Nonatomic distributive readings: an experiment

This paper reports on an experiment that tested whether 1) the nonatomic distributive reading of sentences with a plural subject and indefinite singular object is available in a supporting context, and 2) the availability of this reading is conditioned by the form of the subject.

**Background.** The first question has a long history in the literature of distributivity: although it is generally accepted that, given a supporting context, nonatomic distributivity is a possible reading of sentences with a plural subject and an indefinite singular object, Link 1998, Winter 2001 claimed that distributivity can only be atomic, suggesting that the grammar should only generate the reading where the subject is universally quantified. The second question concerns a lesser studied aspect of the phenomenon. Schwarzschild 1996, Champollion 2016 assume that both atomic and nonatomic distributivity involve a silent verbal operator whose semantics is specified for the relevant granularity. Author 2017 challenges this view with an account where the distribution comes from the verbal domain, but the granularity of the distribution is specified in the nominal domain by a silent operator available only in the structure of plural common nouns that forms the atomic or nonatomic minimal elements for further predication. This account predicts that nonatomic distributivity is only available when we predicate over plural common nouns, and not proper names.

**Design.** I constructed 16 texts each describing a nonatomic distributive event as in (1). For every text there were four test sentences based on the combination of two subject (definite plural and conjoined proper names) and two VP conditions (bare plural and singular indefinite object):

(1) Mrs. Brady had only four students in home economics class this year, Eleanor, Finn, Gillian and Harry. Today’s lesson was cake baking. After a short introduction, Mrs. Brady split the class into two groups for the actual baking. Eleanor and Finn worked together on the one hand, and Gillian and Harry on the other. At the end the cakes turned out to be so good that they were served after the football game in the afternoon.

a. Today in home economics class, the students baked cakes.

b. Today in home economics class, Eleanor, Finn, Gillian and Harry baked cakes.

c. Today in home economics class, the students baked a cake.

d. Today in home economics class, Eleanor, Finn, Gillian and Harry baked a cake.

Four lists were created so that each participant saw each text only once with one of the four test sentences, and each participant saw an item of a given condition four times. The 16 critical items were presented among 8 fillers. The task was to rate the truthfulness of the sentence in the given scenario on a scale ranging from 1 (absolutely untruthful) to 6 (absolutely truthful). Predictions: 1. (1a) and (1b) items would be judged as absolutely truthful, since I assumed their meaning is underspecified. 2. (1c) items would be judged absolutely truthful if the nonatomic distributive reading is available in a supporting context. 3. (1d) items would be downgraded if the subject influences the availability of nonatomic distributivity.

**Results and discussion.** 54 native English speakers completed the survey on Prolific Academic. The results showed that although the participants accepted sentences with indefinite singular objects, they judged them consistently worse that the ones with bare plurals, and did not differentiate based on the subject. The ordinal regression analysis showed a significant effect of the VP \((p=0)\), but there was no significant effect of the subject \((p=.222)\). This indicates that the nonatomic distributive reading of (1c) and (1d) sentences is available in a supporting context, however, the effect of the VP not explicitly explained by the literature. To see if this effect is due to nonatomicity or rather distributivity itself, I will test whether speakers differentiate between (1c) and (1d) sentences when presented in an atomic or nonatomic scenario. Finally, though the experiment did not show a role for the form of the subject, I plan to conduct a forced choice task to see speakers’ preference to determine the role of the subject in the availability of nonatomic distributivity.