

# Linking the collective-distributive opposition and the telic-atelic opposition

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## Questions this poster addresses:

- Why does *all* reject cumulative readings and some collective predicates?
- How does it differ from *each*?

## Conclusions:

- The constraint that prevents *for*-adverbials from modifying telic predicates is also operative in *all* and in *each*.
- *All* distributes down to subgroups; *each* distributes all the way down to atoms.
- This explains why *all* rejects cumulative readings and some collective predicates.
- Theories about *for*-adverbials can be adapted via **stratified reference** (Champollion 10, 15a,b) to formalize this account.

## All and each are similar...

No cumulative readings (Zweig 08):

- (1) a. The safari participants saw 30 zebras.  
b. Each safari participant saw 30 zebras.  
c. All the safari participants saw 30 zebras.

No *numerous*-type collectives (Dowty 87)

- (2) a. \*Each student was numerous.  
b. \*All of the students were numerous.

## ... but different

Only *all* takes some collective predicates (Dowty 87):

- (4) a. \*Each student gathered in the hallway.  
(5) All the students gathered in the hallway.

## All is also similar to for-adverbials

*For* does not license cumulative readings:

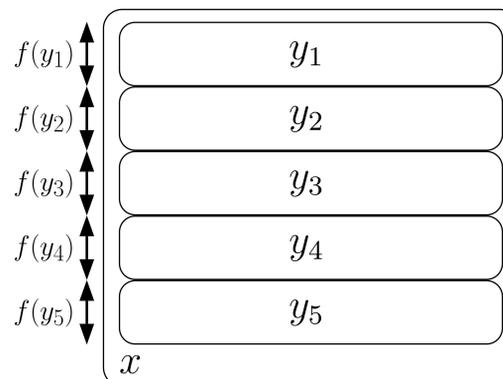
- (6) John saw thirty zebras for three hours.

Its meaning is similar to *each* (Dowty 79):

- (7) a. John ran for 1 hour.  $\approx$  *at each moment*

## The common core: stratified reference

An entity or event  $x$  has stratified reference (SR) wrt. dimension  $f$ , granularity  $\epsilon$  and predicate  $P$  iff  $x$  consists of  $P$ -parts  $y_1 \dots y_n$  that are  $\epsilon$ -small when measured along the dimension  $f$ .



$$SR_{f,\epsilon}(P,x) := x \in *[\lambda y.P(y) \wedge \epsilon(f(y))]$$

Sentence	$f$	$\epsilon$	$P$
He ran for an hour	runtime	short times	run
each kid talked	agent	Atom	talked
all the kids met	agent	small subgroups	met

## What for does

*For*-adverbials impose SR **to short temporal intervals**:

- (8) John talked for an hour. (*atelic*)  
SR: The event consists of shorter talking events.
- (9) \*John finished talking for an hour. (*telic*)  
SR: The event consists of shorter finish-talking events.

## What each does

*Each* imposes SR **down to atomic parts of its agent**:

- (10) Each of the safari participants saw 30 zebras.  
SR: The event consists of seeing-30-zebras events whose agent is an atom. (true)
- (11) \*Each of the students was numerous.  
SR: The state consists of being-numerous states whose agent is an atom. (false)

## What all does

*All* imposes SR **down to subgroups of cardinality two but not all the way down** (cf. Kuhn 14):

- (12) All of the safari participants smiled.  
SR: The event consists of smiling whose agents are subgroups of size two or less (*True because "smile" is distributive*)
- (13) All of the students gathered in the hallway.  
SR: The event consists of gathering events whose agents are subgroups of size two or less (*True because "gather" is "a bit" distributive*)
- (14) \*All of the students are numerous.  
SR: The state consists of being-numerous states whose agents are subgroups of size two (*False because "be numerous" is collective*)

## SR is incompatible with cumulative readings

- (15) All of the safari participants saw thirty zebras.  
  
SR: The event consists of seeing-thirty-zebras events whose agents are subgroups of size two (*Not true on the cumulative reading*)

## References

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