# Each what? Individual-key and event-key distribution

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## 1. Point of departure: Beghelli 1997
(this section retains Beghelli's terminology)

## 1.1 The pattern of Strong Distributivity (SD), exhibited by <u>each</u> and <u>every</u>

a. Type of the distributee: Distributivity is supported over any type of distributee, both cardinal (non-specific) and presuppositional indefinites.
b. Position of the distributor: Distributivity is supported from any argument or adjunct position, both direct and inverse distributive scope are possible.

Strong distributivity is effected by the functional head Dist. The sorting key of Dist is the unique minimal element of the [+dist] quantifier in its specifier. Its distributed share is provided by ShareP: by default events, but possibly individuals, cf. <u>A boy didn't read every book</u> $\forall > \exists > \neg$.
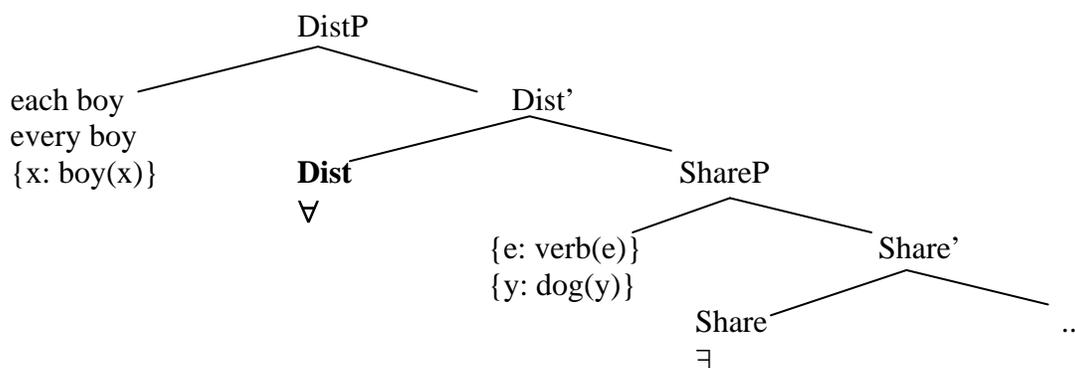


<u>Each boy</u>, <u>every boy</u>, and floating <u>each</u> (i.e., by assumption, Dist) support

- sentence-internal reading of singular <u>a different</u> (Beghelli & Stowell 1997, Brasoveanu 2011)
  <u>Each boy read a different book</u>,  <u>Every boy read a different book</u>,
  <u>The boys have each read a different book</u>

- pair-list readings in matrix questions and in <u>wonder</u>-complements (Groenendijk & Stokhof 1982, 1984,  Déprez 1994, Szabolcsi 1997)
  <u>What did each boy read?</u>            <u>Which book did each boy read?</u>
  <u>What did every boy read?</u>        % <u>Which book did every boy read?</u>
  <u>What did the boys each read?</u>        % <u>Which book did the boys each read?</u>

Caveat: <u>each NP</u> moves to Spec, DistP obligatorily, <u>every NP</u> optionally, so their actual behaviors diverge, specifically in the context of negation and interrogation; cf.  the % above.

See Beghelli for detailed discussion.  <u>Every NP</u> is not in the focus today.

**1.2 The pattern of Pseudo-Distributivity (PD), exhibited by silent EACH (σ)**

a. Type of the distributee:  (i)  PD is generally possible between two co-arguments when the distributor is presuppositional unless the distributee is a subject. (ii)  PD is generally impossible when the distributee is presuppositional, unless the distributor is a subject.
b. Position of the distributor: When both distributor and distributee are bare GQPs [plurals, conjunctions], PD is possible when the syntactic position of distributor and distributee observes the argument hierarchy   subject > indirect object / adjunct > direct object.

Silent EACH (σ) does **not** support

- sentence-internal readings of singular a different (Beghelli and Stowell 1997), though it supports sentence-internal readings of plural different
    # The boys σ read a different book          √ The boys σ read different books

- pair-list readings of matrix questions and wonder-complements involving plainly singular wh-phrases (G&S 1982, ..., Szabolcsi 1997), though it supports cumulative readings of plural or numberwise unmarked wh-phrases (Krifka 1991, Srivastav 1992)
    Which book did the boys σ read?          Which books/What did the boys σ read?
    # for each boy, which book did he read?      √ what items did the bs read between them?

 "I assume that [silent EACH] corresponds to the LF distributive adverbial that underlies what Safir and Stowell (1988) call "binominal each" as in Two students read a book each. In the spirit of Safir and Stowell's analysis, let's assume that the postnominal modifier each raises in LF to a position where it can be anteceded by the distributor two students and c-commands the distributee a book. Silent EACH is a covert counterpart of binominal each, which occurs in the position to which binominal each has raised. ... I will not pursue the details of a unified analysis of adverbial and binominal each. What is most relevant for our purpose here is that binominal each has some of the properties that we need for our silent distributive element ..."
(Beghelli 1997: 375)

**2. Questions for today**

(A) Is there a fundamental difference between Dist and σ? Among other things, why do overt adverbial each vs. silent EACH behave differently?

(B) What is the correct analysis of binominal each? Is it indeed "binominal"?

(C) What other expressions do, cross-linguistically, pattern with binominal each?

From now on I will use the more neutral term  "adnominal each".

### 3. Zimmermann 2002 on adnominal <u>jeweils</u>   (serves as baseline literature)

**1.5    Co-occurrence Restrictions on Adnominal *Jeweils***
While adverbial *jeweils* can adjoin to any VP, adnominal *jeweils* is subject to two co-occurrence restrictions. First, the DistKey has to be expressed by a plural expression that denotes a group or set of individuals (cf.14a). With no plural expression present, as in (14b), only the adverbial reading is possible.

(14)   *Plural Restriction on DistKey:*
   a.  Die Jungen/ Zwei Jungen/ Peter und Klaus/ kaufen *jeweils*   zwei Bücher.
        The boys /  two boys /      P. and K.          buy     each      two books
        'The boys / two boys / Peter and Klaus are buying two books each.'
   b.  Peter / der Junge kauft  *jeweils*     zwei Bücher.
        Peter / the boy    buys   each.time  two books
        i.   'Each time, Peter / the boy buys two books.'
        ii.*'Peter/ the boy buys two books each.'

The plural restriction on DistKey is semantic in nature. Recall that adnominal *jeweils* distributes sets denoted by the DistShare over atomic members of the pluralic set denoted by the DistKey. Distribution is impossible if the DistKey is a singular DP and denotes an atomic individual, for there is nothing to distribute over in this case. Any semantic account of adnominal *jeweils* must account for this restriction.
   The second restriction concerns the DistShare. The DistShare must be expressed in form of an indefinite expression (cf.15a). With definite expressions, or with expressions headed by strong quantifiers (cf. Barwise & Cooper 1981, de Hoop 1995), only the adverbial reading is available (cf.15b).[8]

(15)   *Indefiniteness Restriction on DistShare:*
   a. Die Jungen    lieben *jeweils* zwei/ einige/    verschiedene Frauen.
      the boys       love   each   two     some        different       women
      'The boys love two / several / some / many women each.'
   b. Die Jungen    lieben *jeweils*    die/   jede  /  alle    Frau(en).
      the boys       love   each.time the/   every/  all     woman/en
      'The boys love the / every / all woman/en each time.'
      *'The boys love the / every / all woman/en each.'

(25)   *Morphosyntactic Condition on Adverbial Readings with Adnominal Elements:*
      The adnominal element must not contain (overtly expressed) D-features.

(164)  a.  $[[P^0_j \text{ jeweils}_i \text{ zwei Würstchen}]]$                              *by λ-abstraction over 'j'*
           $= \lambda R_j.\forall z[z \in Z_i \rightarrow \exists X[2\text{sausages}(X) \wedge *R_j(z,X)]]$
       b.  $[[P^0_j \text{ jeweils}_i \text{ zwei Würstchen kaufen}_j]]$              *FA of (164a) to (163)*
           $= \forall z[z \in Z_i \rightarrow \exists X [2\text{sausages}(X) \wedge \exists e [*\text{buy'}(z, X, e)]]]$
       c.  $[[P^0_j \text{ jeweils}_i \text{ zwei Würstchen kaufen}_j]]$              *λ-abstraction over 'i'*
           $= \lambda Z_i.\forall z[z \in Z_i \rightarrow \exists X [2\text{sausages}(X) \wedge \exists e[*\text{buy'}(z,X,e)]]]$
       d.  $[[\text{die Jungen}_i P^0_j \text{ jeweils}_i \text{ zwei Würstchen kaufen}_j]]$    *by FA to [[the boys]]*
           $= \forall z [z \in [[\text{the boys}_i]] \rightarrow \exists X [2\text{sausages}(X) \wedge \exists e [*\text{buy'}(z, X, e)]]] = 1$ iff
       e.  for each z which belongs to a specific group of boys there is a set of two
       sausages X and an event e such that z buys X in e.'

**4. Adnominal <u>each</u>** (Szabolcsi 2010: Ch 8)

Sutton's 1993 descriptive generalization is that **the hosts of adnominal <u>each</u> must be "counting quantifiers"** (not the same as "indefinites", cf. Zimmermann's (15)). This explains both the fact that certain strong determiners are allowed and the fact that not all weak ones are.

(72)  a. #There are more than 50% of the films.
      b. The boys have seen more than 50% of the films each.
(73)  a. #There are few of the films.
      b. The boys have seen few of the films each.
(74)  a. There are good films.
      b. #The boys have seen good films each.
(75)  a. There is/are no problem(s).
      b. #The boys have no problem(s) each.
(76)  a. There is a problem.
      b. ??The boys have a problem each.  (but: √ one problem each)

Sutton observes that the "counting" property cannot be demarcated in truth-conditional terms (see Hackl 2009 for much discussion):

(77)  a. The boys have seen most of the films (# each).
      b. The boys have seen more than 50% of the films (each).

The standard "binominal" analysis says that <u>each</u> relates a plural nominal (sorting key) and an indefinite nominal (distributed share); Safir & Stowell 1988, Zimmermann's (14), (164).

That analysis does not account for the fact that **adnominal <u>each</u> accepts distributive singular universals as "sorting-key providers"**. But, practically all native speakers I have consulted have accepted these; Safir and Stowell in fact state that they are okay; naturally occurring examples are easy to find on the internet.

(78)  Every boy had one apple each.
(79)  % Each boy had one apple each.

(80)  a. <u>Every Australian</u> donated <u>one sequin each</u> to supply ON-J with enough for her and her back-up singers.
      b. These three bands made a tripling single together, Mikkai, where <u>every band</u> had <u>one song each</u>.
      c. <u>Every patient</u> received <u>one subcutaneous infection each</u> of the synthetic and the animal preparation, . . .
      d. <u>Every square</u> costs <u>one Cent each</u> at the beginning – but the price doubles at each transaction.

(81)  a. Give <u>each student</u> <u>one worksheet each</u>. They should circle "prediction" on the page.
      b. There must be less than five players, and <u>each of the four</u> will chose <u>one symbol each</u> (eg. hearts, spade, etc).

(x)     a. They have <u>each</u> had <u>two martinis each</u> and, so far, they have spent less than a dollar in
               total.  http://www.ofarts.ca/Index_files/Mailbag/mailbag.htm
        b. The women's basketball (2006, 2009), women's lacrosse (2008, 2009) and men's golf
                programs (2008, 2009) have <u>each</u> claimed <u>two titles each</u>.
               http://www.sacredheart.edu/pages/28706_shu_wins_back_to_back_nec_commissioner_s
               _cups.cfm
        c. the Graduate Student Organization, the Student Activities Programming Board and
               the Campus Center will <u>each</u> appoint <u>two students each</u>;; the Faculty **...**
               Partnerships : Campus Center : IUPUI  *life.iupui.edu/campus-center/about/partners.html*

**In (78)-(79), which ∀ operator takes the boy-set as its sorting key?**

**Adnominal <u>each</u>?** Cf.  $\forall z[z \in Z_i ...]$  in Zimmermann's  (164)
**What is the determiner <u>every/each</u> (or Dist) doing, then? And does, or does not, Z have to
be a plural individual, as opposed to a mere set?**

**They cannot both be quantifying over the same set:  double, i.e. vacuous, quantification.**

The stylistic markedness of the English examples might give us pause if it weren't the case that
cross-linguistically, there are many distributive operators that (a) share at least one reading with
adnominal <u>each</u>, (b) require the exact same hosts, and (c) accept distributive singular universals
as "sorting-key providers" entirely naturally and without a hint of stylistic trouble.  I conclude
that one should look to those languages and constructions for guidance.

**With the exception of  Balusu 2005,  the literature either never mentions distributive
universals as "sorting-key providers", or if it does, it pays no attention to them.**

(90)   ii      pilla-lu          <u>renDu renDu</u> kootu-lu-ni           cuus-ee-ru          Telugu
       these   kid.pl          two     two    monkey.pl.acc        see.past.3pl
(95)   prati   pilla-vaaDu                                        cuus-ee-Du
       every   kid                                               see-past-3sg
       lit. `these kids/every kid saw two-two monkeys'

(99)    A gyerekek / minden gyerek / valamennyi gyerek <u>két-két</u> majmot láttak/látott.    Hung.
         `The children/every child/each child saw two monkeys each'

(SH)   motun salam-i         kapang  sey-kay-<u>ssik</u>-ul      wunpanha-yess-ta.      Korean
       every   man-nom         suitcase three-quant-distr-acc  carry-past-decl
       `Every man carried three suitcases each'

(101)  Irabazle   bakoitzak   bi-<u>na</u>        sarrera   eskuratuko  ditu.                Basque
       winner     each.erg   two-distr    ticket     receive.fut  aux
        'Each winner will receive two tickets each'

Telugu from Balusu 2005; Hungarian after Farkas 1997; Korean supplementing Oh 2001;
Basque supplementing Pereltsvajg 2008; Zimmermann 2002:43 also cites data from Bulgarian
and Korean.

## 5. Balusu 2005: Participant-key readings are event-key readings in disguise

(90) Telugu: These kids saw two-two monkeys
(95) Telugu: Every kid saw two-two monkeys

First approximation: both (90) and (95) are three-ways ambiguous:

PK  Participant-key:         Each kid saw two monkeys
TK  Temporal event-key:      Each kid saw two monkeys at each relevant interval
SK  Spatial event-key:       Each kid saw two monkeys at each relevant location

Plurality implicature/presupposition:  More than one pair of monkeys overall. If factually the same pair of monkeys is involved, then reduplication is felicitous only if the speaker isn't aware, or if the monkeys' identity is irrelevant. See Zweig (2005, 2009) for existential bare plurals:
        The suspects live in big cities; maybe even in the same big city.

### TK and SK

Let $\pi(e)$ be a contextually given partition of the event *e*.

(33)    a. $\exists E[\forall y[kid(y) \rightarrow \exists e \in E \; \exists \pi(e) \; [\forall e' \in \pi(e) \; [\exists X[two\_monkeys(X) \wedge saw(y, X, e')]]]]]]$
        b. $|\{X: two\_monkeys(X) \wedge \exists y[kid(y) \wedge saw(y, X, E)]\}| > 1$

`There is an event E such that for each of the kids there is an event e which is part of E such that there is a partition of e such that the kid saw 2 monkeys in each cell of the partition associated with him/her.' The temporal or spatial key readings, TK or SK, arise depending on whether $\pi(e)$ is a partition of the temporal or spatial aspect of the event.  (33a)  accounts for the double distribution in TK and SK: events distributed over kids, monkey-pairs distributed over cells in the event-partition. (33b) says that the total number of monkey-pairs in the big event where any kid saw monkey-pairs is greater than 1. Assume E-type anaphora to events as in Schein 1993.

### But what accounts for PK? The partition may be trivial: a one-cell partition: $\pi(e) = \{e\}$

"The only difference between the event key readings and the participant key readings is that for the temporal and spatial key readings the partitions are non-trivial. If the partition is trivial, i.e. $\pi(e)=\{e\}$, then all the monkey-sighting events by an individual kid are lumped together. Thus, for every kid there will be just 2 monkeys that he or she saw. The plurality condition then says that altogether there [has] to be more than [one] monkey pair. The interpretation in [33] then gives us all the three readings..." (Balusu 2005) In fact there are more than just 3 readings for (90), since plural subjects themselves can also be collective or cumulative.

Absense of a plural or universal co-argument combined with a trivial event-partition is ruled out by the plurality requirement. The exx below only have a chance to comply on the non-trivial TK and SK readings.

        Telugu:  Ram saw two-two monkeys [only: at each location or interval]
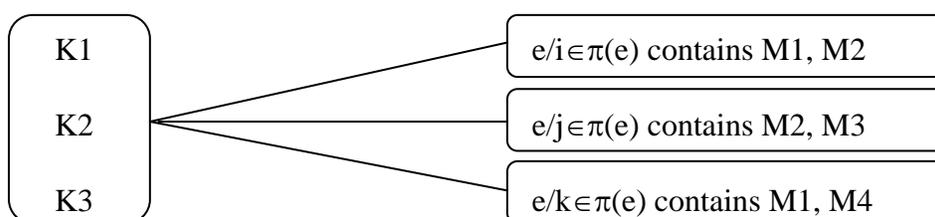        Telugu:  Two-two monkeys jumped [only: at each location or interval]

Assume a Landman 2000 style semantics for collective, cumulative (scopeless distributive), and scopally-quantified-in distributive (SQI) readings.
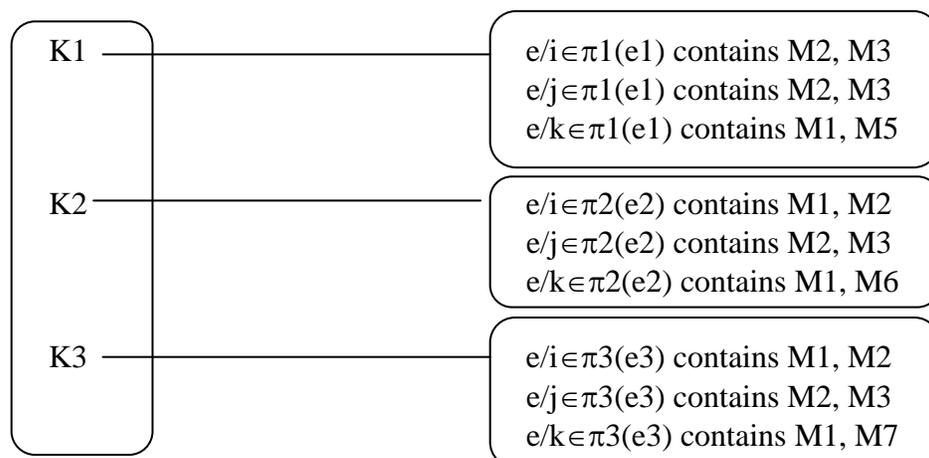
$SQI_n[\alpha,\phi] = APPLY[\lambda x.\forall x_n \in AT(x): \phi, \quad \alpha]$

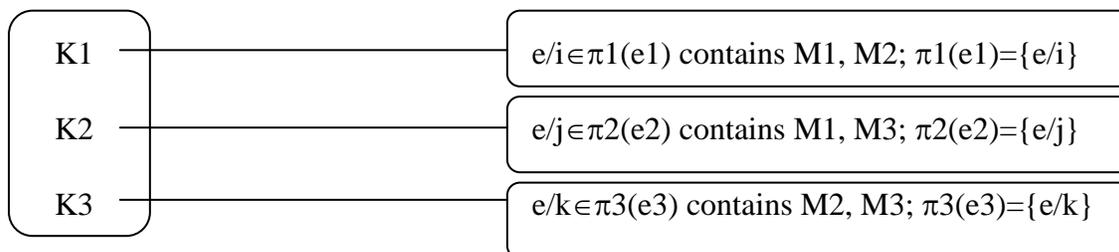"$\lambda x.\forall x_n \in AT(x): \phi$ is a semantically plural predicate" (Landman, p. 194)

<u>These kids caught/saw two-two monkeys</u> (Telugu)

| K1 | | e/i∈π(e) contains M1, M2 |
|---|---|---|
| K2 | | e/j∈π(e) contains M2, M3 |
| K3 | | e/k∈π(e) contains M1, M4 |

A. collective/cumulative, $\pi(e)$ is a non-trivial spatially or temporally based partition of event

| K1 | | e/i∈π1(e1) contains M2, M3<br>e/j∈π1(e1) contains M2, M3<br>e/k∈π1(e1) contains M1, M5 |
|---|---|---|
| K2 | | e/i∈π2(e2) contains M1, M2<br>e/j∈π2(e2) contains M2, M3<br>e/k∈π2(e2) contains M1, M6 |
| K3 | | e/i∈π3(e3) contains M1, M2<br>e/j∈π3(e3) contains M2, M3<br>e/k∈π3(e3) contains M1, M7 |

B. SQI-distributive, $\pi(e)$ is a non-trivial spatially or temporally based partition of event

| K1 | | e/i∈π1(e1) contains M1, M2; π1(e1)={e/i} |
|---|---|---|
| K2 | | e/j∈π2(e2) contains M1, M3; π2(e2)={e/j} |
| K3 | | e/k∈π3(e3) contains M2, M3; π3(e3)={e/k} |

C. SQI-distributive, $\pi(e)$ a singleton (trivial, one-cell event partition; comprises all monkey-sightings by that individual)

<u>Every kid caught/saw two-two monkeys</u> (Telugu)

A.   * collective/cumulative
B.   Dist-distributive, $\pi(e)$ is a non-trivial spatial or temporal chunking of event
C.   Dist-distributive, $\pi(e)$ a singleton (trivial, one-cell partition)

## 6. Korean, Hungarian, Basque, and English anti-quantifier markers are NumP-pluralizers

- Based on Oh 2001, supplemented by Sangjin Hwang, Korean –ssik covers the same range as Telugu reduplication. The split quantifier version kapang-ul sey-kay-ssik is ambiguous between TK/SK/PK, the DP-internal version kapang sey-kay-ssik-ul only yields PK readings.
- Hungarian reduplication and Basque numeral+na (as opposed to numeral+na+ka) only have PK readings.  [But see Postscript, 2012, in Section 9]
- English adnominal each only has PK readings.

Do these have "genuine PK" readings, i.e. ones that depend directly on a nominal co-argument or adjunct, as opposed to an event partition, in some way or another?

(i) Suppose numeral reduplication, -ssik, -na, and adnominal each are analyzed as plain distributive operators over sets of individuals (Zimmermann 2002, a.o.). Then the double distribution problem arises in all four languages; the anti-quantifiers that yield PK readings accept both plurals and distributive universals as apparent "sorting-key providers" (p. 4).

(ii) Suppose they are analyzed as dependent indefinite markers (Farkas 1997, Oh 2001). Then we introduce a new beast into the zoo, with properties that we cannot quite foresee.

(iii) Both analyses miss the glaring similarities with pluralization (morphology, semantics).
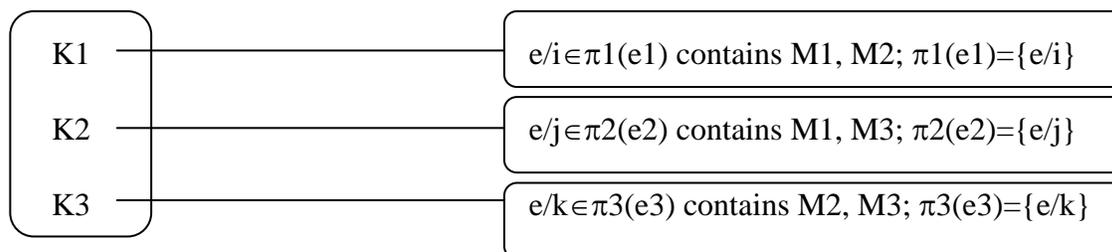
(iv) What we need is a theory of plurals that subsumes both vanilla-flavored and dependent plurals. See Zweig 2009.

|  |  |
|---|---|
| Mary has big heads. | (multi-headed person needed) |
| My friends have big heads. | (no multi-headed person needed; multiple heads overall) |
| Boys flew every kite. | (no boy needs to fly more than one kite; multiple kites overall) |

Plural morphology means `one or more'. Plurality implicature `more than one overall' makes reference to events.

(v) Proposal: Numeral reduplication, -ssik, -na, and adnominal each are NumP-pluralizers.
Hungarian reduplication and adnominal each require that $\pi(e)$ be trivial.
Then, with distributive predication (SQI or Dist) they look like PK items.

The kids/every kid saw two monkeys each, etc. only one reading:

| K1 | —— | e/i∈π1(e1) contains M1, M2; π1(e1)={e/i} |
|----|----|------------------------------------------|
| K2 | —— | e/j∈π2(e2) contains M1, M3; π2(e2)={e/j} |
| K3 | —— | e/k∈π3(e3) contains M2, M3; π3(e3)={e/k} |

(vi) Both vanilla-flavored and dependent plurals count ⟨event, object⟩ pairs. See also Doetjes & Honcoop 1997 (event-related readings) and Nakanishi 2007 (Japanese split numerals) for counting ⟨event,object⟩ pairs. -- Recast Balusu to account for the fact that Ram saw two-two monkeys is bad if Ram simply saw three monkeys in the same event/place/time.

If the proposed analyses are correct, Zimmermann's (25) does not capture a real correlation. English adnominal <u>each</u> (D-like) and Hungarian numeral reduplication (not D-like) have the same range of meanings. See also Bittner & Trondhjem's 2008 critique of Partee's conjectured division of labor between D-quantifiers and A-quantifiers.

## 7. "Skolem-functional" readings:  silent EACH & adnominal <u>each</u>    vs.    adverbial <u>each</u>

(1)     Which book did each boy read?                                                    cf. p.1
        Pair-list answer: √  John read Emil and the Detectives,  and Bill read The 35th of May.
        Natural-functional answer: √  His grandpa's favorite book.

(2)     Each boy read a different book.                                                  cf. p.1
        Sentence-internal: √  one-to-one map from boys to books
        Sentence-external: √  different from the book that (say) Mary read

Add now what have been called Skolem-functional readings (Schlenker 2006), some of whose problems have been discussed in Chierchia 2001 and Schwarz 2001.

(3)     If each student makes progress in a certain area, nobody will flunk the exam.
        Skolem-functional: √  `There is a function f from students to areas such that if every student x makes progress in the area fx, nobody will flunk'

(4)     If not every student/no student makes progress in a certain area, some people will flunk.
        # `There is a function f from students to areas such that if not every/no student x makes progress in area fx, some people will flunk' –  would be verified by picking the  function from boys to areas of string theory, but the sentences are not;
        √ `There is an area such that if not every student/no student makes progress in it, some people will flunk'

The literature cited above, Brasoveanu 2011, and Solomon 2011 cumulatively observe that
**(1), (2), and (3) are supported by <u>every NP</u>, <u>each NP</u>, and probably overt adverbial <u>each</u>, but not by other determiners, and not by plurals plus silent EACH (σ).**

(3')    If the students make progress in a certain area, nobody will flunk.
        # `There is a function f from students to areas such that if every one of the students x makes progress in area fx, nobody will flunk' ; √ `There is an area such that...'

**Brasoveanu 2011** and **Solomon 2011** have a crucial ingredient in common (in informal terms): **The domains of <u>every</u> and <u>each</u> contain a set of PAIRS OF individuals (functions); these pairs are derived from (alternatively, must be able to reduce to) the traditional domain type, viz. individuals.**

Pair-list questions, <u>a different</u>, and alleged Skolem-functional indefinites **access** those sets of pairs (functions); they **do not provide** them.  E.g. according to Brasoveanu & Farkas 2009, Solomon 2011, wide-scoping indefinites themselves have no pair-list functional interpretations.

AS1    If the students have <u>each</u> made progress in a certain area, nobody will flunk. √p-l function
AS2    If the students have made progress in <u>two areas each</u>, nobody will flunk.      #p-l function

### 8. Complications with overt adverbial <u>each</u>

(Tentative -- I haven't yet done sufficient field work on this)

- Prediction: adnominal <u>each</u>, like silent EACH, does not license pair-list and <u>a different</u>.
    - A potential counterexample:
        - <u>The parents gave two boys each a different book</u>
    - But this probably involves not <u>two boys each</u>, but adverbial <u>each</u>, since singular subject and definite "host" are okay:
        - <u>Mary gave two boys each a different book</u>
        - <u>Mary gave the boys / us each a different book</u>
- Adverbial <u>each</u> co-occurs with <u>every NP</u> (Google hits)
    - I do not question the fact that <u>every financial bubble</u> may <u>each</u> have its specific causes
    - <u>Every other trainee</u> will <u>each</u> have their own twin size bed
    - Plus im sure that <u>every entry</u> will <u>each</u> have something unique.
    - <u>Every Huaxi villagers' household</u> has <u>each</u> been assigned a car and a single-family home
- Déprez 1994: The closer floated <u>chacune</u> is to the VP, the more difficult the list reading of questions.
- Possibly, the exact behavior of adverbial <u>each</u> depends on its position (whether or not this is coupled with a semantic ambiguity anchored in <u>each</u> itself).

### 9. Postscript, 2012
<mark>Hungarian numeral reduplication is restricted to overt keys, not to "participant key" readings</mark>

Szabolcsi (2010) assumed that Hungarian reduplication carries the same range of readings as English adnominal <u>each</u>, based on the parallels below:

| | | |
|---|---|---|
| # <u>John took two pills each.</u> | ≈ | # <u>János két-két tablettát vett be.</u> |
| # <u>There are two mayors each.</u> | ≈ | # <u>Két-két polgármester van.</u> |

However, as I have recently realized, the two languages diverge:

# <u>In those days, John took two pills each.</u>  ≈ OK <u>Azokban a napokban János két-két tablettát vett be.</u>
# <u>In those towns, there are two mayors each.</u> ≈ OK <u>Azokban a városokban két-két polgármester van.</u>

And likewise with universals:

OK <u>János minden nap két-két   tablettát vett be.</u>
     John  every   day  two-two pill-acc  took in

OK <u>Minden városban két-két   polgármester van.</u>
     every    town-in  two-two mayor         is

The lesson is that Hungarian has straightforward event-key (temporal or spatial key) readings, just as Telugu and Korean. **What Hungarian lacks is straightforward event-key readings with phonetically null temporal or spatial adverbs**.

English adnominal <u>each</u>, in contrast, requires not only an overt supporter, but one with an event-participant theta-role: agent, patient, etc.

This finding by itself does not invalidate Balusu's proposal that NumP pluralization always relies on distribution over a partition of silent event argument (with my proposed modification in tems of counting <event, object pairs>), although it may make a difference for the optimal theory.

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