A Basic Introduction to Pluractionals: Lasersohn (1995: Chapter 13)

1.   **Pluractionals, The Basic Facts**

In many languages of the world – and especially in those of West Africa, Americas, South Asia – there is a verbal suffix with the following characteristics.

(1)   **Typical Properties of Pluractionals**

   a.   It's a 'derivational' morpheme
            • It doesn't always combine with every V; has other combinatory 'quirks'
            • Its semantic contribution isn't always 100% productive/transparent
   b.   It's usually reduplicative in form.
   c.   **It contributes the notion that the sentence in some way describes a 'multitude' of events.**

(2)   **Various Names for these Morphemes**
   • 'Distributive' (Americanist tradition, following Boas)
   • 'Verbal Plurality (Cusic 1981)
   • **Pluractional (Newman 1980, Blevins & Levin 1986, Lasersohn 1995)**

(3)   **Some Choice Quotes Hinting At the 'Multitude of Events' Meaning**

   a.   Barker (1964), on Klamath:
            The semantic content of {re} is distributive action. This may involve action by a single actor upon distributive objects, **action by a single actor distributively upon a single object over a period of time**, action by distributive actors upon a single object, action by distributive actors each upon his own object…

   b.   Broadbent (1964) on Sierra Miwok:
            This suffix as an iterative meaning. The iteration [in one class of examples] appears to refer to the plurality of the object. The iteration here [in one class of examples] appears to refer to repeated action on a single object… A third iterative meaning for this suffix **refers to multiplicity of locations for the action**…

   c.   Winfield (1928) on Kui:
            Special forms of the verb are sometimes used to express the following modes of plural action: one person doing a number of things, **one person doing one thing many times**, more than one person doing a number of things, **more than one person doing one thing many times**.

   d.   Newman (1990) on Bole
            The so-called "intensives" indicate "one subject **performing the action several times**… several subjects separately performing the same action… one subject performing the action separately on several objects…"

(4)   **Illustrative Example: Pluractionality in Upriver Halkomelem (Thompson 2009)**

        Sentence: **Yaleq'**-et-es   te   theqat.
                                fall.PLURAC-TRANS-3Subj DET   tree

        Verifying Scenarios:
        a.   He felled the trees. (all in one blow, or one after the other)
        b.   He felled the same (magic) tree **over and over**.
        c.   They felled the tree.
        d.   The felled the trees.

        Not a Verifying Scenario:
        e.   * He felled the tree (once).

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(5)   **Lasersohn's Analysis, Part 1**

        a.   Informal Perspective:
             The basic meaning of a pluractional is that of 'multiplicity of actions, differing in time, spatial location, or participants'.

        b.   Formalization
             The following is not *exactly* what Lasersohn proposes, but is a notational variant.

             [[PA]]   = $[\ \lambda P_{<\varepsilon t>} : [\ \lambda e : |e| > n\ .\ \forall e'\ .\ e' \leq e\ \&\ atom(e') \rightarrow P(e')\ ]\ ]$

           •   Takes as argument a predicate of events P
           •   Takes as argument a *plural* event e (of cardinality greater than some contextual standard *n*)
           •   Returns T *iff* every atomic member e' of e satisfies P.

(6)   **A Recurring Question / Objection:**
        •   Do we need to *explicitly state* in (5a) that the actions differ in terms of 'time, spatial location, or participants'?
        •   After all, could any two events share those properties and *still be distinct events?*

(7)   **Additional Assumptions Regarding Argument Structure**

        •   In order for the semantics in (5) to work, we must assume that verbs are pure event predicates, and not relations of type <e,εt>.

        •   Thus, we must assume that some kind of external head is responsible for introducing *internal* arguments as well (viz. Paul Pietroski's work, but *cf.* Kratzer's work)

           [[THM]] = $[\ \lambda x : [\ \lambda e : {}^*Theme(e,x)\ ]\ ]$

(8)   **A Simple Illustration**

      a.   <u>Sentence (in Psuedo-English):</u>   Dave kissed-PA Mary.

      b.   <u>LF:</u>   [Dave [*v* [kiss-PA [THM Mary] …]

      c.   <u>Derived T-Conditions:</u>
      $\exists e_{|e|>n}$. Agent(e,Dave) & Theme(e, Mary) & $\forall$e' . e' $\leq$ e & atom(e') $\rightarrow$ *kiss(e')

      *There is a plural event of kissing, of which Dave is the (cumulative) agent, and
      Mary is the (cumulative) theme.*

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(9)   **Major Problem**
In some languages, the PA-marker is kind of 'picky', and *requires* the sub-events to
differ along some specified parameter, most typically 'time'.

      a.   <u>Kalaallisut Sentnece (van Geenhoven 2004):</u>
      Qaartartu-t   qaar-**qattaar**-put
      bomb-PL   explode-PLURAC-3PL
      Bombs exploded again and again.

      b.   <u>Not a Verifying Scenario:</u>   A bunch of bombs went off, all at the same time.

      c.   <u>Predicted T-Conditions (Too Weak):</u>
      $\exists e_{|e|>n}$. Theme(e, bombs) & $\forall$e' . e' $\leq$ e & atom(e') $\rightarrow$ *explode(e')

      • *There is a plural event of exploding, the agent of which are some bombs.*
      • (This would be satisfied in scenario (8b)

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2.   Parameters of Pluractional Meaning

(10)   **A More General Issue, Stemming from (9)**

• Pluractional (PA) markers usually have more to their meaning than just 'many events'

• This 'extra semantic baggage' in the PA marker differs across languages (contexts)

• Cusic (1981) offers a classification of such 'extra semantic baggage', which
Lasersohn (1995) reviews and largely adopts.

(11)   **A Choice Quote from Cusic (1981)**

"What is noteworthy about the plural verb… is that it may serve to indicate not only the repetition of an action… but a whole range of other plural meanings:
   * Repetitiveness
   * Repeated occasions or events
   * Persistent consequences
   * Habitual agency
   * Distributed quality
   * Inchoativity
   * Cumulative result
   * Intensity
   * Plurality of sites of action
   * Duration
   * Continuity
   * Conation
   * Distribution
   * Celerativity/retarditivity
   * Augmentation
   * diminution

(12)   **Some Notes**
   a.   The 'meanings/readings' in (11) are taken from PAs across a *variety* of languages.
   b.   Also, within a single language, the PA may carry a different 'meaning/reading' depending upon:
           (i)   the extra-linguistic context
           (ii)   **the Aktionsart of the verb (Haji-Abdolhosseini *et al.* 2002, Yu 2003)**

(13)   **A Fundamental Question We Should Not Lose Sight Of**
   * *Are* all of these 'meanings/readings' in (11) *actually* distinct (conventionalized) meanings or readings of the PA marker?
   * *Or,* are these really just different kinds of scenarios the PA marked verb can describe?

(15)   **Cusic's (1981) Parameterization of Pluractional 'Readings'**

Cusic (1981) claims that each of these 'meanings/readings' can be categorized on the basis of four key semantic parameters:

   a.   The phase/event parameter ('repetitive' vs. 'repeated' action)
   b.   The relative measure parameter (how 'large' / 'effective' the action is)
   c.   The connectedness parameter (whether there is much 'space' between the events)
   d.   The distributive parameter (do the events differ in time, space or participants?)

2.1   The Phase / Event Parameter

(16)   **The Phrase / Event (Repetitive / Repeated) Parameter (Cusic 1981)**

- Is the event described a single 'repetitive' event, made up of repeated 'phases'…
- …*Or,,* is it a plural event, made up of 'repeated' events?

(17)   **Illustration of 'Repetitive' Event, Composed of Repeated 'Phases' (Cusic 1981)**

The mouse nibbled the cheese.

- This sentence describes a single event of 'nibbling'.
- However, this single event of nibbling is made up of *many* subevents of biting.
- We have a single *event*, made up of multiple *phases*.
- The action of the nibbling is 'repetitive', but not 'repeated'.

(18)   **Lasersohn's (1995) Characterization of this Parameter**

Is the event satisfying [[V-PA]] necessarily made up of events that satisfy [[V]]? That is, does the PA affect the core 'event description' of the V? **That is, does the combination of the V and the PA seem to have a non-compositional meaning?**

a.   If 'yes', then it's a 'repeated event'
       (*e.g.* plural kissings are made up of kissings)

b.   If 'no', then it's a 'repetitive event'
       (*e.g.* an event of nibbling is made up of multiple 'bitings', not 'nibblings')

(19)   **Illustrative Examples of the 'Repetitive' Setting of this Parameter**

a.   <u>Saho:</u>   a.   *barar*   'to fly'
                            b.   *barrar*   'to flutter'

b.   <u>Tlingit:</u>   a.   *aklaség̱'w*   'dye it'
                            b.   *akanalség̱'wx̱w*   'color it (w/ crayon)' [1]

(20)   **An Observation**

The claim that some languages / words truly have a 'repetitive' setting for their PA semantics makes some *critical* assumptions regarding the lexical semantics of the verbs involved.

- Why do we think that Saho *barar* means 'fly' and not 'bat wings'?
- Why do we think that Tlingit *aklaség̱'w* means 'dye' and not 'apply color to'?

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[1] This contrast was reported by elders attending the Goldbelt Tlingit Language Teacher's Workshop, August 2011.

2.2   The Relative Measure Parameter

(21)   **The Relative Measure Parameter (Cusic 1981)**

- Are the repeated actions 'small' in their size, effort, or result?...
- ...*Or,* are they 'large' in their size, effort, or result?

(22)   **Empirical Claim (Cusic 1981)**
Different PA-marked verbs (in different languages) seem to differ in how 'big' the size, effort, or result of the described event / events is.

(23)   **Overarching Question, Again**

- In the illustrative examples to follow, are we certain that the distinctions at issue are at the level of the *(conventionalized) meaning of the PA-marked verb?*

- Or, are they features that are inferred from context / real-world knowledge?

(24)   **Events are 'Small in Size': The 'Diminutive' Reading**

a.   (Alleged) Reading: The subevents are understood to be short in duration

b.   (Alleged) Illustration, Sierra Nahuatl:
ko isneki   'wants to sleep'
koko isneki   'wants to **catch little naps**'

c.   (Possible) Illustration, Tlingit:
aklaség'w   'dye it'
akanalség'wx̱w   'color it (w/ crayon)'

(25)   **Events are 'Small in Effort': The 'Tentative' Reading**

a.   (Alleged) Reading: The subevents are actions performed half-heartedly

b.   (Alleged) Illustration, Quileute: *ce:'gol*   'he pulled'
                                            ciye:gol   'he pulled a little'

(26)   **Events are 'Small in Result': The 'Conative' Reading**

a.   (Alleged) Reading: The repetitive action falls short of desired result

b.   (Alleged) Illustration, Saho: *barar*   'to fly'
                                        barrar   'to flutter'

(27)   **Events are 'Large in Size / Effort': The 'Intensive' Reading**

    a.   <u>(Alleged) Reading:</u>   The repetition of the action amounts to increased effort.

    b.   <u>(Alleged) Illustration, Nahuatl:</u>   *tlania*   'to ask'
                                                             tlatlania   'to ask repeatedly'

(28)   **Events are 'Large in Result': The 'Cumulative' Reading**

    a.   <u>(Alleged) Reading:</u>   The repetition leads to a result.

    b.   <u>(Alleged) Illustration, Pomo:</u>   *q'wo*   'to cough'
                                                             q'woq'wot   'to cough up'

2.3   The Connectedness Parameter

(29)   **The Connectedness Parameter (Cusic 1981)**
How separated are the multiple events (or 'phases') making up the larger event?

(30)   **Empirical Claim (Cusic 1981)**
Different PA-marked verbs (in different languages) seem to differ in how 'continuous' the described event is.

(31)   **Overarching Question, Again**
- In the illustrative examples to follow, are we certain that the distinctions at issue are at the level of the *(conventionalized) meaning of the PA-marked verb?*
- Or, are they features that are inferred from context / real-world knowledge?

(32)   **High Connectivity of Subevents / Phases: The 'Durative-Continuative' Reading**

    a.   <u>(Alleged) Reading:</u>
"Repetition gives over to continuity, and increased quantity of action becomes an increase in the time it occupies"

    b.   <u>(Alleged) Illustration, Chechen (Yu 2003):</u>   *xowzhu*   'to ache'
                                                                                       xiizha   'to ache for a while'

(33)   **Low Connectivity of Subevents / Phases: The 'Discontinuitive-Dispersive Reading**

    a.   <u>(Alleged) Reading:</u>   The action is repeated sporadically a small number of times

    b.   <u>(Alleged) Illustration, Yuma:</u>   *axwelyk*   'he digs'
                                                              axwa:lyk   'he digs here and there'

2.4   The Distributive Parameter

(34)   **The Distributive Parameter (Cusic 1981)**
Are the multiple events (or 'phases') making up the larger event either:
- Distributed in time
- Distributed in space
- 'non-distributive', or
- 'collective'

(35)   **Some Issues**

a.   Cusic's (1981) distinction between 'non-distributive' and 'collective' events is rather unclear.
- Following Lasersohn (1995), we will drop it from our discussion.

b.   Cusic (1981) does not distinguish a 'reading' in which the events are 'distributed' in terms of their participants (*i.e.,* where the participants of the events differ)
- He may assume that such readings are necessarily ones where the time/space differs too…
- The data considered by Cusic (1981) do not determine this. The real test would be whether a verb like *love* can be PA marked, and mean that a single individual loves (at the same time/place) multiple individuals.
- Following Lasersohn (1995), we will assume that 'distribution in terms participants' is also a possible 'setting' for this 'parameter'.

(36)   **Events are 'Distributed in Time', Kalaallisut (van Geenhoven 2004)**
Qaartartu-t   qaar-**qattaar**-put
bomb-PL   explode-PLURAC-3PL
Bombs exploded again and again.   (**Several bombs exploded at the same time*)

(37)   **Events are 'Distributed in Space (and Time)', Yuma**

a.   *axwelyk*   'he digs'   b.   *axwa:lyk*   'he digs here and there'

Question:
Why do we think that distribution in space is part of the *meaning* of (37b)?
After all, if we have diggings at different times, they *could* (but need not) be in different locations…

(38)   **Events are 'Distributed in Participants', Upriver Halkomelem (Thompson 2009)**

Yaleq'-et-es   te   theqat.
Fall.PLURAC-TRANS-3Subj   DET   tree
a.   *He felled the trees.* (all in one blow, or one after the other)
b.   *They felled the tree.*
c.   *The felled the trees.*

3.　Lasersohn's 'Semantic Skeleton' for Pluractional Markers

(39)　**Lasersohn's Formal Semantics, Part 1**

$$[[\text{ PA }]] \quad = \quad [\ \lambda P_{<\varepsilon t>} : [\ \lambda e : |e| > n \ . \ \forall e' \ . \ e' \leq e \ \& \ \text{atom}(e') \to P(e')\ ]\ ]$$

- Recall that the problem for this analysis was that it doesn't reflect the way in which the meaning of a pluractional is 'parameterized' across/within languages…

- So… *let's try to do that!*

(40)　**Goal 1: Let's Model the Distributivity Parameter!**

　　a.　Goal 1a:　　Let's model the pluractionals that require 'distributivity in time'

　　　　(i)　T(e)　=　　the 'temporal trace of the event'
　　　　　　　　　　　　the time interval over which the event held

　　　　(ii)　[[PA]]　　=
　　　　　　$[\ \lambda P_{<\varepsilon t>} : [\ \lambda e : |e| > n \ . \ \forall e' \ . \ e' \leq e \ \& \ \text{atom}(e') \to P(e')$
　　　　　　　　$\& \ \forall e', e'' \ . \ e', e'' \leq e \ \& \ \text{atom}(e') \ \& \ \text{atom}(e'') \to \ \neg \ T(e') \circ T(e'')\ ]\ ]$

　　　　　　Every atomic subevent e' of e is such that P(e') <u>and</u>
　　　　　　　　any two atomic subevents e' and e'' of e do <u>not</u> overlap in their time

　　b.　Goal 1b:　　Let's model the pluractionals that require 'distributivity in space'

　　　　(i)　K(e)　=　　the 'temporal/spatial trace of the event'
　　　　　　　　　　　　the time and space which the event held

　　　　(ii)　[[PA]]　　=
　　　　　　$[\ \lambda P_{<\varepsilon t>} : [\ \lambda e : |e| > n \ . \ \forall e' \ . \ e' \leq e \ \& \ \text{atom}(e') \to P(e')$
　　　　　　　　$\& \ \forall e', e'' \ . \ e', e'' \leq e \ \& \ \text{atom}(e') \ \& \ \text{atom}(e'') \to \ \neg \ K(e') \circ K(e'')\ ]\ ]$

　　　　　　Every atomic subevent e' of e is such that P(e') <u>and</u>
　　　　　　*any two atomic subevents e' and e'' of e do <u>not</u> overlap in their time/*space

　　c.　Goal 1c:　Let's model the pluractionals that require 'distributivity in participants'

　　　　[[PA]]　　　=
　　　　$[\ \lambda P_{<\varepsilon t>} : [\ \lambda e : |e| > n \ . \ \forall e' \ . \ e' \leq e \ \& \ \text{atom}(e') \to P(e')$
　　　　　　$\& \ \forall e', e'' \ . \ e', e'' \leq e \ \& \ \text{atom}(e') \ \& \ \text{atom}(e'') \to \ \neg \ \theta(e') \circ \theta(e'')\ ]\ ]$

- When 'θ' = Agent, the agents of the subevents must differ
- When 'θ' = Theme, the themes of the subevents must differ, *etc.*

(41)   **A Few Reminders**

- There definitely *are* languages which require temporal separation of the various subevents described by a PA-marked verb (*e.g.* Kalaallisut)
    - o Thus, the lexical entry in (40a) is empirically well motivated

- It's not as obvious (to me) that we need the entries in (40b,c)
    - o Again, we don't know for sure that 'participant distributive' readings are distinct from 'time/space distributive' readings.
    - o We also don't know for sure that the 'time/space' distributive reading in (40b) is distinct from simply the 'temporally distributive' reading (37)

(42)   **A Potential Problem with Collective Readings**

Recall the Upriver Halkomelem sentence in (42a), and the fact that it can have the reading shown below.

a.   **Yaleq'**-et-es   te   theqat.
      fall.PLURAC-TRANS-3Subj DET   tree
      The felled the tree.

Under this reading, there is a plurality of agents. Suppose we tried to capture this reading by using the lexical entry in (40c), with 'θ' = Agent. We would get the following T-conditions.

b. $\exists e_{|e|>n}$. Agent(e, them) & Theme(e, the.tree) & $\forall$e' . e' $\leq$ e & atom(e') $\rightarrow$ *fell(e')
       & $\forall$e', e''. e', e'' $\leq$ e & atom(e') & atom(e'') $\rightarrow$ ¬ Agent(e') $\circ$ Agent(e'')

      There is a plural event of 'felling' with 'them' as the agent and 'the tree' as the
      theme, and each of the atomic subevents has a different agent.

Note that these T-conditions would require multiple events of *felling the same tree*. These T-conditions wouldn't hold in a 'collective scenario' such as the one in (42c).

c. | Fellings | Agent | Theme |
      |----------|-------|-------|
      | e_1 | them | the tree |

d.   **Conclusion:** Lasersohn's semanitcs predicts that PA-marked verbs will not
                      allow for readings where they describe a single, 'collective' event

e.   **The Problem:** It's not obvious this is true for all languages' PA markers.
                      The PA-markers in Halkomelem appear to allow such readings
                      (Thompson 2009).

(43)   **Goal 2: Let's Model the Connectedness Parameter!**

   a.   <u>Goal 2a:</u>   Let's model the pluractionals that require subevents to be
                              'separated in time'

         [[PA]]   =
         [$\lambda P_{<\varepsilon t>}$: [λe : |e| > n . $\forall e'$. $e' \leq e$ & atom(e') $\rightarrow$ P(e')
                 & $\forall e'$, e''. e', e'' $\leq$ e & atom(e') & atom(e'') $\rightarrow$ $\neg$ T(e') $\circ$ T(e'')
                        & $\exists t$. *between*(t, T(e') , T(e'') & $\neg\exists e'''$. P(e''') & t = T(e''')]]

         Every atomic subevent e' of e is such that P(e') <u>and</u>
                 any two atomic subevents e' and e'' of e do <u>not</u> overlap in their time, <u>and</u>
                        their times are separated by a span of time t,
                              *during which **no** event of P occurs…*

   b.   <u>Goal 2b:</u>   Let's model the pluractionals that require subevents to be
                              'continuous in time'

         [[PA]]   =
         [$\lambda P_{<\varepsilon t>}$: [λe : |e| > n . $\forall e'$. $e' \leq e$ & atom(e') $\rightarrow$ P(e')
                 & $\forall e'$, e''. e', e'' $\leq$ e & atom(e') & atom(e'') $\rightarrow$ $\neg$ T(e') $\circ$ T(e'')
                        & $\neg$ $\exists t$. *between*(t, T(e') , T(e'') & $\neg\exists e'''$. P(e''') & t = T(e''')]]

         Every atomic subevent e' of e is such that P(e') <u>and</u>
                 any two atomic subevents e' and e'' of e do <u>not</u> overlap in their time, <u>and</u>
                        *their times are **never** separated by a span of time t,*
                              *during which **no** event of P occurs…*

   c.   <u>Questions:</u>
         (i)   Are we sure we really need (43a,b) as distinct *meanings?*
                 Could 'continuity' simply be decided by context?
         (ii)   What controls which of these 'meanings' the PA gets? Do we just have
                 rampant lexical ambiguity, or is there some principled system (Haji-
                 Abolhosseini 2002, Yu 2003).

   d.   <u>Goal 2c:</u>   Let's do the same thing for 'connectedness in space'!

         [[PA]]   =
         [$\lambda P_{<\varepsilon t>}$: [λe : |e| > n . $\forall e'$. $e' \leq e$ & atom(e') $\rightarrow$ P(e')
                 & $\forall e'$, e''. e', e'' $\leq$ e & atom(e') & atom(e'') $\rightarrow$ $\neg$ K(e') $\circ$ K(e'')
                        & $\exists s$. *between*(s, K(e') , K(e'') & $\neg\exists e'''$. P(e''') & s = K(e''')]]

         [[PA]]   =
         [$\lambda P_{<\varepsilon t>}$: [λe : |e| > n . $\forall e'$. $e' \leq e$ & atom(e') $\rightarrow$ P(e')
                 & $\forall e'$, e''. e', e'' $\leq$ e & atom(e') & atom(e'') $\rightarrow$ $\neg$ K(e') $\circ$ K(e'')
                        & $\neg$ $\exists s$. *between*(s, K(e') , K(e'') & $\neg\exists e'''$. P(e''') & s = K(e''')]]

(44) **Goal 3: Let's Model the Relative Measure Parameter!**

- Unfortunately, this doesn't seem amenable.

- The informal notion of 'size' that Cusic (1981) appeals to, via which he groups together such factors as 'efficacy' of action and 'earnestness' doesn't seem amenable to rigorous formalization…

- For this reason, Lasersohn 1995 leaves it aside…

(45) **Goal 4: Let's Model the Phase / Event (Repetitive / Repeated) Parameter!**

a. <u>Lasersohn's General Perspective, Part 1:</u>

- A PA-marked verb with the 'Event' (Repeated) parameter setting is one where the PA-marked verb denotes pluralities of events, each of which lies in the denotation of the *non*-PA marked verb.

Qaartartu-t   qaar-**qattaar**-put
bomb-PL   explode-PLURAC-3PL
Bombs exploded again and again.

- **We needn't add anything to our semantics to obtain this kind of meaning**

b. <u>Lasersohn's General Perspective, Part 2:</u>

- A PA-marked verb with the 'Phase' (Repetitive) parameter setting is one where the PA-marked verb denotes a (complex) event *made up* of smaller events, each of which *do not* lie in the denotation of the non-PA marked verb.

<u>Saho:</u>   a.   *barar*   'to fly'
                 b.   *barrar*   'to flutter'

c. <u>The Formalization:</u>
A PA-marked verb with the 'Phase' (Repetitive) parameter setting has a denotation akin to the following.

[[V-PA]]   =
$[\lambda e : |e| > n . \forall e' . e' \leq e$ & atom(e') $\rightarrow$ Q(e')
$\quad\quad\quad$ & $\forall e', e''. e', e'' \leq e$ & atom(e') & atom(e'') $\rightarrow \neg T(e') \circ T(e'')]]$

d. <u>Some Obvious Question:</u>   (i) What determines the value of this variable 'Q'?
$\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad$ (ii) What about the meaning of the V? Where does
$\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad$ it fit in to the meaning of "V-PA"

(46) **What the Proposal Seems to Be**

- Under the 'Phase' (Repetitive) parameter setting, the meaning of the PA-marked verb is no longer compositional.

- Rather, the PA-marked verb is some kind of 'idiom'; its meaning is lexicalized (as is so often common with derivational morphemes)

- Thus, the equation in (45c) is not really a single lexical entry (or compositional rule) but rather a kind of 'constraint' on possible lexical entries…

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4. Lasersohn's (1995) Analysis of Pluractionals in Klamath

(47) **The Klamath-Modoc Language**
- Penutian language; distantly related to Chinook, Nez Perce, Tsimshian.
- Ancestrally spoken in Oregon & Northern California
- Last native speaker, Mabie "Neva" Eggstrom, passed away in 2003.
- Most information regarding the language is taken from Barker (1963).

(48) **Pluractional Marking in Klamath**

- Labeled as 'distributive' by Barker (1963).
- Phonological form is partial C(C)V- reduplicative prefix.
- Allows the following kinds of 'reading' (Barker 1963):
  - Action by single actor upon distributive objects
  - Action by single actor distributively upon single object over a period of time
  - Action by distributive actors upon a single object
  - Action by distributive actors each upon his own object
  - Action by distributive actors upon distributive objects

(49) **Some Illustrative Data**

a. <u>Single Actor Upon Multiple Objects</u>
    coy   sl'o:losdat   **pni**pno:goga
    then   elderberry.flute   **PA**-blow.through.tube
    Then he blew them into an elderberry flute   (Lasersohn 1995: 259)

b. <u>Multiple Actors</u>   coy   sa   **de**dalcna
                                 then   they **PA**-look
                                 Then they looked.   (Lasersohn 1995: 259)

c. <u>Single Actor Acting Over a Period of Time</u>
    coy   honk   ga7as   **si**si:ksik'a   c'is
    then   it   this.way   **PA**-move   also
    And it began to move back and forth also…   (Lasersohn 1995: 259)

(50)　**An Illustrative Minimal Pair**

　　　a.　　domi:　c'ik'as　　　　honkanga.
　　　　　　many　bird　　　　　fly.around
　　　　　　Many birds are flying around.　　　　　　(Lasersohn 1995: 261)

　　　b.　　domi:　c'ik'as　　　　**ho**hankanga.
　　　　　　many　bird　　　　　**PA**-fly.around
　　　　　　*Many birds are flying around **here and there.***　　　(Lasersohn 1995: 261)

Lasersohn (1995) also provides many other example sentences. Unfortunately, the others aren't particularly edifying…
　　　　　　　　We'll see many more examples of pluractionals over the next few classes…

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(51)　**Lasersohn's Analytic Goals**

　　　a.　　Predict that PA-marked verbs cannot denote single events.

　　　b.　　Predict the 'participant distributivity' readings, where the PA-marking seems to indicate a plurality of agents and/or themes (49a,b)

　　　c.　　Predict the 'temporal distributivity' readings, like (49c).

　　　d.　　Predict the 'spatial distributivity' readings, like (50b).

　　　e.　　Predict the fact that 'participant distributive' readings are not possible if the arguments are singular. In such cases, only temporal/spatial distributive readings are possible.

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(52)　**Goal (51a): PA-Marked Verbs Cannot Denote Single Events**

This is captured by setting the 'Phase / Event' parameter to 'Event':

　　[[PA]]　　　=　　　[$\lambda \mathbf{P}_{<\varepsilon t>}$: [λe : $|\mathbf{e}| > \mathbf{n}$. $\forall$e' . e' $\leq$ e & atom(e') $\rightarrow$ **P**(e') & …]]

(53)　**Goal (51b)-(51d): PA-Marked Verbs Get All Distributive Readings**

This can be captured by allowing all the readings in (43) as possible readings of the Klamath pluractional affix…

(54) **A Point of Criticism**

- Do we need to suppose that the pluractional affix in Klamath is ambiguous, admitting of all the readings in (43)?...

- After all, the simple lexical entry in (5), repeated below, would be *consistent* with distribution either by space, time, or participant.

  $$[[\text{ PA }]] \quad = \quad [\; \lambda P_{<\epsilon t>} : [\; \lambda e : |e| > n \;.\; \forall e' \;.\; e' \leq e \;\&\; \text{atom}(e') \rightarrow P(e') \;] \;]$$

- The various 'distributive parameters' in (43) were only introduced because some languages (*e.g.* Kalallisut) put *restrictions* on the kind of 'distributivity' allowed for their PA-marked verbs…

- Klamath seems to place *no* such restrictions on its PA-marked verbs…

- …***So we needn't posit an ambiguity here; simple 'nonspecificity' is sufficient…***

(55) **Goal (51e): No 'Participant-Based Distributivity' When Arguments are Singular**

- Consider the 'toy' sentence in (55a), where a PA-marked verb has two singular arguments.

a.   Dave kissed-PA Bill.

- Suppose that we were to assign this sentence a 'participant distributive reading'. It would have the T-conditions in (55b) below.

b. $\exists e_{|e|>n} \;.\; \text{Agent}(e, \text{Dave}) \;\&\; \text{Theme}(e, \text{Bill}) \;\&$
         $\forall e' \;.\; e' \leq e \;\&\; \text{atom}(e') \rightarrow {}^*\text{kiss}(e')$
            $\&\; \forall e', e'' \;.\; e', e'' \leq e \;\&\; \text{atom}(e') \;\&\; \text{atom}(e'') \rightarrow$
                  $\neg\, \text{Agent/Theme}(e') \circ \text{Agent/Theme}(e'')$

- These T-conditions, however are contradictory:

  o   Take any two subevents e' and e'' of e. Given the non-overlap condition, they must differ in their agents and/or their themes.

  o   Thus, the cumulative agent/theme of e'+e'' is a strict plurality, not an atom.

  o   Thus, the cumulative agent/theme of e must be a strict plurality, not an atom.

  o   Thus, the cumulative agent/theme of e could *not* be Dave/Bill, contrary to assumption.

(56)   **Consequence: PA-Marking Can Signal Plurality of Participant**

- Under a 'participant distributive' reading, the argument(s) of a PA-marked verb must be pluralities.

- Thus, we predict that PA-marking can play the functional role of marking (indirectly) the number of the V's arguments.

- <u>Slight Snag:</u>

    o   As we saw in (42), Lasersohn's semantics predicts that PA-marked verbs will not be able describe single events of 'collective' action.

    o   Thus, this semantics predicts that PA-marking cannot be used to (indirectly) mark the number of arguments to *collective* verbs.

    o   However, it does seem that PA-marking *can* serve this role in some languages (Thompson 2009)…