  b. naa sàs-sàyi lìttàttàfai
    1sg.perf RED-buy books
    I bought many (different) books (on different occasions/ in different bookstores)[3] (ex 4, Součková and Buba 2008, 134)

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[3]Součková and Buba 2008, 135) note that there is a tendency to see diversity as an important component of the meaning of pluractionals, in the ex the books have to be of different kinds or have

• Meanings expressed by the Squamish verbal CVC-reduplicant (Bar-el, 2008)[4]

(17) Squamish verbal CVC-reduplicant: Habitual / always / all the time

    a. lha Linda na kw'elh-nexw-as kwetsi sta<u>k</u>w
       DET Linda RL spill-TR-3ERG   DEM   water
       Linda spilled the water (by accident). (ex 3a, Bar-el 2008, 3)

    b. lha Linda na kw'elh-kw'elh-nexw-as ta   sta<u>k</u>w
       DET Linda RL RED-spill-TR-3ERG   DET water
       Linda spills the water all the time.
       Speaker's comments: "She's always spilling .. it's a (bad) habit ..."
       " you can say that instead of *lhi<u>k</u>'* ["always"] (ex 3b, Bar-el 2008, 3)

    c. na lhelh-lhelh-sp'utl'em
       RL RED-ingest-smoke
       He's a smoker. (ex 5, Bar-el 2008, 3)

(18) Squamish verbal CVC-reduplicant: iteration

    a. chen kwelesh-t ta   sxwi7shn
       1S.SG shoot-tr   DET deer
       (ex 6 a, Bar-el 2008, 3)

    b. chen kwel-kwelesh-t ta   sxwi7shn
       1S.SG RED-shoot-tr   DET deer
       I shot it several times.
       I shot the deer continuously.
       (also possible in the context: I hunt for a job.) (ex b a, Bar-el 2008, 3)

    c. chen 7exw-7exw-i7n
       1S.SG RED-cough-INTR
       You coughed many times.
       Speaker's comments: "almost like *ke<u>x</u>alh* ["many times"] (ex 7, Bar-el 2008, 5)

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to be bought in different bookshops. They point out this is also found in Native American languages Mithun (1988a); Ojeda (1998).

   [4]LC=limited control, LS=lexical suffix, NOM=nominalizer, RL=realis, TR=transitivizer.

(19) Squamish verbal CVC-reduplicant: continuity

    a. chen kw'ach-nexw-as   7alhi slhanay'
        1S.SG look.at-TR(LC)-3ERG DEM woman
        'I saw the woman'

    b. chen kw'ech-kw'ach-nexw-as 7alhi slhanay'
        1S.SG RED-look.at-TR(LC)-3ERG DEM woman
        'You've been watching her for a while' Bar-el 2008, ex9a/b)

(20) Squamish verbal CVC-reduplicant: more than once

    a. chen sa*k*'-an ta   seplin
        1S.SG cut-TR DET bread
        (ex 10 a, Bar-el 2008, 4)

    b. chen sek̲-sa*k*'-an ta   seplin
        1S.SG RED-cut-TR DET bread
        I sliced the bread.
        Context: I cut it more than once or entire loaf is cut up in pieces. (ex 10
        b, Bar-el 2008, 4)

    c. chen lhikw'-shn
        1S.SG hook-foot(LS)
        I tripped (lit. get your foot hooked)

    d. chen lhekw'-lhikw'-shn
        1S.SG RED-hook-foot(LS)
        I tripped (Context: more than one time)
        Speaker's comments: "you were getting tripped constantly" (ex 7, Bar-el
        2008, 5)

1.3   Cusic (1981)

• Cusic (1981) essentially follows Dressler's view of the meanings covered by verbal
plurality.

(21) Cusic (1981, 64): Verbal plurality as a semantic category should be broadly
      construed to include the multiplicity of actions, events, occurrences, occa-
      sions and so on; but in addition, whatever indicates extension or increase,
      whether in time or space, of actions or states of affairs. Thus I will include
      duration, progressivity, frequency, repetition, habituality and even stativ-
      ity within the term; and also nominal plurality, to the extent that this con-
      tributes to the representation of multiple or extended events.

• An event has a spatio-temporal location and participants (mostly but see *it is raining*), so a multiplicity of events can be due to **distribution over plural times, spatial locations and participants**.

(22) a. Distribution over time
          John sang a song, and then he sang the song again, and then again.

      b. Distribution over space
          John planted trees in different places.

      c. Distribution over participants
          John sang two French songs: John sang the Marseillaise and then he sang "Je ne regrette rien".
          John and Mary baked a cake: John baked a cake and Mary baked a cake.

• Apart from distribution over time, space and participants Cusic considers the following readings for verbal plurality:

(23) Plural meanings Cusic (1981, 74)
          a. repetitiveness
          b. repeated occasions and events
          c. persistent consequences
          d. habitual agency
          e. distributed quality
          f. inchoativity
          g. cumulative result
          h. intensity
          i. plurality of sites of action
          j. duration
          k. continuity
          l. conation [5]
          m. distribution
          n. celerativity /retardativity
          o. augmentation
          p. diminution

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[5]Conative = denoting an aspect of verbs in some languages used to indicate the effort of the agent in performing the activity described by the verb.

• Cusic (1981, 75) points out that already de Jong (1917:310) in a study of reduplication suggested that "reduplication defines a semantic category of INCREASE which has as sub-categories: plurality, distributivity, continuity, repetition, customary action, intensiveness and superlative degree".

• Cusic proposes to categorize these plural meanings using the following 4 parameters Cusic (1981, 77)

(24)   a. the phase/ event / occasion parameter (see below, section on event-internal vs event-external plural)

      b. a relative measure parameter for relating event plurality to the generalized plural function [a function that takes increase and decrease into account, this parameter also concerns number: small, large, small definite count vs large indefinite count PCH]

      c. a connectedness parameter for relating event plurality to the mass/ count distinction

      d. a distributive parameter, for relating plurality to temporal and spatial extension and to number in associated noun phrases

1.4   Xrakovskij (1997)

• Xrakovskij (1997a) considers verbal plurality to be a subcase of lexical aspect.

(25)   It should be noted that some researcher speak not about the semantic fields of quantitative aspectuality but about the category of verbal multiplicity or plurality, although the empirical facts analyzed by them give no ground, in our opinion, to postulated the existence of such a grammatical category in the true sense of the term. Xrakovskij (1997a, 6)

• More specifically Xrakovskij (1997a, 7-8) considers verbal plurality to correspond to Maslov's QUANTITATIVE ASPECTUALITY:

(26)   Maslov's theory of quantitative aspectuality
[...] quantitative aspectuality qualifies actions and states (1) by the number of 'times' or by an interrupted vs. uninterrupted realization, (2) by the degree of duration, (3) by the degree of intensity. Classification by the number of 'times' distinguishes single-time (mono-temporal) and repeated (poly-temporal) actions and states which are further subdivided with respect to limitedness vs. limitlessness and regularity vs. irregularity of repetitions; and finally, permanent, ever-existing states and relations (like *The Earth turns around the Sun*). With respect to degree of duration an action or a state can

> be of unlimited, limited or short duration up to a momentary action (an instant 'leap' from one state into another). Intensity can be 'normal' (unspecified), low or high, sometimes with further sub-divisions. The degrees of intensity, duration and quantity interact in various combinations.

• Xrakovskij stresses that "three logically independent semantic attributes, multiplicity, duration and intensity are included into the semantic field of quantitative aspectuality". Xrakovskij (1997a)

2   Types of event plurality

• In order to classify different types of event plurality the following distinctions have been proposed:

(27)   a. distributive vs. non-distributive plurality (Dressler)
       b. event-internal vs. event-external plurality (Cusic)
       c. event number vs. participant number (Corbett)

• I will then come back to the parallels between verbal and nominal plurality drawn by Cusic in the final section.

2.1   Distributive and non-distributive plurality (Dressler, 1968)

• Dressler (1968) introduces distributive modes of action as a separate category within the semantic field of verbal plurality.

(28)   The **distributive** modes of action
      a. the subject distributive (each of many subjects acts separately, actions being performed either simultaneously or not)
      b. the object distributive (actions performed separately with each of many objects, either simultaneously or not)
      c. the dispersive (the action takes place in different points of space simultaneously)
      d. the diversative (each of many subjects acts in a separate direction)
      e. the ambulative (the action successively affects many points of space)

• In the following example we can see that this notion of **spatio-temporal distribution** is indeed linguistically relevant for verbal plurality:

(29) Hausa (Eulenberg 1971, cited from Corbett 2000, 246)

    a. naa aikee su   (Hausa)
       I   send them

    b. naa a"aikee su   (Hausa)
       I   send.pl them

(30) Possible meanings for the verbal plural in (29b) (Corbett 2000, 246)

    a. I sent them at the same time to different places.

    b. I sent them at different times to the same place.

    c. I sent them at different times to different places.

    d. not possible: I sent them at the same time to the same place.

• In the section on pluractionals we will see that pluractional markers differ in whether they allow **distribution over plural arguments** or not:

(31) Chechen pluractional marking: distribution 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.
       this example 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"

    b. takhana as   duqq'a   ch'eerii liicira
       today   1S.ERG many=& fish.pl   catch.PLR.WP
       I caught a lot of fish today. (each fish is only caught once). Yu (2003, 297)

(32) Squamish CVC-reduplication does not allow distribution

    a. na kw'ech-kw'ach-nexw-as 7alhi slhanay'
       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)

    c. "Even if there are plural participants, each participant seems to be required to participate in plural events." Bar-el (2008, 12,)

(33)   Karitiana reduplicated V does not allow distribution

    a. *Luciana Leticia nakam'abyadn   myhint
        Luciana   Letícia ø-naka-m-   'a-   by- 'a   -t   myhin-t
        Luciana   Leticia 3-DECL-CAUS- build- ?-   RED-NFUT one-OBL canoe
        gooj
        gooj

        'Luciana and Leticia built one canoe'
        not: Collective reading (as a collective event of building one canoe is not
        in the denotation of the pluractional verb)
        not: Distributive reading Müller and Sanchez-Mendez (2008, 452, exs 38-
        39).

    b. But notice that in the same context singular verbs do not allow distribu-
        tion either only the collective reading:

        Luciana Leticia nakam'at   myhint gooj
        Luciana Leticia ø-naka-m-'a-t(??)[sic!]   myhin-t gooj
        Luciana Letícia 3-DECL-CAUS-build-NFUT one-OBL canoe
        'Luciana and Leticia built one canoe'
        ok: Collective reading (they built it together, one event)
        not: Distributive reading (they each built a canoe)
        Müller and Sanchez-Mendez (2008, 452, exs 38).

• Notice that these examples have different plural arguments: plural NPs, plural
pronouns and a coordination of two names.

• It is not trivially clear that these pluralities should behave the same way:

(34)   a. many languages mark plural only on their pronouns (see discussion in
        Corbett (2000, 61-66))

    b. it is not clear that number on 1st and 2nd person plural pronouns is of
        the same nature as number on nouns (Benveniste (1966), see discussion
        in Daniel (2008))

    c. coordinations and plural NPs need not have the same distributional prop-
        erties, in particular, plural NPs have vague cardinality while coordina-
        tions of singulars or names have clearly bounded cardinality.

2.2   Event-internal and event-external plurality (Cusic, 1981)

• Events may be plural in three general ways Cusic (1981, 61)

(35)   a.   Plurality in events:

            The mouse nibbled and nibbled the cheese.

        b.   Plurality of events:

            The mouse bit the cheese again and again.

        c.   Plurality in and of events:

            The mouse was always nibbling at the cheese.

• Have to distinguish events from occasions Cusic (1981, 61)

(36)   The salesman rang the doorbell twice.

        a.   On two separate occasions he rang the bell once.

        b.   On one occasion he rang the bell two times. (cf Leech 1970)

• Together with the phases that can be identified in complex events this gives a hierarchical arrangement of three kinds of bounded units on three levels of structure (Cusic, 1981, 68)

(37)   a.   phase

        b.   event

        c.   occasion

• Cusic's OCCASIONS refer to a level where events are clearly distinct due to temporal disjointness: the events in question are distributed over different times (at least).

• Based on this hierarchy, Cusic (1981, 67) proposes a distinction between **event-internal** and **event-external plurality** (this corresponds to the distinction between **multiplicative** vs **iterative** in Xrakovskij (1997b))

(38)   Cusic (1981, 67)

        a.   Plurality is **internal to an event** if a single event on a single occasion consists of internal phases. (35a)

        b.   Plurality is **external to an event** but **internal to an occasion** if a single bounded event (internally plural or not) is repeated on a single occasion. (35b)

        c.   Plurality is **external to event and occasion** if a single bounded event is repeated on several occasions. (35c)

• As Cusic (1981, 70) points out, using this distinction as a classificatory principle does not imply that the languages which provide the examples systematically and formally make this distinction but that the distinction and the hierarchical structure based on it, underlie our ability to interpret the meaning of plurality.

2.2.1 Internal vs external plurality and the semantic parameters of plurality (Cusic 1981)

(39) Cusic (1981, 78-9)

  a. repetitive action: units of action are conceived of as confined to a single occasion and to a single event on that occasion
      English: flutter, wiggle, tickle

  b. repeated action: units of action are potentially distributable, though not necessarily distributed, over multiple occasions.
      This classes together
      (i) event-external / occasion-internal and
      (ii) event-external/ occasion-external plurality.

(40) Intuition Cusic (1981, 55,122)

  a. repetitive action: is mass-like

  b. repeated action: is count-like, an external plural of bounded entities

• relative measure and repetitive and repeated action

(41) a. repetitive action: mass-like ⟶increase / decrease

  b. repeated action: count-like ⟶small vs. large number

(42) Repeated action: small number: Cusic (1981, ch.3.2.2.2)

  a. duplicative
      the scope of reduplication may include the subject or not:
      min- minge?tu (Zoque)
      come (i) he (the same) came a second time (= *again*, subject included)
              (i) he (another) came also(= *also*, subject excluded)
      (Wonderly 1951:157)

  b. two distinct actions, one a mirror-image of the other are performed by the same agent on the same or different occasions
      loho'm ⟶ loho:m'lohoma't
      enter   he goes in and out (Voegel 1935:108)

(43) Repeated action: large or indefinite count

    a. number of occasions on which the action has been performed

    b. number of objects affected by the event

        'lo   'lolot

        untie (sth) (i) many untie (sth)

                      (ii) (one) unties many things

        (S.E. Pomo, Moshinsky 1974: 48) Cusic (1981, 95)

• the connectedness parameter: in principle we should have

(44) a. repetitive types —→connected

    b. repeated types —→discontinuous

(45) connectedness and repetitive types

    a. durative /continuative: less prominent phasality

    b. cumulative: more prominent phasality

        ktuk-   —→ ktuk-ktu-k-it

        punch a hole   punch full of holes

        (S.E. Pomo Moshinsky 1974:47) Cusic (1981, 97)

(46) connectedness and repeated types

    a. more connected: customary/ habitual (compatibility with adverbs such as *all the time, at all times* Cusic (1981, 97)

    b. less connected: duplicatives/ exact number Cusic (1981, 98)

• Connectedness is expected to have different effects for repetitive and repeated action Cusic (1981, 99):

(47) a. connected + repetitive —→single durative event

    b. connected + repeated —→characteristic or persistent property

• Connectedness ties in with distributivity, since temporally simultaneous events on plural arguments are more connected than temporally distributed events affecting single arguments. Cusic (1981, 100)

• Classification as a single / multiple events can be facilitated by a perceived common result.

(48) A single event frequently has a single goal or completion, and a sequence of repetitions viewed as a single event can suggest a common result. Wood (2007, 181)

    For ex: to break —→break+internal pl = break (sg object) into small pieces

2.2.2 Multiplicative vs. iterative (Xrakovskij 1997)

• Cusic's event-external vs event-internal distinction corresponds to the distinction between MULTIPLICATIVE VS ITERATIVE in Xrakovskij (1997b).

(49) Xrakovskij (1997a, 27, table 1) distinguishes three types of plurality of situations

   a. **Multiplicative** (terminal)
   The boy tapped at the window for several minutes.
   The patient coughed all night.

   b. **Distributive** (terminal)
   In a week's time the fox carried away all the neighbour's chicks one by one.
   Today the student is paying back his debts.

   c. **Iterative** (non-terminal)
   The boy visits his granny every year.
   The patient coughs at night.

(50) a. Multiplicative: a multiple occurrence of the situation P(X,Y,Z) takes place; the sets of actants in all the repeated situations are identical; the repetition takes place at the same period of time T (which may include the moment of speech or any other reference point)

   b. The multiplicative meaning, denoting a series of repeated (micro)actions closely correlates with the semelfactive meaning, which denotes one of the (micro)actions belonging to the series.

   kačat' krjakat' migat' skripat' tolkat'
   rock   quack   blink   squeak   push

   kačnut'   krjaknut'   mignut'   skripnut'   tolknut'
   rock once quack once blink once squeak once push once

(51) a. Iterative: a repeated, relatively regular occurrence of the situation P(X,Y,Z) takes place; the sets of actants in each of the repeated situations are identical; each of the repeated situations occurs in a separate period of time T (not including the moment of speech or any other reference point)

   b. Iterative adverbials comprise

     i. adverbials of cyclicity: *every minute, every three weeks, annually in the evening, on Saturdays*

     ii. adverbials of intervals *seldom, rarely, sometimes, occasionally, often, frequently*

     iii. adverbials of habituality *usually, habitually*

2.3   Event number and participant number

(52)   Corbett (2000, 252-257)

    a. event number: the event is repeated

    b. participant number: in addition to multiple events need multiple participants

• Notice that this notion cross-classifies with distributivity:

(53)   a. participant number plural: distributing down to individuals
       (once only predicates ok)

    b. participant number plural: but distributing down to individuals not possible (once only predicates out)

• As we have seen above, event number can be induced by distribution over space and time and participants.

(54)   Hausa (Eulenberg 1971, cited from Corbett 2000, 246)

    a. naa aikee su   (Hausa)
       I   send them

    b. naa a"aikee su   (Hausa)
       I   send.PL them

(55)   Possible meanings for the verbal plural in (54b) (from Corbett 2000, 246)

    a. I sent them at the same time to different places.

    b. I sent them at different times to the same place. (temporal distribution)

    c. I sent them at different times to different places. (temporal and spatial distribution)

    d. not possible: I sent them at the same time to the same place.

• The different types of distribution need not be equally available: in the example below temporal distribution seems to be necessary, distribution over the individuals making up the plural argument is not enough.

(56)   Karitiana (Müller and Sanchez-Mendez, 2008, 448, exs 19-20)

    a. Õwã nakakot   sypomp opokakosypi (Karitiana)
       õwã ø-naka-kot-ø   sypom-t opokakosypi
       kid   3-DECL-break-NFUT two-OBL egg
       'The kid broke two eggs'
       Context: the two eggs at the same time

b. Õwã nakokonat   sypomp opokakosypi
  õwã ø-na-kot-kot-ø   sypom-t opokakosypi
  kid 3-DECL-break-NFUT two-OBL egg
  'The kid broke two eggs'
  Context: one at a time Müller and Sanchez-Mendez (2008, 448, exs 19-
  20).

c. Plural participants are not necessary:

  Inacio namangatmangadn   Nadia ka'it (Karitiana)

  Inacio ø-na-mangat-mangat-ø Nadia ka'it

  Inacio 3-DECL-lift-RED-NFUT Nadia today

  'Inacio lifted Nadia today (more then once)' Müller and Sanchez-Mendez
  (2008, 451, ex 33)[6]

2.4 Verbal plurality and nominal plurality

• Dressler (1968, 88, §67): Abstract verbs and stative verbs can often not be combined with plural markers. (This resembles nominal plurals)

2.4.1 Participant number and nominal number

• What are the distinctions made for participant number?

(57) Corbett (2000, 248): often sources are not clear on this point [number distinction implied in verbal plurals], rather they refer to "multiple participants" [...]

(58) Corbett (2000, 248): analogy with English *scatter*

  a. Intransitive use: Two or three people cannot scatter, ten clearly can.

  b. transitive use: [...] one cannot scatter two seeds, or perhaps three, but it is hard to say what the lower limit would be.

(59) Thus so-called plural verbs often require "multiple participants", and do not show a strict singular-plural contrast as may be found with nominal number.

• "There are occasional examples of a three-way opposition, however, they are restricted both in the number of languages in which they are found and in the number of items involved." Corbett (2000, 248), citing Karok, Navajo, Mikasuki and other

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[6]Footnote: to differentiate between temporal distribution and participant distribution it would be interesting to have an example of simultaneous events: e.g. the child threw the two eggs down (one with each hand), the child crushed plant 1 and plant 2 with a stick (in one blow) / with two sticks

Muskogean languages as distinguishing singular, dual and plural.

• Mithun (1999, 85, ex 11) reports a three-way distinction from Koasati, a Muskogean language of Louisiana (citing Kimball 1985, 273) (see also Mithun (1988b, 214, ex 5))

(60) a. Singular Dual Plural (Koasati)
haccá:lin hikkí:lin lokkó:lin "stand"
cokkó:lin cikkí:kan í:san "sit"
á:tan áswan í:san "dwell"

b. However, not all verbs have all three:

Singular/Dual vs. Plural
íllin hápkan "die"
óntin ilmá:kan "come"

c. Singular vs. Dual/plural
walí:kan tółkan "run"
batáplin bóklin "hit

2.4.2 Verbal plurality and types of nominal number

• We have seen above that Cusic sees a parallel between verbal plurality and the **mass/ count** distinction:

(61) a. event-internal / repetitive action ⟶mass nouns

b. event-external / repeated action ⟶count nouns

• Wood (2007, 119-28) proposes a slightly different analogy: the difference between event-internal and event-external plurality is parallel to the distinction between **collective** and **(distributive) plural** NPs

(62) a. event-internal plurality: group events, the plural arguments are treated as a collective

b. event-external plurality: plural events, the plural arguments can be treated as true plural and distributed over

• For completely different reasons Laca (2006) also proposes that the Spanish verbal periphrases *andar+gerund* and *ir+gerund* are to be analysed as denoting **collective** event pluralities. Laca's argument is based on the pattern of interaction between the event plurality contributed by these periphrases with other plural NPs in the sentence parallels that of collective NPs.

• Yet another view of the parallelism is proposed in Dolinina (1997, 487-8)

(63)   sources of plurality for verbal plurality Dolinina (1997, 487-8)
    a. Plurality created by the repetition of actions in time
       i. Plurality created by the repetition of actions in time: segmented in time (iterative)
        He seldom goes to the theatre
      ii. Plurality created by the repetition of actions in time: single process (multiplicative)
        The rain rattled against the window.
    b. Repetition of actions by different participants in a situation where these acions are intepreted as individualized (distributive plurality)
       i. Each one looked at the screen.
      ii. On po-bros-a-l   vešči   na krovat'
         he dist-fling-imperf-3msg.past thing-pl:acc on bed:sg:acc
         He flung the things on the bed.

(64)   Dolinina (1997, 485-8) Each of the two heterogeneous sub-cases of verbal plurality possess their own way of representing the three universal types of plurality:
    a. **discrete plurality**
      sum of intermittent elements which can be counted in various ways
    b. **homogeneous (collective)**
      a homogeneous group of elements which cannot be counted within this set

      ber'oz-a $\longrightarrow$ berez-n'ak
      birch-fsg   birch-coll:msg
      birch   birch-grove
    c. **heterogeneous plurality**
      shoe, slipper, boot $\longrightarrow$ footwear

• Notice that heterogenous pluralities like *footwear* in English are grammatically mass, even though in amount judgements they pattern like count nouns (Barner and Snedeker, 2005):

(65)   a. Furniture/ footwear is expensive.   (heterogeneous plurality)
    b. Wine is expensive.   (mass)
    c. *Book is expensive.   (count)
    d. *Collection is expensive.   (collective)

• Future research has to show if this four-way distinction can be fruitfully applied to verbal plurality.

3   Delimiting verbal plurality

• In what follows I will discuss the relation between verbal plurality and the following:

(66)   a.   Distinguish verbal number from aspect (iterative aspect) (progressive Barel (2008)

     b.   Distinguish verbal number from number agreement with the arguments (in languages where nominal number is marked)

     c.   Distinguish verbal number from distributivity markers over one of the arguments (in languages where nominal number is not marked)

    Distinguish verbal number from nominal number Corbett (2000, 252-257)

3.1   Verbal number vs agreement: Durie 1986

• Given that participant number is one of the facets of event plurality it is necessary to distinguish verbal number from number agreement with plural arguments (Durie (1986), see also Corbett (2000, 243-264))

(67)   Distinguish verbal number from number agreement with the arguments (in languages where nominal number is marked)

    a.   María cantó   varias   canciones.
        M.   sang.perf.3sg several songs
        María sang several songs.

    b.   Los niños   cantaron   varias   canciones.
        the children sang.perf.3pl several songs
        The children sang several songs. (subject agreement on the verb) ex

        nous les   avons   mises   sur la   table
        we   3placc have.1pl put.ppart.fpl on   the table
        We put them (f) on the table (object agreement on the past participle)

• Durie (1986) considers cases of **suppletion** on the verb marking the number of an argument

(68)   Claim 1: Suppletive stems select for rather than agree with the number of their arguments. [...] Suppletion encodes a Number category inherent to the verb, not a nominal category.
    Claim 2: there is evidence for a more general verbal Number morphology with properties of the sort described above: suppletion is an extreme instance of a more general phenomenon. (p. 362)

• For similar arguments see Mithun (1988b), Hale et al. (1991, 269)

(69)   "Suppletion for the number of an argument is very widespread in the world's languages. I have unearthed 40 languages from diverse parts of the world with such suppletion [...]. In all cases only a restricted set of verbs supplete for number, the reported totals ranging from a few to a few dozen." Durie (1986, p.356) (p. 362)

• Number distinctions found for alternating stems

(70)   a.   Usually the suppletion is two-way, with a distinction between [+/-singular] and [+/-plural].

       b.   However, three-way suppletion is also reported, for singular:dual:plural (Karok) [Durie uses Bright 1957 as the reference].

• Sometimes a language with suppletion is reported to have certain stems which are only used in the plural or non-singular with no suppletive counterpart (Durie cites Kinkade 1977).

• Dressler (1968, 87, §65) gives examples of reduplicated forms that are missing a simple counterpart in Tübatulabal and in Kaingang, verbs that obligatorily have the iterative prefix *da-* in Georgian.

(71)   a.   Kaingang: onomatopeic words

         tǫtǫ́l   'ɛ´'ɛ´'ɛ´'ɛ´ke
         to thunder, have a headache

       b.   Tübatulabal: words meaning

         bellen, Flöte spielen, blinken, keuchen, treten (alle mehrphasig)
         bark,   flute play,   flash,   pant,   kick   (all multi-phasal)
         do not have basic non-reduplicated form (citing Voegelin 1935, 107 *Tübal-tulabal Grammar*, Berkeley)

       c.   Klamath: words meaning

         stottern, zuschauen, verwirrt   sein, rasseln, auf einem Bein hüpfen,
         stutter, watch,   confused be,   rattle,   on a   leg jump,
         Herzklopfen   haben, siedeln,   erschauern, klopfen,
         heart-beating have,   settle (somewhere), shudder,   knock,
         wirbeln,   gestört   sein, nach Luft schnappen, trauern,
         whirl.sth.around, interrupted be,   catching one's breath, mourn,
         pecken
         peck

do not have a basic non-reduplicated form (citing Barker 1964, *Klamath Grammar* 119ff)

d. Georgian: the iterative prefix *da-* is obligatory in certain verbs

• Durie (1986) defends a selectional account of number suppletion on verbs

(72)   [...] a number suppletive verb selects an argument of the appropriate number in much the same way that verbs select an argument whose referent has the appropriate form: in the same way, for example, that the English verb *peel* selects an object whose referent has a skin, or that *massacre* selects an object referring to a group of people. (p. 355)

• The same intuition is expressed by Mithun (1988b, 214) in work on Native North American languages[7]

(73)   a. "Walking alone is classified lexically as a different activity from walking in a group; speaking is different from conversing; murdering an individual is different from massacring a village. The pairs of verbs are related semantically, but not inflectionally." Mithun (1988b, 214)

   b. "The lexically plural verbs are not unlike English *congreate, disperse, gather* and *scatter*. These English verbs also imply multiple subjects when intransitive and multiple patients when transitive, but it is not immediately obvious what their singular counterparts should be." Mithun (1988b, 215)

• Durie (1986) points out problems for an agreement account, where suppletion does not work like agreement thus providing arguments for a selectional account.

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[7]Notice that this applies to the suppletive (i.e. morphologically unrelated) forms expressing verbal plurality. In many languages these forms co-exist with other morphological markers of argument plurality as the following examples from Yurok illustrate:

(i)   Yurok (Robins 1958, 42)

   a. *cwinkep*   "speak"
      tohkow   "talk together, converse"
      cwinkepoh "several speak"

   b. *nep*   "eat"
      ʔeʔgah "have a meal together"
      nepoh   "several eat"

• **Argument 1**: Suppletion is not triggered by a surface syntactic relation; rather it selects for the number of a particular semantic role of the verb.

(74) Number suppletion follows an "absolute pattern, in which the number encoded is that of the intransitive subject or transitive objects" (Durie 1986, 357, see also Dressler (1968, 70, §40), Cusic (1981, 111-23), Mithun (1988b, 214) for North American languages) [8]

(74) a. Example from Huichol, showing ergative pattern (Comrie 1982)

    i. wan maria maa-tɨ   me-neci-mieni
       Juan Maria and-subj 3pl.subj-1sg.obj-kill.sg
       Juan and Maria are killing me.

    ii. nee wan maria maa-me   ne-wa-qiini
       1sg Juan Maria and-non.Subj 1sg.subj-3pl-obj-kill.pl

  b. Example from Huichol, showing that promoted objects cannot trigger the inherent verbal Number morphology: Huichol (Comrie 1982)

    i. nee waakana ne-mec-umiʔii-ri   eekɨ
       I   chicken 1sgS-2sgO-kill:sg-BEN you
       I killed you(sg) the chicken.

    ii. nee waakana-ari   ne-mec-uqɨʔii-ri   eekɨ
       I   chicken-nonsg 1sgS-2sgO-kill:nonsg-BEN you
       I killed you(sg) the chicken.

• Sometimes numbers suppletion is reported to interact with suppletion for other semantic characteristics of an argument.

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[8]Corbett (2000, 253), (citing Shibatani 1990,50-4) notes Ainu as one exception where verbal number may be sensitive not only to the number of a plural object but also to that of a plural subject. Mithun (1999, 84) notes that the transitive subject is not always excluded. Hale et al. (1991, 263) note that one verb in Hopi goes against this alignment: for the following pair *tuumoyta / noonova* "eat" suppletion correlates with the number of the subject, not the object (but they also note that this verb allows object omission).

See also examples from Moru in Cusic (1981, 181) "[the suffix -i] always pluralized the subject, regardless of the transitivity or telicity of the verb" (this suffix indicates action by collective subjects):

(i) a. lOrE-drE ma te   (Moru)
    baboon   see me past
    the **baboon** saw me

  b. lOrE-drE ma-I   te
    baboon   see-**pl** me past
    the **baboons** saw me Cusic (1981, 181): ex 28-29 citing Tucker (1940: 137)

(75)   In Barai there is a fourfold contrast between *take* with [+/-singular] and [+/-animate] object.

• **Argument 2:** Where there is discord between the number of participants bearing the appropriate semantic role and the strict morphological Number of the syntactic relation-bearing NP, suppletion will reflect the former, agreement the latter.

(76)   In Navajo (Jeanne, Hale and Pranka 1984), comitative and partitive constructions show this property: suppletion is according to the number of participants, agreement according to the Number of the subject:

  a.   shí ashkii bi-ł   yi-sh-'ash
       I   boy   him-with prog-**1sg**-walk:**dual**

  b.   nihí -ła'   di-iid-ááł
       we   subset fut-**1nonsg**-walk:**sg**
       translation? Hale et al. (1991, 268, exs 20a/b)

(77)   In Georgian, a NP modified by a numeral is formally singular, and controls singular Person-Number agreement, but the suppletive verb is non-singular (p. 359, citing Aronson 1982)

  a.   ivane šemovid-a da   daǰd-a
       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**-3**nonsg**
       My parents entered and sat down. (plural)

  c.   čemi sami megobari   šemovid-a da   dasxd-a
       my   three friend-**sg**-nom enter-3**sg**   and **sit:nonsg**-3**sg**
       My three friends entered and sat down. (numeral + NP)

• In Georgian the opposite discord - non-singular Person-Number agreement and singular suppletive verb – occurs with the second person plural of politeness for reference to a single addressee. Here also, suppletion reflects the actual number of the intransitive subject, not its formal Number.

• **Argument 3:** Stem suppletion may distinguish Number features which are not nominal Number features of the language: that is, they are not formally marked in any way in the nominal morphology, neither by nouns nor pronouns.

(78) a. Munro (1976) reports that in Mojave one verb suppletes for singular: paucal: plural, but paucal is not a nominal feature of that language.

b. In Karok, several verbs supplete three ways for singular:dual:plural, although pronouns and nouns (and agreement) only distinguish [+/-singular].

• "In languages where verb triples of the kind sg.du.pl are observed, verb pairs of the kind sg-pl are also found; languages with triples only do not seem to exist." Veselinova (2008, 7)

• **Argument 4:** In syntactic contexts where agreement is characteristically absent, where a language systematically omit agreement morphology to form an infinitive, stems still supplete for number. These contexts include: control constructions, imperatives and attributive usage.

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

a. Subject agreement without verbal number

hilha-li "I dance"
kii-hilha "we dance"

b. Subject agreement with verbal number

malili-li "I run"
kii-tilhaa "we run"

c. 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"

d. Imperatives: subject agreement disappears, verbal number preserved

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

• Stem suppletion for number is preserved in derivational word formation, but inflectional agreement is not.

(80) Moses-Columbian (Salish family) (Kinkade 1977, after Durie 1986)

  ɬáq-lx   sit:sg — yər-íx   sit:nonsg
  k-ɬqlx-áẃsn chair (n)k-yəɫx-áẃsn chairs

• Stem suppletion for number is more "internal" than external agreement (i.e. the morphology marking semantic number on the stem is closer to the stem than the agreement markers).

(81) a. "contrast between **external agreement** and **stem internal Number morphology**. Where data was available, stem-internal Number morphology could be seen to have the concord properties described above for suppletion. (p. 362)

  b. In some of the consulted descriptions a distinction is made between **derivational** and **inflectional** processes with the external Person-Number morphology inflectional and the distinct Number morphology derivational. (p. 362)

  c.

external Person-Number morphology = agreement morphology	inflectional
distinct Number morphology (on the stem) = stem selecting for number	derivational

• **Summary** of Durie's arguments:

(82) a. Argument 1: Suppletion is not triggered by a surface syntactic relation; rather it selects for the number of a particular semantic role of the verb: ergative pattern is characteristic (intransitive subject, transitive object)

  b. Argument 2: Where there is mismatch between the **number of participants** bearing the appropriate semantic role and the strict **morphological Number** of the syntactic relation-bearing NP, suppletion will reflect the former, agreement the latter.

  c. Argument 3: Stem suppletion may distinguish Number features which are not nominal Number features of the language: that is, they are not formally marked in any way in the nominal morphology, neither by nouns nor pronouns.

  d. Argument 4: In syntactic contexts where agreement is characteristically absent, where a language systematically omit agreement morphology to

form an infinitive, stems still supplete for number. These contexts include: control constructions, imperatives and attributive usage.

3.2 Verbal number vs aspect (iterative, progressive)

• Many studies of verbal plurality consider it to be a subtype of (lexical) aspect (*Aktionsarten*) (Dressler (1968); Cusic (1981); Xrakovskij (1997b)).

• Dressler (1968, 51, §19) "considers iterative, distributive, durative and intensive Aktionsarten in his study of verbal plurality":

  (83) "Da wir iterative, distributive, durative und intensive Aktionsarten unter dem Gesichtspunkt der verbalen Pluralität betrachten wollen [...] "

• But while certain meanings of verbal plural markers are aspectual (in particular those that mark event number, some meanings do not fit this description so well.

  (84) Corbett (2000): reasons for not collapsing aspect and verbal number
    a. there is a parallelism between the verbal and nominal domains elsewhere, so it is plausible that plurality should operate in both domains
    b. verbal plurality indicates participant plurality in certain languages, a meaning which is difficult to explain in terms of verbal aspect

• Begin with a definition of what is understood by aspect here.

3.2.1 Brief summary: Grammatical aspect vs lexical aspect (Aktionsarten)

• In many studies, two types of aspect are distinguished Smith (1991)

  (85) a. Lexical aspect (Aktionsarten)
        b. Grammatical aspect (View-point aspect)

• Lexical aspect (Aktionsarten): **Inherent properties of the event/ situation** described by the verb / by the lexical predicate.

• Starting point for this is often the very influential proposal in Vendler (1957) (modified, criticized and discussed in an enormous literature since)

  (86) a. Does the event described by the verb have an inherent endpoint?
            build a house ⟶yes: finish the house
            explode ⟶yes (destruction of the subject)

        run —→no
        know French —→no (this is a state)
        push a cart —→no

  b. does one of the participants in the event undergo a change of state?
        build a house —→yes the house is created
        explode —→yes (destruction of the subject)
        run —→no
        arrive—→yes (be at destination)
        know French —→no (this is a state)

  c. is the change of state gradual or instantaneous?
        build a house —→gradual (the house is created in different steps)
        explode —→instantaneous
        arrive —→?

• These properties have been viewed as restrictions on the temporal structure of the eventuality (how it develops in time).

• Vendler classes / lexical aspect Vendler (1967)

(87) a. States (*be beautiful, know something, love someone*) involve no change over time (they are non-dynamic). For a given interval, a state is true of any instant of this interval.

    b. Activities (*run, walk, swim*), unlike states, are dynamic: they imply change over time.
      Activities are composed of a series of repeated or successive actions that are not identical from one instant to another. Unlike Accomplishments, activities do not have a natural endpoint as part of their lexical meaning (they are *atelic*).

    c. Accomplishments (*draw a circle, write a letter, build a chair*) are durative like Activities, but have an inherent endpoint (they are *telic*)

    d. Achievements (*find something, recognize someone, arrive somewhere, explode*) are instantaneous changes of state: they have a natural endpoint or outcome that must be reached in order for the achievement to be considered as having taken place.

• Problems: the type of event/action/ state is not a property of verbs alone but is influenced by arguments and modifiers (Verkuyl 1972, 1993, and many others since).

(88) Does the event described by the verb have an inherent endpoint?

    a. Bare plural objects /subjects:
      build houses ⟶no? /yes?
      Guests kept arriving ⟶no? /yes?
    b. Adding paths to movement verbs
      run to the store ⟶yes (being at the store)
      push a cart to New York ⟶yes (being in New York)

• So a perennial problem is whether the famous Vendler classification of eventualities (Aktionsarten) is a classfication of verbs or verb phrases (or even whole sentences). (for two recent contributions on this see Rothstein (2008) and Rappaport-Hovav (2008)).

• As boundedness is an important property in the aspectual composition the nature of the object influences the aspectual properties of the sentence and therefore the readings that may be found with verbal plural markers.

(89) Cusic (1981, 240) "Thus, in general, the plural of an unbounded base becomes internally plural, and the plural of a bounded base becomes externally plural."

(90) Cusic (1981, 240) "[...] states are always extended by the plural, but they may be extended on an occasion (becoming durative) or extended to uncountable occasions (becoming habitual)."

(91) Basic intuition
    a. Lexical aspect: about how the event /action "really" is, how it unfolds in time in virtue of the meaning of the predicate.
    b. Grammatical aspect (view-point aspect): How the event is presented
      i. as a punctual event (that will be ordered before or after other events)
        Juan vivió cien años.
        Juan lived.perfective 100 years
      ii. as an interval that other events can be placed in:
        Cuando Juan vivía en Paris, su mamá vino a
        when Juan lived.imperfective in Paris, his mother came.perf A
        verlo.
        see.him
        When Juan lived in Paris, his mother came to see him.

• **The Aktionsart of a predicate is fundamentally a linguistic property** (not a property of the world), see Wood (2007, 221-5) for a discussion of Chechen simulfactive

predicates whose English counterparts are activities (but which are not activities in Chechen).

3.2.2   Verbal number and imperfective

• Dressler (1968, 92, §73) Iterative Aktionsarten differ from imperfective (grammatical) aspect in that iteratives more often carry distributive and intensive meaning (possible criterion to distinguish iterative Aktionsart from imperfective aspect).

• There is a connection between pluractionals and imperfectives, however, one potential test to distinguish between them is the simultaneous interpretation in the following type of examples

(92)   John JUMP when Mary came in.
   a.   JUMP ⟶was jumping (imperfective) ⟶simultaneous events
   b.   JUMP ⟶jumped (perfective) ⟶sequence of events

• Notice that lexical verbs that look like repetitive action pluractionals in English like *scatter* seem to behave like perfectives in the past (not like past progressives)

(93)   a.   John scattered the petals when the bride arrived.
            (sequence of events: first the arrival, then the scattering)
   b.   John was scattering the petals when the bride arrived.
            (simultaneous events: while the scattering is done, the arrival happens)

• Bar-el (2008) argues that with achievements, sometimes a progressive or imperfective is possible, giving a "preliminary stage" reading

(94)   na x̱e-x̱elk̲'-em   ta   sk̲ak̲l na7 ta   yay'wes
       RL RED-fall-iNTR DET baby LOC DET bed
       'He's falling off the bed.'
       Speaker's comments: "He could be rolling off the bed"

• We would not expect a repeated action (event-external pluractional) to allow this reading. It could still be a repetitive action (event-internal) pluractional.

• Prototypical occurrences of progressive Dahl (1985, 92)

(95)   Differences between progressive and imperfective Dahl (1985, 92-3)
   a.   The distinction perfective:imperfective is strongly correlated with past tense, while the progressive is usually tense independent.
   b.   The progressive is infrequently extended to habitual meaning.

    c. The progressive is usually used only of dynamic (i.e. non-stative) situations i.e. examples of the type *John is knowing the answer* are anomalous

• We have proposed with Brenda Laca, that it may be useful to think of **three** levels of aspect (Cabredo Hofherr and Laca, 2010):

(96)   a. lexical aspect of the lexical root (Smith's **situation type**)

        b. Smith's **derived situation type**: constructed lexical aspect integrating adverbs, plural arguments, distribution

        c. viewpoint aspect

• Summary

(97)   a. Pluractionals are classed with lexical aspect (Aktionsart)

        b. Distinguishing pluractionals from aspect:

           i. Pluractionals vs. **grammatical** aspect (imperfective, progressive)

          ii. Distributivity properties over participants (vs. lexical aspect, Aktionsart)

3.3 Verbal number vs distributivity markers

• Studies on verbal plurality vary whether they take into account distributive readings or not (e.g. Wood (2007) excludes them).

• It may be reasonable to exclude markers that **only** mark distributivity such as Engl. *each* in *They ate an apple each.* (excluding other pluractional readings such as frequentatives).

• In what follows I will include distributivity in the descriptions since verbal plurality markers can vary in whether they allow distributive readings over plural arguments or not:

(98)   a. Pluractional marker with distributive readings: with plural subj/obj each individual may be involved only once. (Chechen, Yu 2003)

        b. Pluractional markers without distributive readings: with plural subject/object the plural predicate must apply to each individual (cannot have once-only predicates). (‡Hoan, Collins 2001)

• In a description of the distributivity properties of pluractional markers the different types of distributivity (see Dressler (1968)) have to be considered separately:

(99)   a. the subject distributive (each of many subjects acts separately, actions
           being performed either simultaneously or not)

       b. the object distributive (actions performed separately with each of many
           objects, either simultaneously or not)

       c. the dispersive (the action takes place in different points of space simul-
           taneously)

       d. the diversative (each of many subjects acts in a separate direction)

       e. the ambulative (the action successively affects many points of space)

• Notice also that not all types of plural arguments are equally available for distribu-
tive readings Van Geenhoven (2004, 2005), with bare plurals being good candidates
for distributable plural arguments.

(100)   Different types of plural arguments

       a. bare plurals: *books*

       b. definite plurals: *the books*

       c. demonstrative plurals: *these/those books*

       d. possessive plurals: *my books*

       e. indefinite plurals: *some books, many books, a lot of books*

       f. quantified NPs: *every book, each book*

       g. coordinations: *Luciana and Leticia, the teacher and the children, the man
           and his wife*

       h. plural pronouns: *we, you guys, them,* (and need to differentiate types:
           strong, *(Fr.) moi* "I", weak *(Fr.) je* "I", clitic *(Fr.) me, te, les* "me, you.sg,
           them, null pronouns)

• Dressler (1968) notes several examples where simultaneity of several actions is
only possible if each action is directed into different directions (in Lithuanian, § 44
and 35), so spatial distributivity is involved in the meaning of the verbal plurality
marker.

3.4   How prevalent are verbs marking verbal plurality?

• As Corbett (2000, 257) points out, "we typically find that relatively few verbs show
verbal number distinctions".

(101)   a. For Oron (Central branch of the Cross River languages within Niger-Congo),
           spoken in Calabar Province, Nigeria (Simmons 1956:251): 544 verbal roots
           recorded, of which 10 show verbal number. (Corbett, 2000, 257-8)

b. For Ibibio (Central branch of the Cross River languages within Niger-Congo), spoken in Calabar Province, Nigeria (Simmons 1956:2): 577 verbal roots recorded, of which 24 show verbal number. (Corbett, 2000, 257-8)

c. Kinkade 1981 investigated Salish: twenty sg/pl verb pairs in Moses-Columbian, a few more in Coeur d'Alene, rather fewer in other Salish languages. (Corbett, 2000, 257-8)

d. Hale, Jeanne and Pranka (1991: 270) give slightly more for Hopi. (Corbett, 2000, 257-8)

e. Some languages have a highger proportion of plural-marking verbs in Hunzib (Nakh-Daghestanian) van den Berg (1995:81-3) reports that some 40 percent of verbs can mark plurality by suffix or infix: it appears that plural is usually participant number but sometimes also for event number. (Corbett, 2000, 257-8)

f. In Chechen 20% of the verbal lexicon are marked for verbal plurality by ablaut. Yu (2003, 292)

g. In many North American languages, verb stems alternate according to the number of participants involved. The set of alternative stems consists of a limited number of common verbs, in some languages only two or three, in others up to several dozen. Mithun (1988b)

3.5   Morphological means to express verbal plurality

• Number markers can combine with other features - see e.g. types of number markers in North American languages Mithun (1988b, 217)

(102)   a. "distributive causation, collective causation, collective agency, multiple displacement, and iteration of various sorts."

b. "the various verbal markers do not necessarily co-occur, although they can."

• Mithun (1999, 92) on collectives and distributives

(103)   a. "Collective affixes may appear in verbs as well. 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." Mithun (1999, 92)

b. Members of a plural argument:

      i. "with distributives members are presented as distinct individuals, separated in space, type or time.

     ii. With collectives they are presented as elementes of a cohesive unit." Mithun (1999, 92)

  c. Number distinctions in collectives/ distributives

      i. Distributive markers would not be used to describe an action affecting only two elements.

     ii. "Collectives, by contrast, very often apply to just two entities". Mithun (1999, 93)

- Cusic (1981)

(104)   collective, simultaneous plurality will be connected with a source-agent-oriented view of the event while distributed and sequential plurality will be connected with a patient-/change-oriented view of the event. Cusic (1981, 183)

- For an overview over verbal number and suppletion see Veselinova (2008)

4 Pluractionals

• The term **pluractional** was proposed by Newman (1980) to indicate "multiple, iterative, frequentative, distributive, or extensive action" (Newman, 2000, 423).
• In what follows I will examine some descriptions of verbal plurality markers on the verb i.e. **pluractional markers**.

• The discussion will highlight different parameters of variation

(105)   a. an analysis that proposes a distinction between a **pluractional** and a **progressive** (Squamish, Bar-el 2008)
        b. different **readings** of the pluractional verb **depending on the Aktionsart of the base verb** (Chechen, Niuean)
        c. plurality and **degree readings** of pluractional verbs (Hausa)
        d. **obligatory** pluractional marking with plural objects vs optional pluractional marking (Chechen, Hausa, Karitiana)
        e. different parameters of **distributivity** - time, space, participants (Papago)
        f. **several pluractional markers** in one language (ǂHoan, Aleut, Central Pomo, Émérillon, Sandawe, Squamish, West Greenlandic, Yurok)

• In what follows, I will first follow on from the discussion of the relationship between aspect and pluractional verbs discussing Bar-el (2005, 2008).

• I will then look at a few analyses of pluractional markers that have been influential in the semantic literature Yu (2003); Van Geenhoven (2004, 2005); Ojeda (1998).

• I will then discuss other analyses that

(106)   a. give a detailed description of two pluractional markers in the same language Collins (2001); Garrett (2001); Rose (2008),
        b. describe semantic variation of verbal plurality Součková and Buba (2008)
        c. discuss the meaning of simplex (non-pluractional) verbs Müller and Sanchez-Mendez (2008); Součková and Buba (2008)

• In the summary, we will recap the papers on verbal plurality, focusing on the parameters of variation identified in sections 1-3.

• Finally, I will look at the semantic proposal in Lasersohn (1995) and discuss empirical implications of this proposal.

(107)   a. PA= pluractional marker

    b. many interpretation: not good with precise (small) cardinals

    c. distribute over subject: can be used if each member of a plural subject only is involved in one event

    d. distribute over object: can be used if each member of a plural object only is involved in one event

• We will be looking out for the following list of properties while going through the case-studies (for a summary of the main case-studies using these properties see section 4.16 below):

(108)

Properties	
V+PA is atelic	
"many" interpretation	should distinguish many-adv: no cardinal adverbs and many-arg: no cardinal arguments
obligatory plural argument	difficult if there is no nominal pl
repetitive action reading	
repeated action reading	
distributive readings for V+PA	
distribute over pl subject	
distribute over pl object	
distribute over places	
distribute over times	
coordinated sgs possible	
multiplication of indef sg object	
distributive readings for V (simplex)	

4.1   S̱kwx̱wú7mesh / Sqamish (Bar-el 2008): Aspect

• Squamish exhibits two productive patterns of reduplication: CVC and CV.[9] (Bar-el, 2008, 2005, 1998)

(109)   **CVC**-reduplication (Bar-el, 2008, 2, ex 1a/b)

    a. chen kw'ach-nexw-as   7alhi slhanay' (Squamish)
       1S.SG look.at-TR(LC)-3ERG DEM woman
       I saw the woman

    b. chen **kw'ech**-kw'ach-nexw-as 7alhi slhanay' 7i7x̱w   ḵwayl
       1S.SG RED-look.at-TR(LC)-3ERG DEM woman all/every day

---

[9]Abbreviations used in the glosses CNJ=conjunctive, LC=limited control, LS=lexical suffix,NOM=nominalizer, RL=realis, S=subject, TR=transitivizer.

I see the woman every day.

(110) **CV**-reduplication (Bar-el, 2008, 2, ex 2a/b)

    a. chen x̲itl'-in   ta   stse̲k (Squamish)
       1S.SG chop-TR DET tree
       I chopped wood.

    b. chen **xi**-x̲itl'-in   ta   stsek
       1S.SG RED-chop-TR DET tree
       I continously chopped wood.

• As Bar-el (2008, 2) points out, it is not clear whether these reduplicants mark aspect or verbal plural:

(111)   a. CVC: habitual aspect or verbal plural marker?

      b. CV: continuous aspect or verbal plural marker?

• Analysis in Bar-el (2008)

(112)   a. CVC reduplicant is a **plural** marker in Squamish: the observed aspectual meanings are the salient readings associated with plural events Bar-el (2008, 2)

      b. CV reduplicant is an **aspectual** marker, not a plural marker: the aspectual meanings that arise are due to the fact that the CV reduplicant is the progressive marker in Squamish Bar-el (2008, 2)

4.1.1 Squamish CVC reduplicant

• Meanings expressed by CVC reduplicant

(113) Habitual / always / all the time

    a. lha Linda na kw'elh-nexw-as kwetsi sta̲kw (Squamish)
      DET Linda RL spill-TR-3ERG   DEM   water
      Linda spilled the water (by accident). (ex 3a, Bar-el 2008, 3)

    b. lha Linda na kw'elh-kw'elh-nexw-as ta   sta̲kw
      DET Linda RL RED-spill-TR-3ERG   DET water
      Linda spills the water all the time.
      Speaker's comments: "She's always spilling .. it's a (bad) habit ..."
      " you can say that instead of *lhik̲'* ["always"] (ex 3b, Bar-el 2008, 3)

    c. na lhelh-lhelh-sp'utl'em
      RL RED-ingest-smoke
      He's a smoker. (ex 5, Bar-el 2008, 3)

(114)   iteration

    a.   chen kwelesh-t ta   sxwi7shn (Squamish)
        1S.SG shoot-tr   DET deer
        (ex 6 a, Bar-el 2008, 3)

    b.   chen kwel-kwelesh-t ta   sxwi7shn
        1S.SG RED-shoot-tr   DET deer
        I shot it several times.
        I shot the deer continuously.
        (also possible in the context: I hunt for a job.) (ex b a, Bar-el 2008, 3)

    c.   chen 7exw-7exw-i7n
        1S.SG RED-cough-INTR
        You coughed many times.
        Speaker's comments: "almost like *ke_xalh* ["many times"] (ex 7, Bar-el
        2008, 5)

(115)   continuity

    a.   chen kw'ach-nexw-as   7alhi slhanay' (Squamish)
        1S.SG look.at-TR(LC)-3ERG DEM woman
        'I saw the woman'

    b.   chen kw'ech-kw'ach-nexw-as   7alhi slhanay'
        1S.SG RED-look.at-TR(LC)-3ERG DEM woman
        'You've been watching her for a while' Bar-el 2008, ex9a/b)

(116)   more than once

    a.   chen sa*k*'-an ta   seplin (Squamish)
        1S.SG cut-TR   DET bread
        (ex 10 a, Bar-el 2008, 4)

    b.   chen se_k-sa*k*'-an ta   seplin
        1S.SG RED-cut-TR DET bread
        I sliced the bread.
        Context: I cut it more than once or entire loaf is cut up in pieces. (ex 10
        b, Bar-el 2008, 4)

    c.   chen lhikw'-shn
        1S.SG hook-foot(LS)
        I tripped (lit. get your foot hooked)

    d.   chen lhekw'-lhikw'-shn
        1S.SG RED-hook-foot(LS)

I tripped (Context: more than one time)
Speaker's comments: "you were getting tripped constantly" (ex 7, Bar-el
2008, 5)

• Bar-el (2008, 6) The interpretation does not depend on the type of verb (see ex
(114b) ⟶these interpretations are not different readings , but are contextually de-
termined.

(117) Analysis of the CVC reduplicant Bar-el (2008, 9): verbal number

   a. The CVC reduplicant appears in the verbal and in the nominal domain
      Bar-el (2005, 249, ex 13a/b).

      míxalh ⟶ mex-míxalh (Squamish)
      bear   RED-bear
      bear   bears

   b. An analysis of CVC as verbal number allows us to treat both instances
      CVC reduplication as a single morpheme marking number.

   c. The CVC reduplicated verb denotes event plurality - habituality and iter-
      ativity are contextually determined readings.

(118) Distribution of plural events

   a. Participant distributivity: a reading where each member of a plural argu-
      ment participated once in the event does not seem to be possible Bar-el
      (2008, 12):[10]

      i. 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)

----

[10]Notice that this contrasts with Chechen Yu (2003) where single events for each member of a
plural participant are possible:

(i) a. ceera duezalsh   takhana duqa hxaalkhie ghittira   (Chechen)
         their   members of family today   very   early   wake.up.PLR.WP
         Their family members woke up very early.
         this example 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"

     b. takhana as   duqq'a   ch'eerii liicira
         today   1S.ERG many=& fish.PL catch.PLR.WP
         I caught a lot of fish today. (each fish is only caught once). Yu (2003, 297)
         A simple verb cannot appear with a pl object here.

      ii. chet **xwet**-xwit-im
           1S.PL RED-jump-INTR
           (ii) We are jumping
           (ii) */? We jumped (Context: we each jumped once) Bar-el (2008, 12, ex 25)

  c. "Even if there are plural participants, each participant seems to be required to participate in plural events." Bar-el (2008, 12,)

(118) a. "Plural events denoted by the CVC reduplicant are multiples of the entire event (and not a sub-event), an thus should be considered repeated events as opposed to repetitive events." Bar-el (2008, 11)

  b. "It is not the plural predicate that yields plural participants. [...] the plural participant reading is always an available reading of any DP not overtly marked for plural." Bar-el (2008, 12)

  c. "As to whether CVC reduplication is compatible with an iterative adverbial which explicitly states how many times an event occured, I will have to leave for future research." Bar-el (2008, 21, FN v)

4.1.2 Squamish CV reduplicant

• Meanings expressed by CV reduplicant Bar-el (2008, 15)

(119) a. na nam' kew   na7 ta   staḵw (Squamish)
         RL go   descend LOC DET water
         He went down by water.

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

(120) a. chen xwitim kwi-s   na-s   tl'ik lha Linda (Squamish)
         1S.SG jump   DET-NOM RL-3POSS arrive DET Linda
         Oh, I jumped when Linda arrived.

  b. t'ut   chen xwi-xwitim kwi-s   na-s   tl'ik lha Linda
         former 1S.SG RED-jump DET-NOM RL-3POSS arrive DET Linda
         [Previously], I was jumping when Linda arrived. Bar-el (2008, 15, ex 31)

• Analysis of the CV reduplicant Bar-el (2008, 9), Bar-el (2005, 248-9): imperfective aspect, more specifically a progressive

(121) Dahl's (1985) characteristics of the progressive cross-linguistically

  a. Tendency to be marked periphrastically

      b. The prototypical uses can be categorized as "on-going activity"

      c. Usually (almost) independent of time reference (can appear in past, present, future)

      d. Infrequently extended to habitual meaning

      e. Normally used in non-stative situations

• Bar-el's arguments that the CV-reduplicant is a progressive.

• The basic meaning of the CV-reduplicant is one of "ongoing activity" (121b)

(122) na p'a-p'ayak-ant-as   ta   snexwilh-s   (Squamish)
       RL RED-repair-TR-3ERG DET canoe-3POSS
       'He's in the process of fixing it.' Bar-el (2005, 248, ex 10)

• the CV-reduplicant can be used independently of time reference (121c)

(123) a. chen-t   i-7tut   na7 t-kwi   an'us-<u>k</u>   (Squamish)
         1S.SG-PAST RED-sleep LOC OBL-DET two-o'clock
         'I was sleeping at two o'clock.'   (past)

      b. chen i-7imesh
         1S.SG RED-walk
         'I'm walking.'   (present)

      c. nam' chen e<u>k</u>' i-7imesh kwayl-es
         go   1S.SG FUT RED-walk next.day-3CNJ
         'I will go walking tomorrow.'   (future)
         Bar-el (2005, 249, ex 11a-c)

• the CV-reduplicant does not have a habitual reading (121d) in the following (habitual) context cannot use the CV-reduplicant, need the *wa* imperfective Bar-el (2005, 250-1)

(124) What does Ann do every Saturday morning?
       She CLEAN THE HOUSE/READ. Bertinetto et al. (2000)

• the CV-reduplicant and states (121e)

(125) a. the CV-reduplicant cannot attach to individual-level states Bar-el (2005, 249, ex 13a/b):

        i. ? hi-hiyi ti   mixalh   (Squamish)
            RED-big DET black.bear

        ii. ? tl'a-tl'aktay'kwem
            RED-tall

b. the CV-reduplicant can attach to inchoative states yielding a stative reading Bar-el (2005, 250, ex 14a/b):

   i. chen kw'a-kw'ay' (Squamish)
      1s.SG RED-hungry
      'I'm hungry.'

  ii. chen lhe-lhchiws
      1s.SG RED-tired
      'I'm tired.'

• Bar-el (2008, 16): if CV-reduplicant were only verbal plurality and not viewpoint, we would expect it only to be possible with events that contain subevents that are identical (like *singing, reading a book* [her examples] while events like *building a house, fixing a car* should be excluded, contrary to fact.

(126) na p'a-p'ayak-ant-as   ta snexwilh-s (Squamish)
      RL RED-repair-TR-3ERG DET canoe-3POSS
      'He's in the process of fixing it.' Bar-el (2005, 248, ex 10) (= ex (122) above)

• The intuition is here that plurality of phases is only marked as verbal plurality if the phases are of the same type. As we have seen above, heterogeneous plurals exist in the nominal domain (*footwear,furniture*), so it is not clear that verbal plural markers would be expected to mark homogeneous plurals only (⟶need to look at verbal plural markers in other languages).

• **Semantic aside**: Bar-el adapts Lasersohn's (1995) analysis (Bar-el, 2008, 9-10)

(127) a. Bar-el: Distribution in time is not a necessary component of Lasersohn's analysis.

    b. Propose an analysis that only gives multiplicity as the semantics of CVC (and drops temporal distribution from the Lasersohn formula.)

    c. This step is necessary for Bar-el since **nominal** plurals are not distributed in time, and the analysis covers CVC-reduplication on N and V.

    d. According to this analysis, the CVC reduplicated verb denotes general event plurality. Habituality and iterativity are contextually determined readings (but not dependent on the type of the V).

• The denotation of simplex verbs in Squamish

(128) a. Drawing on Krifka (1992), Kratzer (2008) proposes that simple verbs have cumulative denotation universally, i.e. they include not only singular but also plural events in their denotation.

b. Bar-el (2008, 18) points out that it is not clear whether this condition holds for Squamish.

4.2 Chechen (Yu 2003, Wood 2007)

• Nakh language spoken in the eastern central part of the North Caucasus Yu (2003), Wood (2007, 195-252). In the glosses: WP= witnessed past

• Yu (2003, 291-2) Chechen has verb pairs that pair a singular and a pluractional verb. About 20% of the verbal lexicon is marked for pluractionality by way of ablaut.

• Yu (2003, 292, footnotes 1 and 2): some Chechen verbs have a third form that subcategorized for a plural **absolutive** argument (atypical according to Durie (1986)). In this case can have a four-way contrast:

(129)

to chase	Non-pluractional	Pluractional
SG ABS	*lalla*	*lialla*
PL ABS	*lakhka*	*liakhka*

• Atelicity requirement (in Chechen have *in an hour/ for an hour,* see e.g. Wood (2007) and references cited there):

(130)   the product of verbal pluractionality must be **atelic** (p.309)

• Distinguish **three readings of the pluractional verbs** Yu (2003, 293)

(131)   a. frequentative[11]

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[11]Yu (2003, 295) calls this frequentative-habitual. Wood (2007, 207-210) argues that pluractionals in Chechen do not permit habitual readings. Wood (2007, 210) "[...] pluractional verbs in habitual contexts generally indicate iteration (or duration, or distribution over participants) **on each individual occasion** [emphasis added, PCH]".

(131) a. Wyyrana   Ahwmads   chai molu   (Chechen)
           morning.DAT Ahmed.ERG tea   drink.PRS
           In the morning Ahmed drinks tea.
       b. Wyyrana   Ahwmads   chai myylu
           morning.DAT Ahmed.ERG tea   drink.PRL.PRS
           In the morning Ahmed drinks tea (repeatedly or for a while).

Wood (2007, 206-7) "The pluractional is understood to mean that Ahmed drinks many cups of tea or drinks for a long time every morning, while the nonpluractional [(131a) PCH] simply indicates that Ahmed drinks tea in the morning (with no indication of how much or for how long he drinks)".

    c. distributive

    d. durative [12]

• Examples of frequentatives (repeated action)

(132)   frequentative (repeated action)

    a. as q'iigashana twop-**qwessira** (Chechen)
       1sg crow.pl.dat gun-throw.WP
       I shot crows.

    b. as q'iigashana twop-**qissira**
       1sg crow.pl.dat gun-throw.PLR.WP
       I shot crows many times.

    c. adama   takhan duqqa 'a chai **melira**
       Adam.erg today   many   tea drink.WP
       Adam drank a lot of tea today.

    d. adama   takhan duqqa 'a chai **miilira**
       Adam.erg today   many   tea drink.PLR.WP
       Adam drank a lot of tea over and over again today.

• Examples of distributives, relation with singular/ plural arguments

(133)   distributive

    a. each subject only involved once is possible for plural subjects

       ceera duezalsh   takhana duqa hxaalkhie **ghittira**
       their   members of family today   very early   wake.up.PLR.WP
       Their family members woke up very early.
       this example 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, 296, ex 10a)

    b. with sg subject have repeated action reading

       iza ocu myriahx duqy hxaalkhie **ghittira**
       he that period   very early   wake.up.PLR.WP
       He often got up very early during that period of time. Yu (2003, 296, ex 11a)

    c. With transitive verbs the plural object dictates the choice of the PLR-form. A simple verb cannot appear with a pl object here. (but see discussion of this description below with arguments from Wood (2007)).

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[12]Yu cites Nivkh described in Gruzdeva (1997) as the only other example where pluractional markers have durative interpretations.

    i. eekha swohxtiahx maliikas   jish **lequira** / eesharsh **liiqira**.
    half   hour.loc   Maliika.erg song sing.wp / song.pl   sing.plr.wp
    Malika sang a song / songs for half an hour.
    (PRL -form even though the multiple singing of songs occurs within
    a single occasion.

    ii. takhana as   duqq'a ch'aar **leecira**/   ch'eerii **liicira**
    today   1S.ERG many=& fish.SG catch.WP/ fish.PL   catch.PLR.WP
    I caught a fish/ a lot of fish today. (each fish is only caught once).
    Yu (2003, 297, ex 13a/b)

• Wood (2007, 213-5): this is due to the difference in telicity between *sing a song* (telic) and *sing songs* (atelic): if the plural is preceded by a demonstrative, the predicate is telic and both the plural and the singular verb can be used:

(134)   a. As   hara eeshar / hara eesharsh cwana swohxtiahx **loqu**
        1sg.erg DEM song   / DEM song.pl one.obl hour.loc   sing.PRS
        I sing this song / these songs in an hour.

      b. As   hara eeshar / hara eesharsh jux-juxa   **liiqira**
        1sg.erg DEM song   / DEM song.pl   again.and.again sing.PRL.**WP**
        I sing this song / these songs again and again.
        Wood (2007, 215, exs 22/23)

• Basically Wood's claim is that a simple verb needs a telic predicate. (134a) shows that the predicate with a demonstrative+N is telic (*in an hour*-test), and (134b) shows that once it is telic the simplex verb is ok with a plural argument.

• Frequentative and distributive readings of verbal pluralization are commonplace cross-linguistically. Durative readings are rare. Yu (2003, 299)

• For certain verbs in Chechen, when the verb is pluralized the event is considered to be prolonged instead of repeated (list of verbs in Yu (2003, 299, ex 17))

(135)   a. Ahxmed jaalx swohxtiahx **idira**   / ***vedira**. (Chechen)
        Ahxmed six   hour.loc   run.PLR.WP / V.run.WP
        Ahxmed ran for six hours (non-stop). (ex 18)

      b. The simple verb is used when the running occurs only once and no specific duration is specified for it.

• Yu (2003, 299, footnote 6): "The consultants dislike most co-occurrences of a temporal adverbial and a simple verb. However, if the temporal adverbial denotes a very

short time (e.g., "for a second") then a simple verb might be considered compatible."

Example without an adverbial:

(136) a. cyna   chow **xoizhira** (Chechen)
            3sg.poss wound hurt.WP
            His wound ached (momentarily).

       b. cyna   chow **xiizhira**
            3sg.poss wound hurt.PLR.WP
            His wound ached (for a long time).
            (not: the wound hurt repeatedly or habitually)

• Wood (2007, 211): can have distribution to single individuals, when the subject is sg, have iteration of the event on the subject

(137) a. Bombanash **lilxira**   (Chechen)
            bomb.PL   explode.PRL.WP
            The bombs exploded.

       b. Bomba   **lilxira**
            bomb.SG explode.PRL.WP
            The bomb exploded again and again (one bomb produces several explosions). Wood (2007, 211, ex 17b/c),

• Wood (2007, 212-3): many other verbs where distribution would be plausible do not admit it, (138b) cannot be used to indicate that a group of boxes was lifted one after the other, each box has to be lifted several times:

(138) 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)

• Can predict the reading of the pluractional verb from event type Yu (2003, 293)

(139) a. **Frequentative** reading: predicates with clear endpoints
            achievements, accomplishments and semelfactives.
            Pluractionality results in an activity interpretation

    b. **Durative** reading: predicates that are inceptive, inchoative, activity and stative predicates "durative pluralization targets the end state of an inceptive event" (Yu, 2003, 311)

       i. state ⟶plural state: prolonged " pluralization of a stative event should yield prolonged situation since a state has no inherent initial or final state

      ii. Inceptive/ inchoative ⟶plural inceptive

     iii. activity ⟶plural activity: prolonged "verbal pluralization produces an event that is prolonged instead of repeated with or without interruption - the product of pluralization requires a mass interpretation – no information about the exact number of iterations can be deduced (Yu, 2003, 313)

    c. **Distributive** readings: no particular class, must be part of their lexical entry (Yu, 2003, 315)

• The plural argument has to be unspecific in number to license verbal plurality (ergative pattern, intransitive S, transitive O)[13]

(140) 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)

    c. takhana as   c'ii-ch'aara'a jai-ch'aara'a miaq-ch'aara'a **leecira**   /
        today   1s.erg sturgeon=& bullhead=& catfish=&   catch.wp /
        ***liicira**
        catch.plr.wp
        Today, I caught a surgeon, a bullhead and a catfish. (Yu, 2003, 317, ex 58)

• Chechen prohibits the use of a pluractional verb when the exact number of repetitions is specified, as illustrated by the ungrammaticality of (141b). Yu (2003, 303,ex27a/b)

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[13]Ask for cardinal NP: 20 children stood by the door / a dozen children.

(141)   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)

• Summary Chechen

    a.   partial predictability of the reading depending on the Aktionsart of the
         predicate

    b.   aspect marking and type of plural argument interferes
         pl arg makes plural V-stem obligatory for bare pl with a verb in the wit-
         nessed past
         pl arg compatible with sg-stem for demonstrative pl with a witnessed
         past

    c.   many-requirement for arguments: coordinations of sgs not felicitous with
         pl V
         (no data for cardinal+N+plV)
         many-requirement for adverbs: "ten times" not felicitous with pl V

4.3   Papago (Ojeda 1998: different verb classes wrt pluractionality

• Papago (or **Tohono O'odham**, Uto-Aztecan, Southern Arizona & Northern Mexico)

• Data from a series of studies by Madeleine Mathiot (see Ojeda (1998) for refer-
ences).

• The interesting feature of Papago is that the verbs fall into three classes distin-
guishing different contrasts wrt to repetition and distribution.

• Papago shows that pluractional distinctions in a language need not be uniform
across all verbs that have a pluractional distinction.

• Ojeda (1998, 249): According to Mathiot (1983, 205ff) the verbs of Papago belong
to one of three classes according to their "verbal status".

(142)   a.   Class 1 verbs: Unitive vs Repetitive vs Distributive

	Unitive	Repetitive	Distributive	(Papago/ Tohono O'odham)
	bái, báhǎ	bábbhe	bá· bhe	"to ripen"
	nái	nánda	nà· nad	"to make a fire"
	béhě	bébbhe	bé· bhe	"to get (sg obj)"
	ʔúʔu	ʔúʔʔu	ʔú·ʔu	"to get (pl ob)

b. Class 2 verbs: Unitive vs Nonunitive

Unitive	Nonunitive	
héhem	héhhem	"to laugh"
wáhawa	wáhawup	"to take off object"
hím	híhhim	"to walk (sg subject)"
híhim	híhhim	"to walk (pl subject)"
wá·g-	wápga	"to irrigate object"

c. Class 3 verbs: Nondistributive vs Distributive

Nondistributive	Distributive	
cíkpan	cíckpan	"to work"
wóʔǒ	wóʔowop	"to lie (animates, sg subj")
wópǐ	wóʔowop	"to lie (animates, pl subj")
ká·c	wéʔewec	"to lie (inanimates, sg subj)
wé·c	wéʔewec	"to lie (inanimates, pl subj)

• The different verb-stems have the following meaning (Ojeda (1998, 250) citing Mathiot (1983, 205ff))

(143) a. the **unitive** indicates a single action or condition at a single locus.

b. the **repetitive** indicates several identical actions at a single locus.

c. The **non-distributive** indicates a single locus, without specifying the number of actions or conditions

d. the **distributive** indicate several identical actions or conditions at several loci

e. the **non-unitive** can be either repetitive or distributive (i.e. indicate several identical actions or conditions at a single or several loci) (Ojeda cites p.c. with Mathiot)

• Examples

(144) Example of a class 1 verb (Ojeda, 1998, 251, ex 13):

	a.	Unitive	habéʔi	"to say sth for the 1st time once (at one location)"
	b.	Repetitive	habcéce	"to say sth for the 1st time more than once at one location"
	c.	Distributive	habcécce	"to say sth for the 1st time more than once at more than one location"

(145)   Example of a class 2 verb (Ojeda, 1998, 251, ex 11):
    a. Unitive   héhem   "to laugh once (at one location)"
    b. Nonunitive   héhhem   "to laugh more than once (in one or more locations)"

(146)   Example of a class 3 verb (Ojeda, 1998, 251, ex 12):
    a. Distributive   cíkpan   "to work (once or more than once) at one location"
    b. Nondistributive   cíckpan   "to work (more than once) in more than one location"

• From this description several parameters are not clear:

(147)   a. How does verbal plurality interact with plural arguments?
      i. is distribution possible over individual / times?
     ii. is distribution necessary?
     iii. do any contexts force a non-sg stem?
    b. Do plural verbs multiply singular objects?
    c. What kind of plurality is verbal plurality? Is there a *many*-ness requirement?

4.4   West Greenlandic (Van Geenhoven 2004,2005): distribution

• Van Geenhoven (2005)discusses four West Greenlandic verbal affixes that express continuative, frequentative and gradual aspect:

(148)   Continuative

Unnuaq   tamaat erinarsortuarpoq.   (West Greenlandic)
unnuaq   taa-at ininarsur-**tuar**-puq
night.abs all-3sg sing-**continuously**-int.[-tr]3sg

He sang continuously all night long (without a break, nonstop). Van Geenhoven (2004, ex 2)

(149)   Frequentative (2 markers, unspecified number vs. large number)
    a. Nuka ullaap   tungaa   tamaat
       Nuka ullaa-p   tunga-a   tama-at
       N.abs morning-erg direction-3sg.sg.abs all-3sg
       sinoqquttarpoq.   (West Greenlandic)
       saniuqqut-**tar**-puq
       go.by-**repeatedly**-ind.[-tr].3sg
       Nuka went by repeatedly the whole morning.[14]   (unspecified number)

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[14]Van Geenhoven (2005, 110) notes that in this context (durative context with accomplishment verbs) the frequentative-marking is obligatory.

    b. Nuka ullaap   tungaa   tamaat
        Nuka ullaa-p   tunga-a   tama-at
        N.abs morning-erg direction-3sg.sg.abs all-3sg
        sinoqqutaattaarpoq.
        saniuqqut-**qattaar**-puq
        go.by-**again & again**-ind.[-tr].3sg
        Nuka went by again and again the whole morning.   (large number)
        Van Geenhoven (2005, exs 6, 11)

(150)   Gradual

     alligaluttuinnarpoq   (West Greenlandic)
     alli-**galuttuinnar**-puq
     big-**more & more**-int.[-tr]3sg

     He is getting bigger and bigger. Van Geenhoven (2005, ex 16)

• Claim: the continuative, frequentative or gradual aspect can be described by defining **unbounded** pluractional operators Van Geenhoven (2005, 107) [my emphasis, PCH].

• 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 pluractional involved cannot 'multiply' singular participants, but it can enter into a particular sort of distributive dependency with a plural participant. Van Geenhoven (2004)

(151)   a. # Qaartartoq sivisuumik   qaaqattaarpoq (West Greenlandic)
          qaartartuq sivisuu-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, example (30))

     b. Qaartartut   sivisuumik qaaqattaarput
        qaartartu-t   sivisuu-mik qaar-**qattaar**-put
        bomb.ABS-PL lengthy.INS explode-QATTAR-IND.[-tr]3PL
        'Bombs exploded again and again for a long time.'
                                    (Van Geenhoven, 2004, example (31))

(152)   Achievements + for–adverbials (Dowty 1979: 78-82)

     a. ?Mary discovered **a flea** on her dog for six weeks. [=VG2004 (100)]
        'Mary discovered a flea and she discovered it again and again for six weeks.' (absurd reading , same flea, "the same" reading)

b. Mary discovered **fleas** on her dog for six weeks [=VG2004 (102)]
'Mary discovered a flea and she discovered another flea and... again and again for six weeks.' (ok, "another" reading)

• Van Geenhoven (2004, 112-118) points out that in West Greenlandic some frequentative affix is necessary to get an iterated reading (i.e a simplex verb does not allow it), in contrast with English, where a simplex verb allows this iterated readings.

• Van Geenhoven (2004, 112-118) defines pluractional operators to capture the meaning of continuative, frequentative and gradual aspect

(153)   a. These pluractional operators attach to verbs to return temporal structures which stipulate how the running times of the V-events (the subintervals at which the basic verb holds) are distributed over the overall running time or interval of validity of the pluractional.

b. These pluractional operators can be thought of as the verbal counterparts of Link's (1983) star operator on nouns, which is the closure of a predicate of atoms under the sum operation. Van Geenhoven (2005, 112)

• In Van Geenhoven's analysis, a verb+*tar* is "like a bare plural in that it does not refer to a specific number of subevents." Van Geenhoven (2004, 160)

• The proposal in Van Geenhoven (2005, 112-118) for the pluractional operators:

(154)   Frequentatives
the frequentative of a verb V holds during an interval t if
a. there is a subinterval t' of t at which V holds
b. there is a certain number of such subintervals t' of t at which V holds
c. for each such subinterval t' of t there is another subinterval t" at which V holds that either precedes or follows t'
d. for each such pair of subintervals t' and t" of t there is another subinterval t"' at which V does not hold that separates t' and t" (there is a temporal gap)

(155)   a. *-tar-* the number of repetitions is larger than one
b. *-qattaar-* the number of repetitions is high

(156)   Van Geenhoven (2005, 113, ex 21) frequentative *-tar-* λ V λt λx ($\star^t$ V(x) at t)
where ($\star^t$ V(x) at t) is true iff
$\exists$ t' (t' $\subseteq$ t & V(x) at t'
& number (t') > 1

& $\forall$ t' (t' $\subseteq$ t & V(x) at t' $\longrightarrow \exists$ t" (t" $\subseteq$ t & (t">t' or t"<t') & V(x) at t"

& $\exists$ t"' (t"' $\subseteq$ t & (t">t"'>t' or t">t"'<t') & not V(x) at t"'))))

• Given an appropriate plural argument (a bare plural, essentially) the star operator can also distribute over the individual parts of the subject as in (151b) Van Geenhoven (2005, 114-5). This differs from the analysis in Lasersohn (1995),where distribution over times and distribution over participants are subvalues of the same parameter and therefore are not expected to combine Van Geenhoven (2005, 115).

(157) Continuatives

the continuative of a verb V holds during an interval t if

a. there is a subinterval t' of t at which V holds

b. there is more than one such subintervals t' of t at which V holds

c. for each such subinterval t' of t there is another subinterval t" at which V holds that either precedes or follows t'

d. for each such pair of subintervals t' and t" of t there is **no other** subinterval t"' at which V does not hold that separates t' and t" (there is **no** temporal gap)

(158) Van Geenhoven (2005, 116, ex 29)

continuative -*tuar-* λ V λt λx ($\star_3{}^t$ V(x) at t)

where ($\star_3{}^t$ V(x) at t) is true iff

$\exists$ t' (t' $\subseteq$ t & V(x) at t'

& number (t') > 1

& $\forall$ t' (t' $\subseteq$ t & V(x) at t' $\longrightarrow \exists$ t" (t" $\subseteq$ t & (t">t' or t"<t') & V(x) at t"

& not $\exists$ t"' (t"' $\subseteq$ t & (t">t"'>t' or t">t"'<t') & not V(x) at t"'))))

4.5   Hausa (Dressler 1968, Newman 1990, Součková & Buba 2008)

Dressler (1968); Newman (1990); Součková and Buba (2008); Smirnova (1997)
    Newman (1990, 117)

• General properties of the pluractional in Hausa

(159) a. "The use of pluractional verbs in Hausa for describing "plural" situations is not obligatory; a simple, non-reduplicated verb can always be used instead." (Součková and Buba (2008, 134)) [15]

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[15]See Dressler (1968, 95): "even though almost any verb can be reduplicated [...] these forms are relatively rarely found in texts, see also Corbett (2000))

b. "Pluractional verbs are in fact rather marked and generally used for emphasis, despite their high productivity in terms of systematic formation." (Součková and Buba (2008, 134))

c. "The number of participants, times or locations should be (relatively) high and preferably should stay vague (thus direct modification of the noun by a numeral is degraded)." (Součková and Buba (2008, 135))

   i. mutàanee sun   fir-fitoo   (dàgà gidàajensù)
    people   3pl.perf RED-come.out from houses.their
    Many people came out of their houses (one by one or at the same time). (ex 2, Součková and Buba 2008, 134)

   ii. ?? mutàanee **àshirin** sun   fir-fitoo   (dàgà gidàajensù)
      people   **twenty** 3pl.perf RED-come.out from houses.their
    (example from Součková and Buba (2008, 135))

• Dressler (1968, 97, §77): reduplication can be combined with exact number of repetitions and exact number of objects:

(160) a. ya bubbuga shi so uku
      he RED-pushed him 3 times

     b. sun sassare dawaki takwas
        they killed 8 horses one after the other
        (sie töteten hintereinander 8 Pferde)

• Dressler (1968, 97): Simultaneous subject distributivity is possible.

• Gradable verbs *ruuɗèe /gàji / dàamu* "be confused, tired, worried": these verbs when reduplicted require a plural subject and at the same time the gradable property associated with them is intensified: (Součková and Buba (2008, 137))

(161) a. yaa   / yâraa   sun ruuɗèe   (Hausa)
      3sg-pf / children 3pl.pf be.confused
      he was / (the children were) confused.

     b. yâraa   sun rur-ruuɗèe
       children 3pl.pf RED-be.confused
       the children were very confused (beyond control, alarmed).

     c. * yaa   rur-ruuɗèe
        3sg-pf RED-be.confused
       Not: he is very confused. (examples 6a-c from Součková and Buba (2008, 137))

(162) a. naa / mun gàji
1sg / 1pl.pf be.tired
I am / we are tired

mun gàg-gàji
1pl.pf RED-be.tired
we are all very tired

?? naa gàg-gàji
1sg.pf RED-be.tired
Not: I am very tired (example 7a-c from Součková and Buba (2008, 137))

• "at least some speakers seem to have the intuition that for high degree pluractionals, having a plural subject is sufficient; there is no need for the participants to be *many* as it is generally required"
Examples of the type *A & B were very alarmed* are possible, (K, Souckova, p.c.).

(163) Proposal Součková and Buba (2008)
   a. It should be made explicit that singular verbs can refer to both singular and plural events [...] they are unspecified for number. Pluractional verbs on the other hand, can only be used for plural events (which can sometimes simply mean something like "inner complexity/ multiplicity" not necessarily "many events")
   b. the role of the pluractional morpheme is to remove the singletons from the denotation of the verb. (see Müller and Sanchez-Mendez (2008) for Karitiana)

• Inter-speaker variation:

(164) a. Separateness condition: in cases like

   ruwaa yaa   zuzzuboo
   water 3sg.pf RED-pour

   for most speakers the only possible scenario is that the water was coming / pouring from different places (or interruptedly); crucially not in one stream. There are other speakers, however, who allow for both possibilities. It seems that some speakers do not or not always have the separateness condition. (Součková and Buba (2008, 141))
   b. Plural subject with gradable reduplicated verbs:
   two speakers accept singular subjects with *rurrùuɗee* although in this case the interpretation is something like *be confused for mutliple reasons* or *get confused again and again* (i.e. a plurality interpretation) (Součková and Buba (2008, 141))

4.6   ǂHoan (Collins 2001): two markers

Khoisan language spoken in Botswana.
• Collins (2001, 464) in ǂHoan it is possible to form the plural of a verb (citing Gruber 1975a,b,c).

(165)   a.   ya 'a-   **kí**-   kini-**q‖o**   Ɵ'u
             3sg PROG kí[pl] want-around duiker
             He is looking around for a duiker.

    b.   Jefo **kí**-   tchi-**tcu**   -'a   Ɵ'u   ki   ‖a"a-qa
             Jeff kí[pl] shoot-REP PERF duiker PREP arrow-PL
             Jeff shot at the duiker with arrows. Collins (2001, 465, exs 24a/b)

(166)   Have two forms:
        kí-VERB-q‖o: *kini* want, look for" ⟶kí-kini-q‖o "looking around"
        kí-VERB-tcu ⟶sense of repeated action

• Both forms of plural marking are not obligatory Collins (2001, 465):

(167)   a.   ya 'a-   kini Ɵ'u
             3sg PROG want duiker
             He is looking for a duiker. (Can be used when someone is looking around
             in different places for a duiker, i.e. in the same situation as (165aa))

    b.   Jefo tchi   -'a   Ɵ'u   ki   ‖a"a-qa
             Jeff shoot PERF duiker PREP arrow-PL
             Jeff shot at the duiker with arrows. (Can be used in situations where
             (165ab) is used). Collins (2001, 465, exs 25a/b)

• In both forms the plural agreement morpheme *kí[pl]* appears (see Collins (2001, 456-464))

4.6.1   kí-VERB-q‖o

• The plural agreement morpheme *kí[pl]* is not sufficient to make the verbal forms plural (Collins (2001, 465-6, exs 26/27))

(168)   a.   Jefo 'a-   kí-   kya"o-q‖o
             Jeff PROG kí[pl] go-around
             Jeff is walking around. (to different places)

    b.   * Jefo 'a kí- kya"o

    c.   * Jefo 'a kya"o-q‖o Collins (2001, 466, ex 26)

(169)   a. Titi 'a-   kí-   'am-q‖o
            Titi PROG kí[pl] eat-around
            Titi is eating in different villages in one day or perhaps at different places
            in one village.

        b. * Titi 'a- kí- 'am

        c. * Titi 'a- 'am-q‖o Collins (2001, 466, ex 27)

• Collins (2001, 467): "The basic meaning of kí-VERB-q‖o is that there are several
different places at which the event or action is sequentially repeated."

(170)   a. * Titi 'a-   kí-   'am-q‖o   ki   ci   mϽun
              Titi PROG kí[pl] eat-around PREP place one

        b. * ya   'a-   kí   kini-q‖o   Ϲ'u   ki   ci   mϽun
              3sg PROG kí[pl] want-around duiker PREP place one

        c. * kyeama i   kí-   ciu-q‖o   ki   ci   mϽun
              dog   past kí[pl] dig-around PREP place one
              Collins (2001, 467, ex 31a-c)

• If the subject of the sentence is plural, there still must be a sequence of events
Collins (2001, 467-8, exs 32/33).

(171)   a. 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.

        b. tsi 'a   kí-   n|obo-q‖o ke   tcon!a'e
            3pl prog ki[pl] talk-around with people
            They are going around talking to people.
            Cannot mean: each of them is talking to a different person in a separate
            location.
            They are going around (separately or together) talking to different peo-
            ple.

• The plural meaning of the kí-VERB-q‖o applies to every member of a plural subject.

4.6.2   kí-VERB-tcu

• *kí*-VERB-*tcu* can only appear with transitive verbs that involve some sort of aggres-
sive contact. Collins (2001, 468)

• The morpheme *-tcu* is degraded when appearing without the prefix *kí-* (we have already seen that *kí-* alone cannot pluralize the verb):

(172) a. Jefo kí-   q‖'ao-tcu -'a ‡'amkoe
           Jeff kí[pl] stab-rep perf person
           Jeff stabbed the person repeatedly.

       b. ? Jefo q‖'ao-tcu -'a ‡'amkoe
             Jeff stab-rep perf person
           Jeff shot at the duiker with arrows. Collins (2001, 468, exs 34a/c)

(173) a. Jefo kí-   tchi-tcu -'a ☉'u ki   ‖a"a-qa
           Jeff kí[pl] shoot-REP PERF duiker PREP arrow-PL
           Jeff shot at the duiker with arrows.

       b. ? Jefo tchi-tcu -'a ☉'u ki   ‖a"a-qa
             Jeff shoot-REP PERF duiker PREP arrow-PL
           Jeff shot at the duiker with arrows. Collins (2001, 468, exs 35a/c)

• Collins (2001, 469): kí-VERB-tcu differs from kí-VERB-q‖o in that kí-VERB-tcu does not entail that the events occur at different locations:

(174) Jefo kí-   q‖'ao-tcu -'a |'on ki   ci   m☉un
       Jeff ki[pl] stab-rep   perf tree prep place one
       Jeff stabbed the tree repeatedly in one place. Collins (2001, 469, ex (38))(compare with (170) above)

• Collins (2001, 469): "kí-VERB-tcu means pure repetition, where kí-VERB-q‖o means sequential repetition at different places."
• kí-VERB-tcu can distribute over a plural object:

(175) a. ma i   kí-   q|aen-tcu tcon!a'e
           1sg past ki[pl] hit-rep   people
           I hit the people.Collins (2001, 469, ex (39))
           Can be used if there are three people and I hit each person once.

       b. ma i   kí-   tchi-tcu tsi
           1sg past ki[pl] shoot-rep 3pl
           I shot them (one by one). Collins (2001, 469, ex (41))
           The sentence can be said if I shoot each person with a different bullet, if I shoot one bullet and it kills several people this sentence is no longer possible.

• Collins (2001, 469) kí-VERB-tcu can distribute over a plural subject (but less natural than a sg subject acting repeatedly):

(176) tsi i   kí-   q|aen-tcu Jefo
       3pl past ki[pl] hit-rep   Jeff
       They hit Jeff. Collins (2001, 469, ex (42))
        Can be said if there are three people and each hits Jeff once.

• It is unclear whether the three subjects can act at the same time in (177), i.e. it is not clear whether temporal distinctness of events is a necessary condition for the use of kí-VERB-tcu. (Collins (2001, 470))
• Collins (2001, 470) kí-VERB-tcu can distribute over a plural subject and a plural object at the same time, the following can be used if each subject only hits one of the objects

(177) tsi i   kí-   q|aen-tcu tsi
       3pl past ki[pl] hit-rep   3pl
       They hit them. Collins (2001, 470, ex (43))
        Can be said if there are two groups of people A, B, and C and X, Y and Z and A hits X, B hits Y and C hits Z.

• Collins (2001, 470) For the use of kí-VERB-tcu a number of different events (described by the verb) occur. The meaning of kí-VERB-tcu is similar to the meaning of **"distributive" reduplication** that Lasersohn (1995) analyses in Klamath.
• Collins (2001, 471): ǂHoan has a small list of verbs that have suppletive plural forms. These forms behave like the forms discussed by Durie (1986) (see section 3.1 above).

(178)   a. Ergative pattern:
            transitive verb ⟶ suppletive form is used with a plural subject.
            intransitive verb ⟶ suppletive form is used with a plural object.

        b. Semantic agreement:
          i. ma 'a-   tsi ǂ'amkoe ci 'a-   kí-'n!o
              1sg prog see person   inf prog **run.sg**
              I see a person running.
          ii. ma 'a-   tsi tcon-!ka'e ci 'a-   kí-ng!aen
              1sg prog see people   inf prog **run.pl**
              I see people running.
          iii. ma 'a-   tsi ǂ'amkoe !'aen-qa ci 'a-   kí-'n!o
              1sg prog see person   leg-pl   inf prog **run.sg**
              I see a person's legs running.

• Plural kí-VERB-q‖o and plural suppletion can combine **if the subject is plural**. Collins (2001, 473)

(179) a. ya ʻa- kí- ǃuco-qǁo ki ǃoa-qa kí- na
      3sg prog kí[pl] **enter.sg**-around prep house-pl kí[pl] in
      He is running around into the houses.

    b. *ya ʻa- kí- ǃaˮm-qǁo ki ǃoa-qa kí- na
       3sg prog kí[pl] **enter.pl**-around prep house-pl kí[pl] in
      He is running around into the houses.

    c. tsi ʻa- kí- ǃaˮm-qǁo ki ǃoa-qa kí- na
      3pl prog kí[pl] **enter.pl**-around prep house-pl kí[pl] in
      They entered one house, left it, entered another house, left it, etc.

• This is presumably due to the fact that the plural suppletion is tied to a particular semantic role (for intransitives, the subject). So we would expect with transitive plural suppletives for the two plurals to be able to combine if the object is plural. (no data bearing on this)

• No data bearing on the cardinality available (Chris Collins, p.c.) (compatibility of the verbal plural morphemes with exact cardinality expressed on the arguments *us three, four hunters* or by an adverbial expression *three times*).

4.7   Yurok (Robins 1958, Garrett 2001, Wood 2007): two markers

• Yurok (Northwestern California, Algic family)
• Wood (2007, 142): two grammatical categories indicate pluractionality in Yurok

(180) a. the iterative infix with a meaning of "plurality, intensity, or iteration of the action, state or process denoted by the verb" (Robins 1958:82, cited in Wood 2007)

    b. the repetitive, a verbal reduplication with indicates "that an action is repeated a number of times in a relatively short time" (Garrett (2001, 277), cited in Wood (2007))

• Wood (2007, 142): the basic form of the **Iterative** is an infix *-eg-* (or *-rg-* if followed by the rhotic vowel -r- in the first syllable of the root), the infix is positioned after the first consonant of the root. If the first consonant is a glottal stop, the infix takes the form *-eʼg-/-rʼg-*

(181)   Wood (2007, 143, exs 1-2)

tenpewehl	to rain	t-eg-enpewehl	to rain often
krtk-	to fish for trout	k-rg-rtk	to fish habitually /repeatedly
nep-	to eat	negep-	to eat regularly/ repeatedly
ko'moy	hear	kego'moy	to hear regularly, be an interpreter
'oroyew	to be in debt	'e'goroyew	to be always in debt
'rp	to tell	'r'grp	iterative

• Wood (2007, 142): if the initial syllable of the root contains -e- followed by a velar, ablaut of the vowel occurs in place of the infix:

(182)   Wood (2007, 143, ex 3)

base verb		iterative	
kweget	to visit	kwiiget	to visit regularly
nek–	to put	niik-	to put regularly
tegerew	to talk	tiigerew	to talk repeatedly to be on speaking terms
'oroyew	to be in debt	'e'goroyew	to be always in debt
'rp	to tell	'r'grp	iterative
new-	to see	nuuw-	to see repeatedly

• Wood (2007, 144): the **repetitive** is formed through reduplication, prefixing a heavy syllable or two light syllables, depending on the structure of the root (citing Garrett 2001:271)

(183)   Wood (2007, 144-5, ex 4)

base verb		repetitive	
sitoh	to splinter	sitsitoh	to splinter several times
mekwehl		mekwomwkwehl	to be in heaps
yekwoh		yekwoyekwoh	to fold up or fold pl obj
ma'epet-	to tie up	maama'epet-	to tie right up

• Wood (2007, 146): basic uses of both repetitive and iterative are to refer to repeated actions or events.

(184)   a. iterative: glossed as "regularly, often" and in certain contexts as "repeatedly"

       b. repetitive: closely-spaced repetitions on a single occasion.

• Wood (2007, 148): Garrett (2001) has argued that this is a difference between event-external and event-internal repetition.

• Temporal distribution is possible without pl argument:

(185)   kipun kwegeskwes-ek'
        winter have.a.cold.itr-1sg
        In the wintertime I have a cold.Wood (2007, 146, ex 5c)

• Temporal distribution is not necessary:

(186)   kich yekwoyekwoh
        perf REP.fold
        I folded them (in sequence or all at once).Wood (2007, 157, ex 15)

• Wood (2007, 150-): have cases of interpretations involving spatial distribution for both repetitive and iterative (of the type *have many holes in, be glued at many points*) – this is due to the interaction with the lexical semantics of specific classes of verbs, not due to the meaning of the repetitive and the iterative.

• Wood (2007, 188): the iterative is compatible with exact number of repetitions.

(187)   Nek kwelekw ku nahksemi wegoych-ok'
        1sg well   art three   be-away.at.night.itr.-1sg
        I shall be away three days. Wood (2007, 188, ex 49a)

• Wood (2007, 162) summarises the pluralisation possibilities of arguments with the Repetitive and the iterative as follows (Yurok has no nominal plural):

(188)   Pluralising possibilities

Pluralised argument	Repetitive	Iterative	Wood (2007, 162, Table
transitive object	yes	yes	
stative intransitive subject	yes	yes	
transitive object	yes	yes	
unacc intrans subject	yes	yes	
unerg intrans subject	no	yes	
trans subject	no	yes	

        4.1.)

• Wood (2007, 188): the iterative can (seemingly) take scope over the negation.

(189)   mos tegen
        neg rain.iter
        It never rains. Wood (2007, 187, ex 48)

• Wood (2007, 192): the iterative can intensify degree (few examples, archival material).

(190)   ch'ume'y 'u-mrgrmry k'i we'yon
            then Coyote thought how   3-pretty.itr   art girl
            How very pretty that girl is. Wood (2007, 192, ex 52)

• Wood points out that the Repetitive does not necessarily give an atelic interpretation: "the repetitive does not impose a specific boundary on the event but simply allows bounded interpretation in context."

• Wood (2007, 153-7): Have cases of distribution over objects, stative or unaccusative subjects for the repetitive in Yurok (of the type *be broken pl S. or sg.S pl times* (unexpected for event-internal plurality).

• Wood (2007, 168-9): some iteratives have repetitive-like meanings. However, these verbs present problems for the formation of the repetitive (by reduplication) Wood (2007, 171-3), so the iterative may be used as an alternative.

• The event-external pluractional is compatible with an activity that is coerced into a bounded interpretation of activity (i.e. activity occurring for a limited period on each occasion, e.g. fishing+iterative).Wood (2007, 178)

• The event-external pluractional can indicate relatively continuous repetition with motion verbs Wood (2007, 179)

(191)

yohpol-	to fly in a circle	y**eg**ohpol-	to fly in circles
kwomhlenekw-	to drift back	kw**eg**omhlenekw-	to move back and forth on the water
kwomhlech-	to turn back	kw**eg**omhlech-	to walk back and forth

        Wood (2007, 179, ex 40)

• Repetitives in Yurok are more restricted in the Aktionsarten that they can combine with than Iteratives (Wood, 2007, 183, Table 4.2.)

(192)

Aktionsart	Repetitive	Iterative
Activities	no	yes
Accomplishments	no	yes
Run-up achievements	no	yes
Other achievements	yes	yes
Semelfactives	yes	yes
States	yes (participant plural only)	yes

• Wood (2007, 251): "Yu (2003) and Xrakovskij (1997b, 60) take this inherent un-boundedness to be a necessary property of pluractionality. While it may be a common characteristic of pluractional use the Yurok data have shown that it is not a necessary one [...]."

• Wood (2007, 249) "In Yurok, the complex event produced by an event-internal pluractional can have a single goal or completion, [see Wood (2007, 180-1), PCH] in which case its interpretation is much like an accomplishment (extended in time but with a final boundary). [] The same is not true in Chechen."

• Mithun (1988b) cites a different morpheme as indicating participant plurality:

(193)   Yurok (Robins 1958, 42) (cited from Mithun (1988b))

    a. *cwinkep*   "speak"
       tohkow   "talk together, converse"
       cwinkepoh "several speak"

    b. *nep*   "eat"
       ʔeʔgah "have a meal together"
       nepoh "several eat"

4.8   Niuean (Abdolhosseini, Massam & Oda 2002): Aktionsart & interpretation

• In Niuean reduplication is not agreement, it fulfills all the criteria discussed in Durie (1986) (Abdolhosseini et al., 2002, 477)

• In Niuean have different patterns of reduplication (Abdolhosseini et al., 2002, 480, ex 11)

(194)   a. full:
       kulami 'to blink' ⟶kulami-kulami 'to blink repeatedly'
    b. monomoraic prefix: $\mu - \sqrt{}$ Root
       kika 'to pull carelessly, to jerk' ⟶ki-$\sqrt{}$ kika 'to pull carelessly, to jerk, to

push'
amo 'to care for one thing to touch one thing only' —→a-$\sqrt{}$ amo 'to touch'
keu 'to be crooked, to be bent' —→ke-$\sqrt{}$ keu 'to turn'

   c. bimoraic prefix: $\mu\mu - \sqrt{}$ Root
   fanahi 'to apply something hot as a treatment for sickness' —→fana-$\sqrt{}$ fanahi 'FREQ'
   kiliviko 'to wriggle, to squirm' —→kili-$\sqrt{}$ kiliviko 'INTENSIVE'

   d. bimoraic suffix: $\sqrt{}$ Root- $\mu\mu$ gatata 'to rattle' —→$\sqrt{}$ gatata-tata 'FREQ' lapiga
   'to be better, to improve' —→$\sqrt{}$ lapiga-piga 'INTENSIVE'

• Phonological conditioning is unconvincing since many roots allow for more than one type of reduplication (Abdolhosseini et al., 2002, 480, ex 13):

(195)   a. fuevt. 'to swat s.t. with a fly-whisk, to whisk s.t.'

      i. fue-fue 'FREQ: to chase away bothersome insects'
         Fuefue e tau lago he tau mena kai.
         'Chase the flies from the food.'

      ii. fu-fue to 'chase away bothersome insects' (refers to a single motion)
          Fufue e tau lago he tau mata tama.
          'Chase the flies from the baby's face.'

   b. fagahua vi. 'to move about'

      i. faga-fagahua 'FREQ: to move about'
         Kua fagafagahua tumau e tau lima haana ti nâkai maeke foki ke nofo noa.
         'His hands move about all the time and he cannot sit still.'

      ii. fagahua-hua 'to move'
          Nâkai fagahuahua a ia he mohe.
          'She is not moving in her sleep.'

• Semantically, pluralization will have a different effect on a verb, depending on its aspectual class (Abdolhosseini et al., 2002, 488). (These generalizations do not account for all cases Abdolhosseini et al. 2002, 490)

(196)   a. If an achievement is pluralized, it will yield an iterative or frequentative reading, because an achievement can only be pluralized, that is, have its quantity augmented, by repetition, given the necessarily completed nature of a single achievement. Usually, the morpheme involved will be a bimoraic prefix.

b. If a state is pluralized, that is, has its quantity augmented, then it will not involve iteration, because iteration of phases of states is not plausible (for example, ? 'to be red/warm/tall over and over again').

c. Process verbs are like states in that they do not involve any clear end points, and hence they will yield the intensification reading, usually by means of bimoraic suffixation.

d. Accomplishment verbs are largely change of state or location verbs. Such verbs cannot simply be iterated. [...] if one eats an apple, it is impossible to eat that apple again.

In order for a change of state or location verb to be iterated, it is necessary for there to be more than one of the relevant affected arguments, so the actions can be distributed over these arguments (Corbett 2000 also notes this.).

Thus it can be seen that accord falls out from the semantics of iterativity over accomplishment verbs.

4.9 Karitiana (Müller & Sanchez-Mendez 2008): simplex vs. plural verbs

• Karitiana is the sole surviving language of the Arikén family, Tupi stock (Müller and Sanchez-Mendez, 2008) (350 speakers).
• SVO language: embedded clauses are V-final, main-clauses are verb-second (Müller and Sanchez-Mendez 2008, 442 citing Storto 1999, 2003).

• Noun phrases in Karitiana are not marked for number and there are no determiners or quantifiers. Numerals are best analysed as adjuncts as they are not tied to the NP constituent Müller and Sanchez-Mendez (2008, 442-3).
Note that this means that we cannot test for the distribution possibilities of plural DPs and cardinal+N-complexes in Karitiana.

• A simplex verb with bare arguments can have all possible readings:

(197) Taso naka'yt   boroja (Karitiana)
       taso ø-naka-'y-t   boroja
       man 3-DECL-eat-NFUT snake
       Men ate snakes.
       Literally: an unspecified number of men ate an unspecified number of snakes an unspecified number of times.

• With numeral adjuncts get the following possibilities

(198)   Sypomp aluno   namangat   sypomp õwã (Karitiana)
        sypom-t aluno   ø-na-mangat-ø   sypom-t õwã
        two-OBL student 3-DECL-lift-NFUT two-OBL kid
        Two students lifted two kids. (together, or one each or any of the possible
        cumulative combinations any number of times).
        Students lifted two kids twice.
        Not: Two students lifted two kids each.

• Pluractional markers in Karitiana are usually expressed by reduplication Müller
and Sanchez-Mendez (2008, 447).

(199)   a. Õwã nakakot   sypomp opokakosypi (Karitiana)
            õwã ø-naka-kot-ø   sypom-t opokakosypi
            kid   3-DECL-break-NFUT two-OBL egg
            'The kid broke two eggs'
            Context: the two eggs at the same time
        b. Õwã nakokonat   sypomp opokakosypi
            õwã ø-na-kot-kot-a-t   sypom-t opokakosypi
            kid   3-DECL-break-RED-verb-NFUT two-OBL egg
            'The kid broke two eggs'
            Context: one at a time Müller and Sanchez-Mendez (2008, 448, exs 19-
            20).

• Müller and Sanchez-Mendez (2008, 449): "pluractional affixes in Karitiana per-
form a pluralization operation on cumulative verb denotations – they exclude atomic
events from the denotation of verbs".

• In other words: simplex verbs can refer to plural events or singular events, redu-
plicated verbs can only denote plural events.

• Prediction 1: pluractionality should be possible for any sentence denoting two or
more events and not only for sentences denoting a significant number of events.
Müller and Sanchez-Mendez (2008, 450)

(200)   Sypomp nakaponpon   João sojxaty kyn
        sypom-t ø-naka-pon-pon-ø   João sojxaty kyn
        two-OBL 3-DECL-shoot-RED-NFUT João boar   POS
        'João shot twice at boars' Müller and Sanchez-Mendez (2008, 450, ex 29)

• Prediction 2: sentences with distributive readings of singular objects should not
allow pluractional affixes Müller and Sanchez-Mendez (2008, 451)

(201) a. Tamyry   tamyry   nakahit   õwã myhint kinda'o
           ta-myry   ta-myry   ø-naka-hit-ø   õwã myhin-t kinda'o
           3ANAPH-POS 3ANAPH-POS 3-DECL-give-NFUT kid one-OBL fruit
           'Each child gave one fruit.' (simplex verb)

       b. *Tamyry   tamyry   nakahithidn   õwã myhint kinda'o
           ta-myry   ta-myry   ø-naka-hit-hit-ø   õwã myhin-t kinda'o
           3ANAPH-POS 3ANAPH-POS 3-DECL-give-RED-NFUT kid one-OBL fruit
           Intended: 'Each child gave one fruit.' (reduplicated verb)

• The pluractional operator cannot yield phrasal distributivity (cannot distribute over the subject), the subject in the following examples can only be a collective agent, so a pluractional verb with a singular object is not interpretable:

(202) a. Luciana Leticia nakam'at   myhint gooj
           Luciana Leticia ø-naka-m-'a-t(??)[sic!]   myhin-t gooj
           Luciana Letícia 3-DECL-CAUS-build-NFUT one-OBL canoe
           'Luciana and Leticia built one canoe'
           ok: Collective reading
           not: Distributive reading

       b. *Luciana Leticia nakam'abyadn   myhint gooj
           Luciana Letícia ø-naka-m-   'a-by-'a-t   myhin-t gooj
           Luciana Leticia 3-DECL-CAUS- build-?-RED-NFUT one-obl canoe
           'Luciana and Leticia built one canoe'
           not: Collective reading (as one collective event of building one canoe is
           not in the denotation of the pluractional verb: a pluractional verb can
           only refer to multiple events)
           not: Distributive reading Müller and Sanchez-Mendez (2008, 452, exs 38-
           39).

4.10   Klamath (Stegnij 1997, Lasersohn 1995): different markers

• Different types of reduplication to indicate plurality of objects /actions and intensity / extra duration of actions Stegnij (1997, 131)

(203)   For verbs in Klamath have the following possibilities Stegnij (1997, 131)
       a. initial syllable (CV or CCV sequence) (this is the morpheme examined by
           Lasersohn 1995, 257-264)
       b. whole stem
       c. first short vowel in a verb stem (only for verbs)

    d. one or two initial consonants in directive/ locative and in two verbal suffixes with the meanings of "durative" and "past stative" in verbs

    e. the whole verb

• Stegnij (1997, 132) considers each reduplicant separately, each of them has its own constant meaning.

(204)   a. R1: discontinuous plurality Stegnij (1997, 132)

       b. R2: reduplicates mostly non-terminative stems and it can denote either a multiplicative action e.g. *fidget, flicker* or a permanent property Stegnij (1997, 135)

       c. R3 lengthens the short vowel in terminative verbs (and in certain no-terminative verb stems occurring normally with R2), denotes a simultaneous or successive multiple action directed either at plural homogeneous objects or at different parts of the same object.

       d. R4: one or two initial consonants in directive/ locative and in two verbal suffixes with the meanings of "durative" and "past stative" in verbs and denotes repeated action Stegnij (1997, 136)

(205)   a. The multiplicative is expressed by R2 and R4 and by two specialised morphemes -ʔ- "repeatedly, again and again" and *pbeeĺi-* "back and forth"

       b. The distributive is expressed by R1, R2 and R3 and also by some adverbials. Stegnij (1997, 138)

       c. The iterative is expressed by R1, by the suffix -*damn*- and by a number of adverbials denoting cyclicity or habituality. Stegnij (1997, 138)

       d. Iteration of multiplicative and distributive verbs is possible when R1 occurs, which is very common, with verbs reduplicated already by R2 or R4 (multiplicative iteration) or R3 (distributive iteration). Stegnij (1997, 141)

• Lasersohn (1995) only considers the R1-reduplicant and gives the following description:

(206)   a. Readings identified by Barker (1964) [of the R1-reduplicant, PCH] Lasersohn (1995, 258)

          i. action by a single actor upon distributive objects

         ii. action by a single actor distributively upon a single object over a period of time

        iii.   action by distributive actors upon a single object

   iv. action by a single actor upon distributive objects

   v. action by distributive actors each upon its own object

   vi. action by distributive actors upon distributive objects

b. Examples containing quantificational phrases like *na:nok waytas* "every day" do not force a PA marking on the verb (i.e. the R1-reduplicant)

c. If the agent is singular no reading indicating action by multiple agents exists —→a temporal reading is forced.

d. If the agent is plural that may make participant-based readings more prominent. Lasersohn (1995, 260)

e. Barker notes that "when the idea of singleness or groupness of action is meant" the pluractional marker does not appear.Lasersohn (1995, 260)

f. there is no reduplication for intrinsically collective predicates.Lasersohn (1995, 260)

g. When an action is performed by inanimate or non-rational entities, the pluractional marker is optional and occurs as "a strong emphatic marker of 'distributiveness'" Lasersohn (1995, 261) citing Barker

h. The pluractional marker has a spatial reading "here and there". Lasersohn (1995, 261)

4.11 Central Pomo (Mithun 1988a/b): multiple markers

• Central Pomo has several means of marking verbal plurality: stem alternations, multiple-event markers, collective agent marker. These markers can combine.

(207) Central Pomo Mithun (1988b, 217, ex. 12)

   a. ʔnée-   l-   m
       throw.one.object down sg.imp
       Throw it down!

   b. mča-   la   -m
       throw.multiple.objects down sg.imp
       Throw them down!

   c. mča-   la   -ta   -m   -meʔ
       throw.multiple.objects down multiple.event collective.agency sg.imp
       Throw them down!

• singular and plural stems are "simply alternating lexical items"

(208) Stem alternations Mithun (1988a, 521-2)

  a. yów "(one) went"
   hlíw "(several) went"

  b. čač' "(one) ran"
   mačʰáw "(several) ran"

  c. čadíw "chase (one)"
   časáw "chase (several)"

• Mithun (1988b, 224): the suffix -*ta̯* might at first appear to mark multiple subjects on intransitive verbs and multiple patients on transitive verbs

(209) Central Pomo Mithun (1988b, 224, exs 29, 30) Mithun (1988a, 525, ex 18)

  a. ʔaa madúmač' "I woke up"
   ya madúmač'ṯam "we woke up"

  b. čʰáw "(one tree) fell"
   čʰáṯ' "(several trees) fell"

  c. ts'iič'kam "fold it"
   ts'iič'ṯáakam "fold lots of things"

• Mithun (1988b, 225): "However, the suffix -*ta̯* is actually a mutliple event marker." "The suffix appears only when several separate actions are predicated." (repeated action ⟶event-external plurality)

(210) Central Pomo Mithun (1988b, 225, exs 31-32)

  a. ʔaa múuṯu manáač'
   I him pay.semelfactive
   I paid him.

  b. ʔaa múuṯuyal manáač'
   I them pay.semelfactive
   I paid them. (The work crew received a single check jointly.)

  c. ʔaa múuṯuyal manáataayṯaw
   I them pay.multiple.event.multiple.displacement.aspect
   I paid them. (Each worker was paid individually.)

• Mithun (1988a, 524): A verbal suffix -*ma* appears with transitive and intransitive verbs with plural agents. [...] its function is to indicate joint or collective effort." (does not occur with plural patients of intransitives)

(211) ṯoo dawáymaw "they woke me up"
  ṯoo dawáy "it woke me up"
  (Central Pomo Mithun (1988a, 524))

• Mithun (1988a, 527) "Single events with repetitive internal structure are distinguished by a special form: reduplication." (used to "characterize the internal structure of the action")

(212)   a.   pʰdípʰiw "(one) jumped rope"
             pʰdíw   "(one) jumped"

        b.   dalidaliw "wave (hand back and forth"
             ʔtʼóʔtʼow "applaud"
             (Central Pomo Mithun (1988a, 527))

4.12   Émérillon (Rose 2008): two plural markers

• Two types of reduplication in Émérillon Rose (2008) (English translation of the glosses by PCH) [16]

(213)   a.   Monosyllabic reduplication: first syllable

             fre   waɲe   aŋ o-pi-pinõ (Émérillon)
             brother constantly DEM 3-RED-fart
             Brother, that one doesn't stop farting. Rose (2008, 128, ex 12)

        b.   Bisyllabic reduplication: last two syllables

             pulelu zawal-a-kom-a-l-ehe o-maʔẽ-maʔẽ kiʔi (Émérillon)
             toad   dog-a-pl-a-reln-postp 3-RED-look.at then
             Then he looks at the toad and the dog. Rose (2008, 128, ex 13)

• Rose (2008, 129): the two reduplications correspond to two different types of event plurality (for other Tupi-Guarani languages see references cited there).

(214)   Monosyllabic reduplication: event-internal repetition Rose (2008, 133-6)
        a.   plural arguments seem to be interpreted collectively
        b.   can appear with a PP indicating a sequence of events:

             tapug ze-kapilel-ne   ʔi-b   o-po-pol   o-ho-ŋ (Émérillon)
             splash refl-behind-contrast eau-dans 3-RED-jump 3-go-pl
             They dive into the water one after the other.

(215)   Bisyllabic reduplication: event-external repetition Rose (2008, 136-9)
        a.   repetition of a process in several discrete occurrences separated by gaps

             awa-tipo   e-l-emiʔõ   o-baʔe-ba   ʔe-maʔẽ (Émérillon)
             who-inter.excl 1sg-reln-meal 3-RED-make-rel

---

[16]Reduplication only copies open syllables *a-iɲu-inɲuŋ* not **a-iɲuŋ-inɲuŋ*, Rose (2008, 128, ex 14)

Who makes my meal (every time I go hunting)? Rose (2008, 137, ex 39)

b. object interpreted collectively Rose (2008, 139)

c. subject can be interpreted distributively Rose (2008, 139)

nani kuʤabulu-am o-tui-tuiŋikiʔi   (Émérillon)
so   siren-transl   3-RED-become-pl then

It is like this that they became sirens. Rose (2008, 139, ex 48)

• Notice that sequential expressions do not necessarily imply distribution:

(216)   They were standing **in line**.

(217)   The plates were stacked **on top of each other**.

• Temporally distributed event plurality.

• Rose (2008, 141): synchronically the division between the two reduplications is being blurred in Émérillon since mono-syllabic reduplication is less productive.

• Rose (2008, 141): While the mono-syllabic pattern expresses event-internal plurality, the bi-syllabic reduplication is predominantly used for event-external plurality, but it can also express event-internal repetition.

4.13   Sandawe (Khoisan) (Kießling 2002)

• Sandawe: Khoisan language spoken in Tansania, Kießling (2002).
• Plural marking in Sandawe verbs

(218)   a. the plural stem in *–waa* which does not show person agreement, but indicates the plurality of participants, objects or subjects, depending on the case frame of the verb,

b. the iterative (or pluractional) stem in *–im* which indicates a temporal extension or repetition of the event

c. Also have concord marking person gender and number for subjects and objects (Kießling, 2002, 201, Table 1)

• The iterative has narrow scope with respect to the object Kießling (2002, 202)

(219)   a. The iterative marker *–im* on the other hand indicates that the event is repeated several times, possibly habitually, e.g. *ts'�òk'ìsê* 'chase' derives an iterative stem *ts'�òk'ìmsê* which implies that one object, e.g. a single animal, is chased several times.

     b. If it should be indicated though that several animals are being chased, the iterative is not appropriate any more and the suppletive plural stem *tɬ'ı̃isê* is needed instead.

• Lexicalised iteratives

(220)   a. |ʰéem 'sweep'
       b. |'ìm 'clear a field'
       c. ɬòom 'cultivate'.

(221)   The iterative could also
       a. imply a temporal extension of the event,
       b. take over durative function or
       c. might even extend into the aspectual domain in that it signals imperfectivity (Kießling (2002, 202) citing Elderkin 1994)

• Difference iterative / plural stem Kießling (2002)

(222)   a. the iterative highlights the plurality of the event or its temporal extension
       b. the plural stem highlights the plurality of the participants.

• Plural stem marking is dependent on intransitive subjects and transitive objects Kießling (2002, 203)

(223)   a. *dʒìxé* 'rot', ‡*ó̰o* 'be cut' and *kwàpé* 'sprout, blossom'
       b. tʰě-yâ   kwàpé
          tree-NOM blossom
          'The tree has blossomed.'
          tʰě-yâ   kwàpé-wâa
          tree-NOM blossom-PL
          'The trees have blossomed.'
       c. ŋ|óo "fear", ŋ‖óo "milk"
          ʔùmbù-s   ŋ‖óo-wé
          cow-s1sg.pf milk-sg
          I have milked a cow.
          ʔùmbù-s   ŋ‖óo-wâ
          cow-s1sg.pf milk-pl
          I have milked cows.
       d. A plural subject does not count Kießling (2002, 208)
          gélé   tʰěe-yâʔ   a̰ŋ|ěe.
          baobab tree-S.3pl.RL cut.SG

‘They have cut down a baobab.’

e. gélé   tʰĕe-yâʔ   a̦ŋ|ĕe-wáa.
baobab tree-S.3pl.RL cut-PL
‘They have cut down baobabs.’
They have cut a baobab into several pieces (resultative reading). ex 15a/b
Kießling (2002, 208)

• Kießling (2002, 215) Distributional restrictions on the alternation of suppletive verb stems [...] are very rigid. People insist that only the sentences where number features match are correct, whereas those that display a mismatch of number features in the syntactic subject and the suppletive verb stem are wildly ungrammatical in spite of correct number agreement in the inflectional endings.

(224)   a. ŋ|èmésée tɬàas-â   / *ɬàaté / *ɬàat-â.
man   die.SG-S.3M.RL / die.PL / die.PL-S.3SG.RL
‘A man has died.’

b. ŋ|òmósóo ɬàaté
people   die.PL
‘People have died.’

c. ŋ|òmósóo ɬàat-âʔa̦/   / tɬàas-ì / tɬàas-âʔa̦...
people   die.PL-S.3PL.RL / die.sg / die.SG-S.3PL.RL
‘People have died.’

• Actually the use of the plural stem with a plural subject is more important here than the use of the inflectional ending for 3pl which could be omitted without problem as seen in (22b).
• Notice that as expected, the plural -*waa* can distribute single events to the individuals (compatible with once-only predicates as *die*).

• For the iterative, there are no conclusive examples.

4.14   Aleut (Golovko 1997): several markers

• Aleut is the only language of the Aleut branch of Eskaleut language family, spoken both in Russia (the Commodore Isles) and in the USA (the Aleutian Isles and the Pribilov Isles).

(225)   a. three suffixes express **multiplicative meaning** in Aleut Golovko (1997, 71) -*mix-/-miga–mixta, -za-/-da-* and -*la*

b. The suffix -*mix-/-miga–mixta* triggers an aspectual change of the verb-stem: it turns a terminative stem into a non-terminative one

(226) two suffixes express the meaning of **distributive plurality** (over subjects and objects) in Aleut *tux̂-/tux̂sa-* and *-la-*

    a. The suffix *-la-* can distribute down to individuals

      i. haanu-s   asx̂a-ku-s
        salmon-pl die-real-3pl
        The red salmon fish have died.

      ii. haanu-s   asx̂a-la-ku-s
        salmon-pl die-dist-real-3pl
        The red salmon fish have died (one after the other). Golovko (1997, 74, ex 19)

    b. The behaviour of the suffix *-tux̂-* / *-tux̂sa-* is less clear:

      i. ua[sic]-mdix ilagaan xaadagnaax̂s hit-na-s
        house-3pl.ref from   running   go.out-past-3pl
        They ran out of their house.

      ii. la[sic]-mdix   ilagaan xaadagnaax̂s hi(t)-tux̂sa-na-s
        house-3pl.ref from   running   go.out-dist-past-3pl
        They (many of them) ran out of their house. Golovko (1997, 74, ex 17)

      iii. qidu-x̂   qigag-na-x̂ vs. qiiga-s qigax-tuĝ-na-s
        robe-sg.abs cut-past-3sg   grass-pl cut-dist-past-3sg[sic 3pl?]
        He cut the rope.   vs. He cut the grass.

(227) The quasi-distributive: The suffix *-la-* joining one and the same stem presents variations of the distributive meaning which depend upon the number of participants involved in the situation Golovko (1997, 78)

    a. qingu-la-qa-ning
      kiss-dist-past-them.I
      I kissed them (one after the other) (object distributive)

    b. qingu-la-qa-ng
      kiss-dist-past-her.I
      I kissed her (in many places or time after time) (object quasi-distributive)
      Golovko (1997, 78, ex 35a/b)

(228) The two distributive suffixes can combine within one word-form:

hakaan   kangagaan qugana-s ax-tux̂sa-la-ku-s
from.up.there from.top   stone-pl fall-dist-dist-real-3pl

The stones are falling down from the top. Golovko (1997, 79, ex 39)

(229) It is likely that this combination represents a sort of a double distributive:
(i) *tux̂-/tux̂sa-* indicates that several participants are performing an action at a fixed moment of time, and
(ii) *-la-* indicates that there are several such distributive actions which are performed successively one after the other.
The examples of this combination are not numerous. Golovko (1997, 79) |ex
The distributive affixes are likely to influence the aspectual chareacteristic of the basic stem, but this interaction seems to be quite intricate [...] Golovko (1997, 74)

(230) Causativity distinguishes plurality of situations:
-dgu- causality and distributivity
-ya- causality and multiplicativity
-t- one causative situation

(231)   a. The iterative marker *-za-* may combine, without any restrictions, with each of the plurality of situation markers *-mix-/miga-/mixta-, -tux̂-/ tux̂sa-* and *-la-*. Golovko (1997, 84, ex 35a/b)

   b. qilax̂tal qilaa   tayaĝu-s hax̂(t)-tux̂sa-za-na-s
      early   morning man-p   get.up-dist-iter-past-3pl
      The men got up early in the morning. Golovko (1997, 84, ex 62) l

4.15   Other languages

• **Washo** (Like Tahoe, California & Nevada) Yu (2009)

(232) Washo: Two patterns of reduplication, two patterns of verbal plurality

   a. partial reduplication, various meanings depending on the context (repeated action)

      i. repetitive: biŋíŋil- (< biŋil-) to try repeatedly

      ii. distributed:
          gepúpuʔi (< ípuʔ- "to find") he found several things in several places
          gašášdɨmi (< ášdɨm- "to hide") he is hiding things in different places

      iii. durative: duwéweʔ(< ípuʔ) to keep trying to

      iv. multiple participants: mémeʔi (<ímeʔ- "to drink") they're drinking

   b. full reduplication (repetitive action)

      i. majority of fully reduplicated stems are adjectival: (ex 4)
         túltul- "coarse", púypuy- "thin", hú:hu- "striped", háwhaw- "light", tóʔtoʔ"gray"

    ii. ononomatopoetic verbs: wétwet- tp quack" ziŋi:ŋi- "to ring"

    iii. semelfactive actions that prototypically occur in multiple consecutive iterations

• **Itonama** (Lowland Amazonian Bolivia) Crevels (2006)

(233) pluractional marker *-'ke* marks event plurality (rather than participant plurality)

    a. sih-k'i-ma-doh-ke   upa'u
        1pl.excl-inv-hand-bite-pl dog
        the dog bit us (several times) on the hand. (p. 167)

    b. ubuwa bah-na'ke ihwana
        person hit-neu-pl Juan
        The man hit Juan (several times).

(234) *-'ke* can mark participant plurality if event plurality is already indicated by another strategy (p.167)

• **Datooga** (Nilotic): (Kießling 1998) Southern Nilotic language family
• In Datooga verbal stems can derive a pluractional stem.

• The pluractional stem in Datooga can mark

(235) a. repetition of an action by several agents
      b. repetition of an action on several patients
      c. repetition of an action by the same agent on the same object
      d. repetition of an action by two agents changing agent/patient roles (reciprocal)
      e. intensity
      f. duration

(236) a. náaŋùci
        naa-   ŋud-   ji   (Datooga)
        s1sp.pf stechen s1sg.A
        I pierced him (once).

      b. náaŋdàyi
        naa-   ŋud-   ay- i   (Datooga)
        s1sp.pf   stechen plur s1sg.B
        I pierced him (more than once). (see 235c)
        I pierced many. (see 235b), ex 1a/b in Kießling (1998, 2)

• In some cases the pluractional stem is syntactically obligatory (e.g. if a plural object is present) Kießling (1998, 2)

(237)   a. lóoda   ŋúta (Datooga)
            lood-   a   ŋuta
            pull-out IMP.SG   spear
            Pull-out the spear!

        b. lóota   ŋútkáaka (Datooga)
            lood-   C?-   a   ŋutkaaka
            pull-out PLUR IMP.SG spears
            Pull-out the spears! Ex 3a/b in Kießling (1998, 2)

• The pluractional stem can also express an *integral* ("ganzheitlich") reading

(238)   a. náaràci
            naa-   rad- ji
            s1sg.pf   tie   s1sg.A
            I tied her/him (e.g. one arm).

        b. náarádày
            naa-   rad- ay-   i
            s1sg.pf   tie   plur s1sg.B
            I tied her/him (the whole body). Ex 4a/b in Kießling (1998, 2-3)

• **English** Cusic (1981, 244): Lexical verbs indicating verbal plurality in the form of *small repetitive action or motion* often involve the old iterative suffixes *-er* and *-le* (citing OED)

(239)   a. chatter, clamber, flicker, glitter, mutter, patter, quaver, shimmer, shudder, tinker, wander
        b. crackle, crumple, dabble, dawdle, nestle, niggle, paddle, sparkle, twinkle, wrestle, wriggle

• These verbs are atelic: they combine with *for a minute*, not *in a minute*.
• Notice that this is not true for other English verbs that are considered lexically plural:

(240)   a. He scattered his father's ashes in a minute.
        b. He finished scattering his father's ashes.

• For further reading see works, e.g. on Bole Gimba (2000), Cuzco Quechua Faller (to appear) , Semitic Greenberg (1991), Kartvelian Tuite (1988), and contributions to Xrakovskij (1997b) on Asiatic Eskimo Vaxtin (1997), Chamalal Plungian (1997), Chukchee Nedjalkov et al. (1997), Evenki Nedjalkov (1997), Itelmen Volodin (1997), Nivkh Gruzdeva (1997).

4.16   Summary

In what follows I summarise the properties that have appeared in the descriptions above.

     When there is evidence either way I note the example number, if there is no data I mark the cell with %.

(241)   a.   PA= pluractional marker

         b.   many interpretation: not good with precise (small) cardinals

         c.   distribute over subject: can be used if each member of a plural subject only is involved in one event

         d.   distribute over object: can be used if each member of a plural object only is involved in one event

(242)

Properties	
V+PA is atelic	
"many" interpretation	should distinguish many-adv: no cardinal adverbs and many-arg: no cardinal arguments
obligatory plural argument	difficult if there is no nominal pl
repetitive action reading	
repeated action reading	
distributive readings for V+PA	
distribute over pl subject	
distribute over pl object	
distribute over places	
distribute over times	
coordinated sgs possible	
multiplication of indef sg object	
distributive readings for V (simplex)	

• So we can fill in the (preliminary) Table of properties as follows (needs to be re-checked against full range of examples in the original sources):

	Squamish CVC	Squamish CV	Chechen	W Greenlandic	Hausa	ǂHoan q//o	ǂHoan -tcu	Yurok Iter	Yurok Rep	Karitiana
atelic	%	%	yes	yes	%	%	%	no	no	%
many-arg	?	%	yes (140) (140)	%	yes/no (161) (162)	%	%	%	%	no
many-adv	?	%	yes (141)	yes	no (160)	%	%	no (187)	%	no (200)
oblig pl arg	no (114) (116d) (118b)	no (122)	yes (133c) no (134)	no (151a)	yes (161) (162)	no	no	no (185)	%	no (56c)
ev-int	no (118a)	yes	yes (135)	%	yes (162)	no	no	no (184)	yes (184)	no
ev-ext	yes (118a)	%	yes	yes (151a)	yes (161)	yes	yes	yes (184)	no (184)	yes (56c)
Distribution properties of pluractional markers										
D-subj	no (118)	%	yes (133a) yes (137)	yes (151a)	yes (161)	no (171)	yes (176) (177)	%	%	%
D-obj	%	%	yes (133a)	%	yes (55)		yes (175) (177)	%	%	%
D-place	% %	%	%	%	yes (55)	yes (obl) (170)	not obl (174)	no		%
D-time	% %	%	%	yes	yes (55)			yes (186)		%
coord sg	%	%	no (140)	% %	yes (162)					no
Distr Vsg	? (128)		?	no (for t)	yes	yes (167)		%		no

? = not known

% = no evidence

• Wood (2007, ch3) Generalisations concerning event-external and event-internal pluractionals.

(243)   a.   Certain Aktionsarten are incompatible with event-internal pluractionals: (accomplishments and run-up achievements[17]).

      b.   All types of verbs can occur with event-external pluractionals

4.16.1   The "many" interpretation

• It is often noted in the literature that marking of iteration and specification of the exact number of iteration is not felicitous Dressler (1968, 89, §68)

(244)   Ähnlich bewirkt beim Verbum die genaue Quotiensangabe den Ersatz des Iterativums durch das Simplex. *Už som t'a tri razy volala* ich (fem) hebe dich schon drei Male gerufen" kann das Simplex nicht durch das Frequentative *volavala* ersetzt werden, wohl aber durch das impfv. *vyvolavala* "ausgerufen". Ebenso kann man zwar často robili und robievali sagen ("sie arbeiteten oft"), aber nicht *pät' ráz* "fünf Male".

• For another formulation of the same idea consider Yu (2003, 303),

(245)   A priori, there is no reason to think that pluractional verbs, which supposedly signify repeated actions, should be incompatible with the explicit mention of the number of iterations, as long the number of iterations is more than one. However, as noted by Xrakovskij (1997b), this incompatibility is observed crosslinguistically. Yu (2003, 303)

• Van Geenhoven (2004, 2005) essentially formalises the same point in treating frequentatives, continuatives and iteratives as **unbounded** pluractionality, and cardinal temporal adverbs as expressing **bounded** pluralities

(246)   a.   Pluractional predicates are like mass nouns (i.e., cumulative) and it is this that makes them unbounded and therefore atelic Van Geenhoven (2004, 143)

      b.   The [cardinal adverbs like *twice, several times*] express a bounded the [frequency adverbs like *regularly, every now and then*] express an unbounded plurality of events Van Geenhoven (2005, 120)

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[17]Wood (2007, 133): "Croft (in prep. 15) terms verbs like *arrive*, which can occur in the progressive *run-up achievements*". Run-up achievements are typically understood as involving a process phase while simple achievements do not.

• These conclusions suggest that in many languages pluractionals are atelic (do not have an inherent endpoint) and therefore express an unbounded plurality.

• Like atelic predicates, those pluractionals are then incompatible with the specification of an exact number of repetitions.

• The data from Hausa given by Součková and Buba (2008) discussed above show that this need not hold for every use of a pluractional marker: the high degree pluractional is possible with a plural subject that does not satisfy the "many" requirement (exs of the type *A & B were very alarmed*).

• The data reported in Dressler (1968) that reduplication in Hausa can be combined with exact number of repetitions and exact number of objects also suggest this (see (160).

Summary

(247) a. The many-requirement seems to capture an important cross-linguistic tendency.

     b. The many-requirement bears on cardinal adverbs, subjects and objects.

     c. When examining this requirement for **distributive** interpretations need to take into account:

       i. compatibility with cardinal adverbs *twice, several times*

      ii. compatibility with cardinal arguments (subjects, objects)

      iii. compatibility with simple coordinations as arguments (*A and B*)

     d. **Collective** interpretations can be combined with a cardinal adverb: The hunters massacred the boars twice.

4.16.2   Atelicity

• Testing for atelicity can be difficult if the language does not have the equivalent of the *in an hour/ for an hour* test.

• Compatibility with cardinal adverbs does not bear on this since they can indicate the number of iterations of an atelic event:

(248) She travelled along the Nile twice.

(249) She listened to music twice.

4.17　The analysis of pluractionality in Lasersohn 1995

• As it is taken as a starting point by many papers, I will briefly discuss the analysis of pluractionals in Lasersohn (1995).

• Lasersohn (1995, 244,257)

(250)　Lasersohn (1995, 244)

    a.　repeated action: multiple events of the type denoted by the verb
John hit the ball over and over.
V= hit, multiple action = multiple hits
the multiple event is described by the V

    b.　repetitive action: multiple events of a different type, but which sum up to form a single token of the event-type corresponding to the verb
The mouse nibbled the cheese.
V= nibble, multiple action = multiple small bites
the multiple event is described by another predicate that is lexically associated with V
V= nibble ⟶lexically associated event: small bites

• One version of the formula proposed in Lasersohn (1995) is the following:

(251)　a.　V-PA(X) $\iff \forall$ e, e' $\in$ X [P(e)
& $\neg K(e) \circ K(e')$
& $\exists$ t [between(t, $\tau(e), \tau(e')$)] & $\neg\exists$ e" [P(e") & t = $\tau(e'')$]]
& card(X)$\geq n$

with **K** = temporal trace or spatial trace or participants of the event

• This may look unnecessarily complicated but in essence it contains the following statements.

(252)　a collection of events X is a plurality of events associated with V+pluractional marker if

    a.　all the events in X fulfill a certain predicate (can be V, can be lexically associated with V)

    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.　the events in X are separated by a temporal gap (no continuative reading)

    d.　there is a certain number (more than n) of these events

• I will now discuss some empirical questions that arise when we look at Lasersohn's formula.

4.17.1 Repetitive action vs repeated action

• Lasersohn (1995, 257) in his formula locates the difference between repeated action and repetitive action at the level of the iterated predicate P:

(253)   a. repeated P = V
        b. repetitive P = P is fixed lexically

• Wood (2007, 128-35): there are cases where $P{\neq}V$ is not a property of the pluractional but the result of the interaction of the pluractional with the semantics of the verb: for accomplishments and run-up achievements the pluractional operates on the process part of the lexical verb, without the inherent boundary.

• Wood (2007, 246-7) proposes that Chechen pluractionals have event external and event-internal semantics and that this is due to a shift between a grouped (collective) and an ungrouped interpretation for the plural.

(254)   a. event internal plural: a single event that is internally complex (a group, comparable to a collective)
        b. event external plural: a plural event that is a sum of individuals (a sum, comparable to a distributive plural)

4.17.2 Scope of the plural

(255)   What is the scope of the predicate V?
        a. Many people arrived.
            can the subject be different for each event?
        b. Each child ate an apple.
            can the object vary between events?
        c. This seems to depend on the form of the object (bare plurals are more "distributable" than other indefinites, see Van Geenhoven (2004)):
            The children watched a film. (= same film) The children watched films. (= can each watch a different one).

4.17.3 Distributivity

• As Yu (2003, 302, FN 7) points out, both Lasersohn (1995) and Ojeda (1998) were mostly concerned with accounting for the **distributive** variant of verbal pluralization.
• In Lasersohn's formula this is apparent in his requirement that there be temporal

gaps between the events and that space/ participants do not overlap.

• To account for the different readings he observes in Chechen (frequentative, durative, distributive), Yu (2003) proposes that the plural operator is not similar to a count plural but to a mass noun.

5   Other verbal markers

• In this section I will look at other verbal markers that may express event plurality so that we can compare pluractional markers on the verb with other types of verbal markers (for nominal markers and adverbs see later sections):

(256)   From less to more peripheral to the verb-stem
      a. derivational iterative prefixes *re-*
      b. imperfective aspect
      c. auxiliary+verb
         i. universal perfects
       ii. aspectual periphrases (aspectual semi-auxiliaries)

5.1   Derivational iterative marker *re-*

• Notice that the plurality involved here is different from the plurality found with pluractional verbs.

• While the pluractionals we have seen before assert several repeated actions, these adverbs **presuppose** a previous instance of the action and only assert one more instance. (on presupposition see e.g. Saeed (1997, 101-109))

(257)   a. I reread the book.
        Presupposed: I had read I once before.

• Like *again* and its ilk, *re-* can have the restitutive reading (putting sth back into a previous state)

(258)   a. I closed the door again.
        The door was closed before.
      b. J'ai   refermé la porte.
        I-have re-closed the door
        I closed the door again.
        The door was closed before.

• But notice that the prefix and the adverb differ in their scope:

(259)   a. He reread a book.
        He read the same book twice (or more).
        Not: He read two books (or more). ("same" reading only)

b. He read a book again.
    He read two books (or more).
    There is a book that he read twice (or more). ("other" reading ok)

• There are other examples of verbal affixes in other languages that have this type of interpretation (presupposing one event and adding another).

• Dressler (1968, 63-4, § 30) cites Zoque as a language with a duplicative suffix *-keʔt-* (citing Wonderly 1951, 157-8), who calls the suffix *repetitive* which marks an "action repeated by the same actor or another actor" *he* ALSO *walked, he came* AGAIN.

(260) a. | witke ʔtu | "he also walked" | (V1 + 551 + 561);
          | kengeʔtu | "he also looked" | (V' + 551 + 561);
          | kengeʔtpa | "he also looks" | (V1 + 551 + 562);
          | mingeʔtu | "he came again" | (V1 + 551 + 561);
          | mingeʔtutih | "he came again" | (V1 + 551 + 561 + 741);
          | mingeʔtatih | "come again!" | (V1 + 551 + 563 + 741).

b. Wonderly (1951, 158) "When 551 occurs in sequences which have suffix 741, the action is repeated by the same actor (usually indicated in translation by *again*); when in other sequences the action may be repeated by the same actor or by another actor (usually indicated in translation by *also*)."

• West Greenlandic also has an event presupposing verbal affix: Van Geenhoven (2005, 115, ex 28)

(261) apaqqippoq (West Greenlandic)
       api-qqip-puq
       snow-again-ind[-tr]3sg
       It snowed again. (example from Fortescue 1984, 284)
       Van Geenhoven 2005: It snowed at t and there was a time t' (t' before t) at which it snowed and there is a hiatus between t and t'.

• There is no information on the scope behaviour with respect to negation (the presupposition test) and with respect to singular objects for the Zoque and West Greenlandic suffixes.

• Van Geenhoven calls the affix *-qqip* SINGULATIVE and explicitly identifies it as presuppositional.

• Based on the comparison with the markers described in Yu (2003); Van Geenhoven (2004) I would have assumed that being on the verb, both suffixes cannot multiply

an indefinite object. However, the data in Bittner and Trondhjem (2008) suggest that certain verbal affixes in West Greenlandic can have scope interaction with other elements of the sentence, so that the placement as a marker close to the verb does not seem to be sufficient to exclude scopal interactions.

5.2 Imperfectives and iteration

• Certain verbs give rise to iterative readings when combined with the imperfective.

• A pure iterative reading of V+imperfective is limited to punctual events that do not admit a preparatory phase associated to the change of state. Otherwise have a derived accomplishment:

(262) Pierre sortait   de la chambre (French)
      Pierre leave.IMPF3SG of the room

  a. iteration: Pierre left the room repeatedly
  b. (derived accomplishment) Pierre was in the process of leaving the room / was about to leave the room.

• So in order establish if a marker should be analysed as an imperfective or as a pluractional marker, we have to consider the possible interpretations with different lexical aspectual types (Aktionsarten).

• An example with a similar iterative flavour induced by a distributive prefix *po-* in Russian is given in Xrakovskij (1997b, 17, exs 45/46)

(263) a. Butylki **upali**   s   polki (Russian)
          bottles fall.PERF from shelf
          The bottles fell from the shelf.
       b. Butylki **popadali** s   polki
          bottles fall.PERF from shelf
          The bottles fell from the shelf (each one separately).

• Note that habitual imperfective sentences also have a *many*-ness requirement (of the adverbial type): It has been observed that habitual imperfective sentences are incompatible with iterative adverbs, while perfective tenses are compatible (see Lenci and Bertinetto (2000, 247) and references cited there).

(264) a. *Gianni andava   al   mare con Maria due   volte.
           G.   went-IMPF to-the beach with M.   twice (imperfective)

b. *Gianni evedeva *Blade Runner* molte volte.
G. 　　　　　　watched-IMPF　　　many times. (imperfective)

c. Gianni è andato al mare con Maria due volte.
G. has gone to-the beach with M. twice (perfective)

d. Gianni ha visto *Blade Runner* molte volte.
G. has watched 　　　　many times (perfective)
Lenci and Bertinetto (2000, 247, exs 2-3)

5.3　Universal perfects

• **Universal readings of Present Perfects** are defined by the fact that the situation/event described in the sentence starts at some time before Utterance-Time, and still holds at Utterance-Time and possibly thereafter.

(265)　English
　　a. Since 2000, Alexandra has been living in LA.
　　b. Petros has been sick for the past two weeks.
　　c. We have been looking for a flat.
　　d. He has been writing poems lately.

• These readings have a durative or iterative interpretation.

• The PRES-PERF described in Cabredo Hofherr et al. (2010) obligatorily exhibits this defining characteristic of universal readings:[18]

(266)　a. Você tem feito seus deveres de casa?
　　　　you havePR.2SG do.PP your homework
　　　　'Have you done/been doing your homework regularly?'
　　　　only acceptable if uttered during the school term, but not afterwards

　　b. Pedro tem dormido na varanda o inverno inteiro.
　　　　Pedro has sleep.PP in-the balcony the winter whole

---

[18]Contrary to the data reported for the variety of Brazilian Portuguese discussed in Molsing (2007), the implication that the process continues beyond Utt-T cannot be cancelled. The following example is completely unacceptable for our consultants:

(i)　# Eu tenho visitado meus pais, mais não vou mais.
　　　I have.PR.1SG visit.PP my parents but NEG go.PR.1SG more
　　　'I have been visiting my parents but I don't anymore.' example 21b in Molsing 2007

'Pedro has been sleeping on the balcony all this winter.'
only acceptable if uttered during the winter in question, but not after-
wards,

c. Esse tipo de cinema tem desaparecido na   cidade a toda
   This type of cinema has disappear.PP in+the town   to all
   velocidade.
   speed
   'Movie-theaters of the kind have been rapidly disappearing from town.'
   requires that not all movie theaters of the type in question have disap-
   peared at Utt-T, i.e. that the process may continue after Utt-T

• But the NEBP-Present-Perfect is not a simply a perfect that is specialised in univer-
sal readings: it is even more restrictive than that since certain readings found with
other universal (readings of) perfects e.g. in English are excluded.

• Simple durative or continuative readings are not possible; the NEBP-Present Per-
fect **requires temporal gaps** between iterations as the following minimal pair shows:

(267) a. Pedro tem dormido na   varanda o   inverno inteiro.
           Pedro has sleep.PP in-the balcony the winter   whole
           'Pedro has been sleeping on the balcony all winter.'

       b. #O urso tem dormido na   sua caverna o   inverno inteiro.
           the bear has sleep.PP in-the his cave   the winter   whole
           'The bear has been sleeping in his cave all winter.'

• **Stage-level** states should pose no problem for a Universal perfect. However, stage-
level predications with the copula *estar* are only felicitous in the PRES-PERF in a
restricted number of cases, namely with gradable predicates - yes-no predicates as
in (268a-c) are excluded:

(268) a. # Esse livro sempre tem estado **na   prateleira da   direita**.
             This book always has be.PP   in+the shelf   of+the right
           'This book has always been on the right-hand shelf.'

       b. # Essa loja   tem estado **fechada** (ultimamente).
             This shop has be.PP   closed   (lately)
           'This shop has been closed for some time.'

       c. # Pedro tem estado no   **jardim/ nos   Estados Unidos**.
             Pedro has be.PP   in+the garden/ in+the US
           'Pedro has been in the garden / in the US.'

    d. Pedro tem estado **muito doente** nos   últimos tempos.
       Pedro has be.PP very ill   in+the last   times
       'Pedro has been very ill lately.'

    e. Pedro tem estado **bêbado / aborrecido**.
       Pedro has be.PP drunk / upset
       'Pedro has been drunk / upset.'

• The iteration expressed by the NEBP-Present Perfect can **distribute over the subject**, even with **once-only predicates**.

(269)   a. **Muitas** / # **Vinte** pessoas têm   morrido no   Iraque.
         many / twenty people have.PR3PL die.PP   in+the Iraq
         'A lot of / #twenty people have been dying in Iraq.'

        b. **Muitos** / # **Vinte** estudantes têm   aderido ao   Partido
         many / twenty students   have.PR3PL join.PP to+the Party
         Comunista.
         Communist
         'A lot of / #twenty students have been joining the Communist Party.'

• There is a **many-ness requirement**: Exact cardinality in the subject (and in frequency expressions) is not felicitous with the NEBP-Present Perfect.

• The NEBP-Present Perfect is interesting since it illustrates a case of an **amalgamation of properties pertaining to lexical and grammatical aspect**:

(270)   a. lexical aspect (temporal contour of the event over the interval): frequency+habituality with temporal gaps, with distribution over subject possible (habituality: need a long enough interval to create a habit, "this morning" is too short) (⟶pluractional markers)

        b. grammatical aspect (time-relational aspect): interval of assertion placed with respect to Utterance-Time (has to be on-going at Utterance-Time)

5.4 Aspectual periphrases

5.4.1 Aspectual periphrases in Hindi/Urdu (Zaxarjin97, Butt & Rizvi 2010)

• Hindi/ Urdu has a rich array of constructions indicating iteration and continuation Zaxarjin (1997); Butt and Rizvi (2010).

(271)   a. The auxiliary *rɑh* with a main verb (a participle) in the imperfect expresses iteration of the event.

      b. when the auxiliary *rɑh* is inflected with perfect morphology, as in (272a), the result is a past tense interpretation.

      c. when the auxiliary *rɑh* is inflected with imperfect morphology, as in (272b), the result is a present tense interpretation along with a sense that the event continued over a long time.

(272)   a. kʋtta   bʰõk-t-a   rɑh-a
           dog.MSG.NOM bark-IMPF-MSG stay-PERF.MSG
           'The dog kept on barking.'
           (E $\bigcirc$ R & R < S & the event iterates over a given time span)

       b. kʋtta   bʰõk-t-a   rɑh-t-a
           dog.MSG.NOM bark-IMPF-MSG stay-IMPF-MSG
           'The dog keeps on barking.'
           (E $\bigcirc$ R & R $\bigcirc$ S & the event iterates and continues over a long time span, along with some condition, e.g., whenever that dog sees a man) Butt and Rizvi (2010, ex33a/b)

• Butt and Rizvi (2010): "In both cases, the continuative (long time span) meaning would seem to be contributed by the imperfect morphology on the main verb, the iteration by the auxiliary 'stay' and the past vs. present interpretation by the form of the auxiliary *rɑh*."

    The difference between (273) and (272) is that the dog is considered to be willful and that the time span over which the event happens is longer.

(273)   kʋtta   bʰõk-t-a   ja-t-a   (hɛ)
        dog.MSG.NOM bark-IMPF-MSG go-IMPF-MSG is
        'The dog keeps on barking (willfully, over a very long time, in many iterations).'

As if this were not enough, yet another motion verb, namely *cɑl* 'walk' can be added. As shown in (274), this verb bears perfect morphology and has the effect that the duration of the barking event is considered to be longer than in (273).

(274)   kʋtta   bʰõk-t-a   cɑl-a   ja-t-a   (hɛ)
        dog.MSG.NOM bark-IMPF-MSG walk-PERF.MSG go-IMPF-MSG is
        'The dog keeps on barking (willfully, over a long time).'

• In their description, Butt and Rizvi (2010) focus on the morphological expression. Having seen the parameters of variation in iterative constructions, it would be interesting to examine the different parameters for the different periphrases found in Urdu/ Hindi.

5.4.2 Aspectual semi-auxiliaries in Spanish (Laca 2006)

• The Romance languages have a large inventory of 'aspectual periphrases' (mono-clausal constructions involving semi-auxiliaries)

• Here consider two periphrases that each involve a motion verb and the gerund[19]

(275) Within Romance only Spanish and Portuguese distinguish between

    a. a construction with a verb of non-oriented motion (*andar*, roughly 'walk')

       Anda   molestando a la   gente. (Spanish)
       walk.PRES.3S disturbing   to the people
       'S/he is giving people trouble.'

    b. and a verb of oriented motion (*ir*, roughly 'go')

       La   situación **iba**   empeorando. (Spanish)
       The situation go.IMPF worsening
       'The situation was getting worse.' Laca (2006, ex.2a/b)

• These two periphrases are usually treated on a par with *estar* + Gerund as expressions of 'progressive' aspect (Espunya 1998, Bertinetto 2000, but see Squartini 1998 for differences between the two types of periphrasis).

• Laca (2002, 2004) has argued that that Romance aspectual periphrases distribute over at least two different levels of structure[20]:

(276) a. a higher, 'functional' level at which time-relational aspect (in the sense of Smith 1991) is expressed

    b. and a lower, 'lexical' level, at which the temporal structure of the basic eventuality description is modified or determined (derived eventuality description)

• Laca (2004): the motion verb periphrases and the *estar*-progressive illustrate this division

(277) a. *estar* +Gerund is an expression of time-relational aspect

    b. *ir/ andar* + Gerund are eventuality modification periphrases

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[19]I will gloss the gerund as *V+ing*, this is a shorthand, as in this context that seems appropriate. The distribution of gerunds is significantly different from the English present participle elsewhere (e.g.*skipping is fun* Spanish:*saltar a la cuerda s entretenido* with *saltar*= infinitive.

[20]Both levels can be present in one single periphrasis if the analysis of the Northeastern Brazilian Portuguese perfect in Cabredo Hofherr, Laca & de Carvalho 2010 summarised in (270) above is correct.

• Tests supporting this distinction Laca (2006)

(278)   a. Distribution with other periphrases
        b. Selection of complement type
        c. Semantic differences

• Distribution with other periphrases

(279)   a. *estar* + Gerund cannot be preceded by other eventuality modification periphrases,
        b. *andar / ir* +Gerund can be embedded, for instance, under an aspectualizer like *empezar* 'begin' or under the repetitive periphrasis *volver a* + Inf. (roughly 'again'):

    i. El   avión empezaba a *__estar__/ __ir__   perdiendo altura. (Spanish)
        The plane begin.IMPF to *LOC   -be/ go   losing height
        'The plane was beginning to lose altitude gradually.'

    ii. Volvió   a *__estar__ /   __andar__ diciendo mentiras. (Spanish)
        Returned.S.3sg to *LOC   -be /   walk   telling   lies
        'S/he started telling lies again.' (exs in Laca 2006)

• Selectional restrictions: *estar* + Gerund can combine with almost any type of eventuality description, *andar / ir* + Gerund are characteristically subject to more specific selectional restrictions, which moreover follow partially complementary patterns.

(280)   a. Both generally reject states and achievements,

    i. __Estaba__/   ??__iba__/   ??__andaba__   siendo víctima de una
        LOC.be.IMPF/ ??go.IMPF/ ??walk.IMPF being   victim   of a
        alucinación. (Spanish)
        hallucination
        '(S)he was suffering a hallucination.'

    ii. __Estás__/   ??__vas__/   ??__andas__   cometiendo el   peor
        LOC.be.PR.2S/ ??go.PR.2S/ ??walk.PR.2S committing the worst
        error   de tu   vida.
        mistake of your life
        'You are committing the worst mistake of your life.' (exs in Laca 2006)

        b. *andar* does not combine with degree achievements

    El río __estaba__/   __iba__/   ??__andaba__   creciendo. (Spanish)
    The river LOC.be.IMPF/ go.IMPF/ ??walk.IMPF growing

    'The river was rising [more and more / ??on and off].'

    c. *ir* + gerund does not combine with activities (i.e. is unacceptable or loses its 'periphrastic' interpretation)

       María **estaba**/   ??**iba**   / **andaba**   trabajando.

       María LOC.be.IMPF/ ??go.IMPF / walk.IMPF working

       'Maria was working.'/ 'Maria was working here and there/ on and off'
       (exs in Laca 2006)

• Semantic differences

(281)   a. *estar* + Gerund is very close in meaning to the English progressive and exhibits a clearly time-relational semantics

       b. *andar* + Gerund displays a number of analogies with 'frequentative' verbs, such as *nibble, clatter,* as well as with the activity readings of semelfactives *(knock on the door for some time, jump for hours)*.

       c. *ir*+ Gerund is very similar to predicates of gradual change, in particular to the durative readings of degree achievements (*lengthen, ripen, rise*).

• *andar/ir* + gerund have properties of **temporal** pluractional markers: the multiple events have non-overlapping running times.
• The event plurality is not simply durative: both *ir* and *andar*+Gerund are incompatible with expressions that preclude the subdivision of the event:

(282)   a. María **fué** / **anda**   leyendo La Guerra y   la   Paz   (*de un tirón).

       María go.SP / walk.PR reading The War   and the Peace (*of a   pull).

       'María gradually read / is reading War and Peace (*in one sitting).'

       b. ***Iremos**   amortizando la   deuda en un único pago.

       go.FUT.1PL paying.up   the debt   in a   single payment

       *'We will gradually pay up our debt in one single payment' (exs in Laca 2006)

(283)   Analysis

       a. *andar*+gerund = frequentative:

       the frequentative holds at an interval if:

         i. there is more than one subinterval at which the basic verbs holds

        ii. each of these V-subintervals is preceded or followed by a subinterval at which the basic verb also holds and

       iii. any two V-subintervals being separated by a gap (a non-V subinterval) which must not exceed some contextually determined length. [21]

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[21]This is the analysis of West Greenlandic *-tar-* given by Van Geenhoven (2004)

      b. *ir*+gerund = incremental (gradual or successive):

        i. there is more than one subinterval at which the basic verbs holds

        ii. each of these V-subintervals is preceded or followed by a subinterval at which the basic verb also holds

        iii. INCR does not require temporal gaps (non-V subintervals), but it does require that there is a function whose values uniformly increase or decrease in the V subintervals.

• The incremental values for the *ir*+gerund periphrasis can be, among various other things, (Laca, 2006)

(284)   a. the degrees to which an object possesses a property

        El río **iba**   creciendo. (Spanish)
        The river go.IMPF growing
        'The river was rising more and more/ gradually.' (Laca, 2006)

      b. the elements of an incremental chain of 'participants' of the action, an incremental chain of material parts of an object in

        i. María **fue**   leyendo La Guerra y   la Paz. (Spanish)
           María go.SP reading The War   and the Peace
           'María gradually read War and Peace.' (Laca, 2006)

        ii. Los invitados **fueron** saludando al   dueño de casa.
           the guests   go.SP greeting   to-the host
           'The guests successively greeted the host.'

      c. an incremental chain of subsets of a set

        Se   **va**   poniendo la camisa, la chaqueta y   la corbata.
        REFL go.SP.3sg putting.on the shirt,   the jacket   and the tie
        'He succesively puts on his shirt, his jacket and his tie.' (Laca, 2006)

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(283)   FREQUENTATIVE: ⋆ t V(x) at t = 1 iff

      ∃ t' (t'⊆t & V(x) at t' & number (t') > 1 (=(283ai))

      & ∀ t' (t'⊆t & V(x) at t' ⟶∃ t" (t"⊆t & (t"> t' ∨ t" < t') & V(x) at t"(=(283aii))

      & ∃ t"' (t'<t"'< t '' ∨ t' > t"' > t") & ¬ V (x) at t"' & 0 < length (t"') ≤ n))))(=(283aiii)) (=Van Geenhoven 2004 (63)).

• **Scope interactions** with sg indefinites are excluded, distributivity readings with bare plurals are possible (Laca, 2006)

(285)   a.   ?? El   zorro **anduvo** matando una gallina. (Spanish)
               the fox   walk.SP killing   a   hen
               'The fox has been killing a hen.'

           b.   ?? Con el   tiempo, el   club **fue**   perdiendo un socio.
               with the time,   the club go.SP losing   a   member
               'The club gradually lost a member.' (Laca, 2006)

(286)   a.   El   zorro **anduvo** matando gallinas.
               the fox   walk.SP killing   hens
               'The fox has been killing hens.'

           b.   Con el   tiempo, el   club **fue**   perdiendo socios.
               with the time,   the club go.SP losing   members
               'The club gradually lost members.' Laca (2006)

• But beyond bare plurals, the Spanish periphrases allow further distributive relations (Laca, 2006):

(287)   a.   with **definite pl NPs**

              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.   with **quantified NPs**

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

           c.   with **coordinations**

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

• Notice that this pattern of distributivity is not a general property of periphrases in Spanish, other periphrases like the habitual *soler*+infinitive[22] allow multiplication of singular indefinites (Laca, 2006, ex.28a)[23]

(288)   Para las fiestas,   **solían**   matar un cordero. (Spanish)
          for   the holidays, use.IMPF.3PL kill.inf a   lamb
          'For the holidays, they used to kill a lamb.' Laca (2006, ex.28a)

• As pointed out by Laca (2006), the distribution possibilities of the periphrases *andar/ir*+ gerund illustrated in (287) the inverse of the distribution observed for frequency adverbs:

(289)   a. Mary **occasionally** discovered **a typo** in the manuscript.

        b. ??Mary **occasionally** discovered **every typo** in the manuscript.
            Laca (2006, ex.26)

(290)   a. ??María **andaba**/   **iba**   descubriendo **un error** en el   manuscrito.
            María   walk.IMPF/ go.IMPF discovering   a typo   in the manuscript
            ??'Maria was / was gradually discovering a typo in the manuscript.'

        b. María **andaba**/   **iba**   descubriendo **todos los errores/ cada error**
            María walk.IMPF/ go.IMPF discovering   all the typos/   every typo
            del   manuscrito
            of.the manuscript
            'Maria was / was gradually discovering all the typos/ every typo in the manuscript.' Laca (2006, ex.26)

• To summarise: *ir/andar* + Gerund clearly differ from frequency adverbials in their ability to distribute the plural events over plural participants (Laca (2006)): we can have distributive dependencies between the individual events and a subset of the plural argument.

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[22]*soler*+infinitive cannot be translated by *used to* since *soler* can appear in the present *suele venir a las 10* "s/he usually comes at 10".

[23]But notice that we have a weak adverbial expression of cyclicity here *para las fiestas* "for festivities", (cyclicity implied but no explicit quantificational expression like *each* as in *for each Christmas party*). I have claimed that *soler* in fact needs a weak cyclicity expression to multiply singular indefinites,(Cabredo Hofherr, 2008).

(291)

DISTRIBUTED READINGS WITH	*andar/ir*+ gerund	frequency adverbial
singular indefinites	no	yes
bare plurals	yes	yes
definite plural NPs	yes	no
quantified NPs	yes	no
conjunctions of NPs	yes	no
	distribution effects (=> collective nouns)	scope

• Laca (2006): In view of the differences summarised in (291), it is not plausible to interpret the distribution with the periphrases as the result of plurality taking scope over the VP, since frequency adverbials take scope over VP.

• Laca (2006): The pluractional aspectual operators represented by these two Spanish periphrases crucially differ from frequency adverbs such as *repeatedly, occasionally* etc., in that the latter, but not the former, are scope-bearing elements.

• Laca (2006): The distribution effects can be understood **not as scope effects** but as **distribution effects** observed with a collective noun (like *family, committee, team*)

(292) a. Her family owns **the buildings** in the neighborhood. Her family owns **most buildings** in the neighborhood.

   b. Her family owns **every building** in the neighborhood.

   c. Her family owns **the Flatiron, the Empire State and the Chrysler building**. Laca (2006, ex. 37)

6 Expressions in the nominal domain

6.1 Distributive numerals

• The following brief summary follows Gil (2005).

(293) Georgian (adapted from Gil 1988)

Romanma da Zurabma **sam-sami** čanta caiɣo.
Roman.erg and Zurab.erg **distr-three.abs** suitcase.abs carry.pst.3sg

(i) 'Roman and Zurab carried three suitcases each/apiece.'
(ii) 'Roman and Zurab carried the suitcases three by three.'

• The meanings of sentences containing distributive numerals can be described in terms of a binary semantic relationship of distributivity that obtains between an expression containing the distributive numeral, the DISTRIBUTIVE SHARE, and some other expression in the sentence, the DISTRIBUTIVE KEY.

(294) a. English preposition *per*: share *per* key.
There were three biscuits per child.

b. Georgian ex (293)

  i. the distributive numeral *sam-sami* marks the direct-object NP *sam-sami čanta* as the distributive share

  ii. 2 choices of distributive key:
distributive key = subject NP *Romanma da Zurabma*⟶three suitcases per carrier (= interpretation (293i)).
distributive key = *caiχo* "carry" ⟶three suitcases per carrying (= interpretation (293ii))

• For further work on distributive numerals see refereces in Gil (2005).

6.2 Nominal additivity

• Greenberg (to appear) makes the claim that despite the fact that *od* and *more* in (295) syntactically combine with a nominal expression (*oranges*), they express additivity in the domain of eventualities.

(295) (etmol axalti 3 tapuzim) hayom axalti **od** (tapuzim)
(yesterday I-ate 3 oranges) today I-ate od (oranges)
"(Yesterday I ate 3 oranges) Today I ate some **more** (oranges)"

• According to Greenberg, these particles trigger the presupposition that there is an existing eventuality that the asserted eventuality is added to, resulting in a larger and more developed eventuality.

• These uses are related to the adverbs like Italian *ancora*, French *encore* and Mandarin Chinese *zai* (see Tovena and Donazzan 2008)

7   Adverbial expressions

• In what follows I will concentrate on the distintcion between degree and frequency adverbials.

• For other adverbial constructions Involving in the expression of multiple events of the type *This mystery offers puzzle within puzzle.* see e.g. Beck and Stechow (2007).

7.1   Counting vs frequency in French and English

• Doetjes (2007) observes that French *beaucoup* "a lot" and *souvent* "often" differ in systematic ways. (see Doetjes' appendix A (pp716-19) for an application of the distinctions developed on this basis to Hungarian, Dutch, Moroccan Arabic and Indonesian).

(296)   a.   Sylvie va **beaucoup** au cinéma.
             'Sylvie goes to the movies **a lot**'

        b.   Sylvie va **souvent** au cinéma.
             'Sylvie goes **often** to the movies.'

        c.   *Pierre a **beaucoup** acheté trois kilos d'olives.
             'Pierre has bought three kilos of olives a lot.'

        d.   Pierre a **souvent** acheté trois kilos d'olives.
             'Pierre has often bought three kilos of olives.'

        e.   Sylvie a **beaucoup** apprécié ce film.
             'Sylvie liked this movie a lot.'

        f.   Sylvie a **souvent** apprécié ce film.
             'Sylvie often appreciated this movie.'

        g.   Quand il est à Paris, Pierre va **beaucoup** au Louvre.
             'Whenever he is in Paris, Pierre visits the Louvre a lot.'

        h.   Quand il est à Paris, Pierre va **souvent** au Louvre.
             1. 'Whenever he is in Paris, Pierre often visits the Louvre.' OR
             2. 'Often when he is in Paris, Pierre visits the Louvre.' Doetjes (2007, 685-6, ex 1)

• Claims Doetjes (2007, 686-7):

(297)   a.   *beaucoup* is not inherently iterative, *souvent* is inherently iterative.

        b.   *beaucoup* is a degree expression, *souvent* is a quantifier over times.

        c.   Certain contexts create synonymy at the sentence level.

    d. However, *beaucoup* never means '*souvent*', and should not be treated as an ambiguous expression. Doetjes (2007, 686-7)

• With a mass predicate *beaucoup*, like "a lot" does not necessarily indicate the number of times an event took place, while *souvent*, like "often", does, patterning with iterative expressions like *trois fois* "three times".

(298) a. Il a plu beaucoup.
      'It rained a lot.'

     b. Il a plu souvent.
      'It rained often.'

     c. Il a plu trois fois.
      'It rained three times.'

• In contrast with this, *beaucoup* and *souvent* pattern together with respect to the use of the imparfait, differing from absolute iterative adverbials like *trois fois* "three times".

(299) a. Jean va/allait beaucoup au cinéma.
      Jean goes/went.(IMP) a-lot to-the cinema

     b. Jean va/allait souvent au cinéma.
      Jean goes/went.(IMP) often to-the cinema

     c. #Jean va/allait trois fois au cinéma.
      Jean goes/went.(IMP) three times to-the cinema

• This is due to the fact that the reference of *beaucoup* and *souvent* depends on the interval that they apply to (*relative quantity*), unlike **absolute** iterative adverbials like *trois fois* "three times" and like **relative** iterative adverbials like *trois fois par semaine*.

(300) a. La semaine dernière/l'année dernière, Pierre est **beaucoup** allé au Louvre.
      'Last week/ last year, Pierre went to the Louvre a lot.'

     b. La semaine dernière/pendant sa jeunesse, Pierre est **souvent** allé au Louvre.
      'Last week/during his youth, Pierre went often to the Louvre.'

     c. La semaine dernière/ pendant sa jeunesse, Pierre est **trois fois** allé au Louvre.
      'Last week/during his youth, Pierre went three times to the Louvre.'

     d. L'année dernière/pendant sa jeunesse, Pierre est allé au Louvre **trois fois par semaine**.

'Last year/during his youth, Pierre went three times per week to the Louvre.' Doetjes (2007, 688-9, exs 6a-c and 8)

• Doetjes (2007, 688-9) The contrast in (299) is due to the fact that **absolute** quantity is not compatible with the imparfait, while **relative** quantity is:

(301)　a.　#Jean va/allait trois fois au cinéma.
　　　　　Jean goes/went.(IMP) three times to-the cinema

　　　　b.　Jean va/allait au cinéma trois fois par semaine.
　　　　　Jean goes/went.(IMP) to-the cinema three times a week.

• The adverbial use of *beaucoup* is possible in contexts where the VP has cumulative reference (VP and VP = VP: plural *writing letters + writing letters = writing letters*, mass *drinking wine + drinking wine = drinking wine*), which means that it allows for either a plural or a mass interpretation. Doetjes (2007, 699)

• Iteration with *beaucoup* is due to the plural/ mass nature of the predicate.Doetjes (2007, 699)

• Iteration with *souvent* is independent of the mass/count properties of the predicate: *souvent* introduces a 'many-times'-interpretation. Doetjes (2007, 700)

• Further (scope) differences between *beaucoup* and *souvent*

(302)　*souvent* can take scope over the subject, *beaucoup* cannot Doetjes (2007, 702-5) (the examples involve the expletive construction with postposed subjects)

(303)　*souvent* can have relational readings, *beaucoup* cannot Doetjes (2007, 700) (see de Swart 1991/1993 for relational readings)

　　　a.　Quand il est à Paris, Pierre va **souvent** au Louvre.
　　　　　RELATIONAL: '**Often** when he is in Paris, Pierre goes to the Louvre.'
　　　　　NON-RELATIONAL: 'Whenever he is in Paris, Pierre goes **often** to the Louvre.'
　　　　　Doetjes (2007, 705, ex 36)

　　　b.　Compare: Quand il est à Paris, Pierre va **beaucoup** au Louvre.
　　　　　no relational reading: '**Often** when he is in Paris, Pierre goes to the Louvre.'
　　　　　non-relational: 'Whenever he is in Paris, Pierre goes to the Louvre **a lot**.'

7.2   Additive adverbs

• Notice that the plurality arising from these adverbs is due to a presupposition that an event of the type described has taken place before (cf *re-* above) (see e.g. Dowty (1979); Stechow (1996), for a comparative discussion of Italian *ancora*, English *again* and Mandarin *zai* see Tovena and Donazzan (2008)).

(304)   a. She came **again**.
             Presupposed: She came (at least once) before.
             Event of the same type, including the subject.

        b. She **also** came.
             Presupposed: Someone else came too.
             Event of the same type, different subject.

• This means that the events involved in the plurality are heterogeneous, since the plurality includes asserted and presupposed events (Tovena and Donazzan (2008)).
• Tovena and Donazzan (2008) discuss three properties of additive adverbs:

(305)   They order events in time (example due to Saul Kripke)

        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.
             Added information wrt (305a): John's birthday is after Mary's birthday.

(306)   The characterization of the event is not fixed Tovena and Donazzan (2008, ex 3):

        a. Ha mangiato una pera, poi   ancora una mela.
             has eaten.msg a   pear then again a   apple
             s/he ate a pear, then also an apple
             ⟶presupposition need not include the direct object

        b. He painted the house again.
             Plurality of events of the type: Somebody painted the house.

        c. He painted the house again and again.
             Plurality of events of the type: He painted the house.

8　Event plurality and argument multiplication: distribution vs scope

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

(307)　a.　# Qaartartoq sivisuumik　qaaqattaarpoq
　　　　　　qaartartuq sivisuu-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, example (30))

　　　　b.　Qaartartut　　sivisuumik　qaaqattaarput
　　　　　　qaartartu-t　　sivisuu-mik qaar-qattaar-put
　　　　　　bomb.ABS-PL lengthy.INS　explode-QATTAR-IND.[-tr]3PL
　　　　　　'Bombs exploded again and again for a long time.'
　　　　　　　　　　　　　　　　　(Van Geenhoven, 2004, example (31))

(308)　Achievements + for–adverbials (Dowty 1979: 78-82)

　　　　a.　?Mary discovered a flea on her dog for six weeks. [=VG2004 (100)]
　　　　　　'Mary discovered a flea and she discovered it again and again for six weeks.' (absurd reading , same flea)

　　　　b.　Mary discovered fleas on her dog for six weeks [=VG2004 (102)]
　　　　　　'Mary discovered a flea and she discovered another flea and... again and again for six weeks.'

• Van Geenhoven (2004) argues that these data show that distributivity effects observed with frequentatives are different from the distributivity observed with scope-taking elements (frequency adverbs). For a further study developing Van Geenhoven's insight see Laca (2006) avove.

• In our discussion of Laca (2006) we saw that the aspectual periphrases *andar/ ir+* gerund in Spanish do not take scope but allow distribution with respect to bare plurals, definite plurals, quantified NPs and coordinations.

• But note that there are more restrictive cases of distribution (that do not allow the full gamut of DP-types studied by Laca).

• Pluractional markers such as the Czech distributive prefix *po-* described by Filip (1999) and Filip & Carlson (2001), give rise to distribution effects with bare plurals but **not** with universally quantified arguments (unlike the *andar/ir*+gerund periphrases in Spanish). (see Laca (2006) for discussion)

(309)   a.   PO-zamykal   ??zásuvku.   [= Filip 1999, Chap.5 (63)]
         DISTR-lock.PAST.3.SG drawer.SG.ACC
         ?? 'He locked a/the drawer [gradually/successively].'

      b.   PO-zamykal   ??kazdou   zásuvku [= Filip 1999, Chap.5 (66)]
         DISTR-lock.PAST.3.SG each/every drawer.SG.ACC
         ≠'He locked each/every drawer [gradually/successively].'

      c.   PO-zamykal   zásuvky.   [= Filip 1999, Chap.5 (9b)]
         DISTR-lock.PAST.3.SG drawer.PL.ACC
         'He locked each drawer [successively, one after the other].'

• Cusic (1981, 172-175) discusses verbal plural markers in Logo and Madi (Central Sudanic). According to his description, multiplication of the object depends on the Aktionsart of the verb:

(310)   a.   no change of state or location in the object: object not pluralized

         OtsE ka   eza   tsI   (Madi)
         dog   aux meat bite

         the dog is biting the meat

         OtsE ka   kwa   OtsI (Madi)
         dog   aux bone bite

         the dog is gnawing the bone
         Cusic (1981, 172), ex 11/ 13, citing Tucker (1940:210)

      b.   change of location in the object: object pluralized

         toko   aji   sandu (Logo)
         woman return box

         the woman returns the box

         toko   l-eji   sandu (Logo)
         woman pl-return box

         the woman returns the boxes
         (Cusic (1981, 173), ex 17-18 citing Tucker 1940:216)

      c.   change of condition in the object: object not pluralized, repetitive action on parts of the object

ma si   dre boŋgo (Logo)
I   tear past cloth

I tore the cloth once

ma la-si   dre boŋgo (Logo)
I   pl-tear past cloth

I tore the cloth to shreds
(Cusic (1981, 173), ex 19-20 citing Tucker 1940:216)

9   Nominal and verbal parallels

We do not have the space to go into details here, I will just point out some references for further reading in this domain.

9.1   Nominal and verbal domain: similarities

• It has long been noticed that there are parallels between the aspectual classes in the verbal domain and the mass/ count distinction in the nominal domain Bach (1986); Krifka (1992), the presentation below follows Doetjes (2007, 697).

(311)   Following Krifka (1986) and Bach (1986), verbal predicates can be taken to be the counterparts of plural, singular or mass nominal predicates.
  a. A predicate such as *to rain* is a mass predicate
  b. *to go to the movies* corresponds to a count predicate, which is ambiguous between a singular or a plural reading.
  c. 'Once only' predicates such as *to write the letter* (where the letter is a token) cannot be interpreted as a plural predicate, and could therefore be compared to singular count nouns.
  d. It is important to note that 'once only' predicates differ from ordinary singular count nouns in not having a plural counterpart. In this respect 'once only' predicates are similar to predicates denoting a unique object or individual, such as *président actuel de la République Française* 'present president of the French Republic'.

• Parallel analysis: Bar-el (2008) argues that the CVC reduplicant is an instance of a plural morpheme applying to both domains.

• A further parallel: Bittner and Trondhjem (2008) argue that languages may mark quantification on verbs (Q-verbs).

• Doetjes (2008); Fassi-Fehri (to appear) argue that number in the nominal and verbal domain has different properties.

9.2   Nominal and verbal domain: differences

• Doetjes (2008): "counting in the strict sense is a nominal affair"

(312)   a.   Counting in the strict sense: two elephants, three books
        b.   Vague counting: a lot of elephants, a lot of books

• Vague counting behaves similarly for the verbal and nominal domains. Counting in the strict sense differs between the two domains.

(313)   a.   Vague counting combines directly with NPs and VPs:
             a lot of books (NP)
             He reads a lot. (VP)
        b.   Strict counting combines directly with NPs in languages that do not have nominal classifiers but not with VPs – need a classifier-like expression like *times* (also cognate objects with numerals):
             three books (NP)
        c.   Strict counting does not combine directly with VPs – need a classifier-like expression like *times,* even in languages that have pluractional marking on the verb (also cognate objects with numerals):
          i.   He reads three (*times).
          ii. Taa zàagee shì   zaagìi   ukù   (Hausa)
               she insult him insulting three
               She insulted him three times (ex in Newman 2000, cited in Doetjes (2008, ex 28b))

10   Summary

In the preceding sections we have seen that the behaviour of markers of verbal plurality can vary along several parameters. The following summarises the parameters of variation that we have encountered.

(314)   Questions for data bearing on pluractional marking on verbs

     a. Different markers: what markers does the language have on the verb for expressing event plurality?

     b. Different markers: can they co-occur, in what order?

     c. Different readings

        i. what readings are attested for each marker?

        ii. mainly event-external/ mainly event-internal?

        iii. Predictability of different readings: are the readings associated to the lexical aspectual properties of the base predicate?

        iv. Readings and lexical aspectual properties (do certain types of predicates favour a particular reading?)

     d. Does one of the arguments have to be plural with the verbal plural marker?

     e. Does the verbal plurality marker allow habitual readings?

     f. Do habitual readings distribute (i.e. one instance of the event per occasion, rather than repetitive/repeated event for each occasion, once-only predicates possible)?

     g. Frequentative vs continuative readings: are temporal gaps required in the interpretation?

     h. How heterogeneous can a verbal plural be? (heterogeneous: *prepare a party, repair a canoe* vs homogeneous *skip, read a book*)

     i. What kind of plurality is required for the event plurality? (Many-requirement only vs. exact cardinality allowed) Does this have consequences for cardinal adverbs? for numeral+N arguments?

     j. What is the status of the plural events (presupposed events as for *re-*, *again* vs. asserted plurality? Negation test.)

     k. Distribution

        i. Does the verbal plurality **allow** distribution over members of a plural object / subject argument (each member only involved once, once-only predicates)?

        ii. Is there an ergative pattern for distribution (intransitive subjects and transitive objects)?

iii. Is distribution in time /in space / over arguments **required** when using a marker?

iv. What types of nominal arguments allow distribution *bare plurals, definite plurals, coordinations of singulars, plural indefinited, quantified NPs*

l. What are the scope properties of verbal plurality with respect to plural arguments?

 i. with respect to negation:
 does negating the plural verb imply negating plurality only or the action as a whole?

 ii. with respect to singular indefinite arguments
 can this distribute over different instances of the indefinite argument ("multiplying singular indefinites")

 iii. with respect to bare plural arguments (distribution, not scope)
 can this distribute over different instances of the indefinite argument ("distributing the plural argument over occasions")

m. Comparison with other means of plurality: are there expressions for *again* (additive particles)? for *often*? for *a lot*?

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