All

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1 Introduction

- *Distributive predicates:* e.g. walk, smile, take a breath (applies to a plurality just in case it applies to each of its members)
- *Collective predicates:* e.g. be numerous, gather, suffice to defeat the army (may apply to a plurality even if it does not apply to each of its members)
- *All* is incompatible with some collective predicates (Kroch, 1974; Dowty, 1987):

(1) a. The students who came to the rally are numerous.
b. The men who run this country are politically homogeneous.
c. The people on this boat are a motley crew.
d. The soldiers in this bataillon sufficed to defeat the army.

(2) a. *All the students who came to the rally are numerous.
b. *All the men who run this country are politically homogeneous.
c. *All the people on this boat are a motley crew.
d. *All the soldiers in this bataillon sufficed to defeat the army.

- But it is compatible with others:

(3) a. The students gathered in the hallway.
b. The professors met in the garden.
c. The soldiers dispersed.

(4) a. All the students gathered in the hallway.
b. All the professors met in the garden.
c. All the soldiers dispersed.

- **Why?** Previous answers: Dowty (1987), Winter (2001)
- This talk: new answer in terms of the sum-group distinction
  - Sums are collections without internal structure; they consist exactly of a bunch of parts; taken from mereology (Simons, 1987)
  - Groups are structured collections (comparable to sets); they may have properties above and beyond their parts, e.g. a group of individuals can take collective action and have collective responsibility

2 *All* vs. *every/each*

- Extending the puzzle: *All* and *each* are similar but different

2.1 Numerous-type collective predicates

- Numerous-type collective predicates are predicates which have a collective interpretation but which lose this interpretation with *all* (Kroch, 1974; Dowty, 1987)
- Baseline example:

(5) The ants in the colony were numerous. **distributive, ✓collective*

- *Each* and *Every* block collective readings:

(6) a. *Each ant in the colony was numerous. **distributive, *collective*
b. *Every ant in the colony was numerous. **distributive, *collective*

- *All* blocks collective readings:

(7) *All the ants in the colony were numerous. **distributive, *collective*

- Generalization: For *numerous*-type collective predicates, *each* and *every* behave exactly as *all* does
- Other examples of numerous-type collective predicates: *be politically homogeneous, be a motley crew, suffice to defeat the army* (Kroch, 1974)

2.2 Gather-type collective predicates

- *Gather-type* collective predicates can lead to distributive and collective interpretations, even in the presence of the word *all* (Vendler, 1962; Dowty, 1987; Taub, 1989; Brisson, 2003; Winter, 2001)
- The collective interpretation of *gather*-type collective predicates is also blocked by *every/each*, but it is not blocked by *all*:

(8) a. All the students gathered in the hall. **distributive, ✓collective*
b. *Each student gathered in the hall. **distributive, *collective*

- Other examples: *be similar, fit together* (Vendler, 1957), *meet, disperse, scatter, be alike, disagree, surround the fort*, the object argument of *summarize* (Dowty, 1987), and *form a big group* (Manfred Krifka p.c. via Brisson 2003).

Questions.

- Why do *all* and *every/each* behave differently with respect to gather-type collective predicates?
- Why do gather-type and numerous-type collective predicates behave differently with respect to *all*?

- We will look for an answer in *for*-adverbials.

  For-adverbials are most commonly associated with the telic/atelic opposition.

(9) a. John **talked** for five minutes. *atelic*
b. *John **finished talking** for five minutes. *telic*

(10) a. John **ate apples** for an hour. *atelic*
b. *John **ate ten apples** for an hour. *telic*

3 Explaining the similarities between *for* and *all*

- The presupposition of a *for*-adverbial is something like this (Dowty, 1979):

(11) **Presupposition of *for three hours*:**
Every VPing event consists of one or more VPing events whose runtimes are very small compared to *three hours*.
–*John talked for three hours* presupposes something **true**: that every smiling event consists of one or more talking events whose runtimes are very short compared to *three hours*.

– **John finished talking for three hours* presupposes something **false**: that every finish-talking event consists of one or more finish-talking events whose runtimes are very short compared to *three hours*.

- Idea: *all* imposes a constraint on the verb phrase predicate which is analogous to the presupposition of *for*-adverbials, except that the "dimension" involved is not runtime but the thematic role of the *all*-phrase, usually *agent*
- Assume that *all* distributes the verb phrase (VP) predicate down to atoms (singular individuals):

(12) **Presupposition of *all*:**
Every VPing event consists of one or more VPing events whose agents are atomic.
– *All the children smiled* presupposes that every smiling event consists of one or more smiling events whose agents are atomic.

4 Explaining the behavior of *numerous* and *gather*

- Idea: gather-type and numerous-type collective predicates instantiate two different notions that have both been called collective predication

4.1 Collective predication

- General idea: a predicate that applies to a plural entity as a whole, as opposed to applying to the individuals that form this entity
- Two distinct views of collectivity (Verkuyl, 1994)

4.1.1 Thematic collectivity

- Defined by the presence of noninductive entailments, e.g. collective responsibility or collective action (Landman, 2000)

(13) The Marines invaded Grenada. (Roberts, 1987, p. 147)

(14) The boys touch the ceiling. (Landman, 2000)

(15) The boys carried the piano upstairs. (Landman, 2000)

- Sentence (13) is about the Marines as an institution.

- Following Landman (1989), I model thematic collectivity by using groups ("impure" atoms)
- For any set of individuals there is also a group that corresponds to this set, and this group is an atom

4.1.2 Nonthematic collectivity

- Negative definition: a predicate that does not distribute down to singular individuals
- Similar to the *kolkhoz collectivity* of Verkuyl (1994), also see Jespersen (1913)
- E.g. a plurality of people may be numerous (that is, if it has many members), but it does not even make sense to apply the predicate *numerous* to a single person.
- My conjecture:

(16) a. Thematic collectivity = gather-type collective predicates
b. Nonthematic collectivity = numerous-type collective predicates

(17) The boys are numerous.
The sum of all boys is numerous, i.e. is large in number.

(18) The boys gathered.
The group of all boys gathered.

- I assume that being numerous is a property that a sum of individuals has *qua* sum, and that the agents of nonthematic collective predicates can never be impure atoms.

4.2 *All* distinguishes between *be numerous* and *gather*

(19) a. *All the boys were numerous. *nonthematic collectivity*
b. All the boys gathered. *thematic collectivity*

- Truth conditions of these sentences (both with and without *all*):
- Presupposition of (19a):

(20) Every event e in the denotation of *be numerous* can be divided into one or more parts each of which is in the denotation of *be numerous* and has an atomic agent.

- This fails because *be numerous* is nonthematic collective
- Consider now the case of *gather*

- We need to explain why the presupposition of *all* is not violated by *gather*
- Since *gather* is thematic collective, *All the boys gathered* involves a group agent.
- Its presupposition is as follows:

  (21) All the boys gathered.
  Presupposition: Every event e in the denotation of *gather* can be divided into one or more parts each of which is in the denotation of *gather* and has an atomic agent.

- This presupposition is vacuously satisfied because any gathering event can be divided into one or more gathering events – usually into just one part, namely itself – which has an atomic agent.

4.3 *Gather* distinguishes between *each* and *all*

- Why are *gather*-type collective predicates incompatible with *all* but compatible with *each*?

  (22) a. All the students gathered.
  b. *Each student gathered.

- Idea:
  - *Every* and *each* distribute over pure atoms
  - *All* distributes over atoms no matter whether they are pure or impure
- On the group interpretation, *the students* refers to an impure atom, so it is compatible with *all* but not with *each*.
- The presupposition of *each* is as follows:

  (23) Every event in P can be divided into parts which are in P and whose agents are pure atoms.

- The presupposition of *all* is as follows:

  (24) Every event in P can be divided into parts which are in P and whose agents are atoms.

- *Gather* satisfies the presupposition of *all* but not of *each*.

– It satisfies the presupposition of *all* because it is thematic collective, and as such it only applies to events whose agents are atoms.

– It fails to satisfy the presupposition of *each* because these agents are not guaranteed to be pure atoms.

Answers.
Why do *all* and *every/each* behave differently with respect to gather-type collective predicates?

– *Each* distributes down to pure atoms; *all* distributes down to pure and impure atoms.

Why do gather-type and numerous-type collective predicates behave differently with respect to *all*?

– Only the agents of gather-type collective predicates may be impure atoms.

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