
Partitives, quantifiers, and numerals - an experimental study

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In this paper, we explore experimentally an interaction between partitives, quantifiers, and numerals, as in (1), focusing on the semantic import of *all three* and *both*.

- (1) a. Look at these children. **All three** of their toys are blue.
b. Look at these children. **Both** of their toys are blue.

The results show that both (1a) and (1b) can obtain three readings, which in case of (1a) involve: (i) three toys overall (CUMULATIVE READING), (ii) three toys per child (DISTRIBUTIVE READING), or (iii) three children (INDIVIDUAL READING). The revealed differences between (1a) and (1b) concern: (i) an extent to which the readings are acceptable, and (ii) their behaviour in contexts where the number of objects was incorrect.

We assume a structural ambiguity between the cumulative/distributive vs. individual readings; in the latter both/all three is part of the possessor. For this reason, the cardinality inference involves the toys in (4a) but the children in (4b).

- (4) a. [both [0/ N [of [their toys]]]] (cumulative/distributive)
b. [[both 0/ N of their] toys] (individual)

The distributive and cumulative reading of (4a) are due to the respective interpretation of the PossP ‘their toys’. Following Zweig (2007), Barker (2019), we assume that the cumulative reading is actually a dependent plural reading, arising in possessives with a plural possessor and bare plural head: the head ‘toys’ is truth-conditionally singular but carries a multiplicity inference that overall there must be several toys. Dependent plural readings are similar to distributive readings in that the children are each required to own a toy, but multiplicity (several toys) is not distributive: one toy per child is enough. To derive the distributive readings, a distributive operator is included in the structure (Ivlieva 2020). The different behavior of *all three* and *both* can be explained by the different status of the cardinality information: with *both*, it is a part of the presupposed (but not the asserted) content, whereas with *all three*, it is presupposed as part of the restrictor (Heim & Kratzer 1998) but also asserted.

References: • Barker, C. (2019). *Possessives and relational nouns*. In Portner et al. (eds): *Semantics: noun phrases, verb phrases and adjectives*. • Heim, I & A. Kratzer (1998). *Semantics in Generative Grammar*. • Ivlieva, N. (2020). Dependent Plurality and the Theory of Scalar Implicatures: Remarks on Zweig 2009. *JoS* 37:425-454. • Zweig, E (2007). Possessive Plurals and Their Readings. Presentation, 5/11/2007.