

Semantics and pragmatics of plurality

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In this paper, I present joint work with Donka Farkas on the semantics and pragmatics of nominal number. The question addressed in this paper is a deceptively simple one: what is the difference in meaning between singular and plural nominals in languages where this distinction is morphologically marked (*a book/books, a child/children*)? The challenge resides in the apparent mismatch between form and meaning of nominal number.

Although the singular is expressed by the unmarked form of the noun (*book, child*), and plurality is marked morphologically (*books, children*), recent proposals in the literature posit a strong semantics for the singular in terms of atomicity while taking the plural morpheme to be semantically vacuous. Such an approach is motivated by the existence of so-called inclusive readings: *Do you have children? Yes, I have one/#No, I have one.* The plural form *children* in the question is not incompatible with atomic reference in the answer, which suggests that the plural noun implies the entire lattice (atoms and sums).

In this paper, we propose an alternative account which treats the plural as semantically relevant and the singular as not contributing any number restriction on its own. The main conceptual advantage of our proposal is that it respects Horn's division of labor so that morphologically marked forms are semantically marked as well. We also discuss a series of empirical challenges to previous analyses and examine how our analysis meets them.

The proposed account grounds the semantics of singular and plural nominals in bidirectional optimization over form/meaning pairs. The plural noun (*books, children*) carries a number feature [PI], but singular nouns are unmarked, and do not carry number information. We take atomic reference to be the semantically unmarked option, which leaves sum reference as the marked interpretation. A set of bias constraints defined over all-form meaning combinations is balanced by the markedness constraint *FUNCTN (avoid functional structure in the nominal domain). The bidirectional modelling of Horn's division of pragmatic labor leads to the association of sum reference and mixed sum/atomic reference with plural nouns, and atomic reference with singulars.

Both an inclusive and an exclusive sum interpretation are available for plural nominals under this semantics, so we exploit the strongest meaning hypothesis as a pragmatic principle that decides between the two interpretations in context. In upward entailing contexts, the exclusive interpretation is the strongest meaning, so we predict sum reference to be the appropriate interpretation of *Mary saw horses*. In downward entailing contexts and questions, the inclusive interpretation is stronger, because of scale reversal. This predicts the inclusive interpretation to be appropriate for *Do you have children? Or Mary didn't ask questions.*

The empirical coverage of the approach extends to subtle pragmatic distinctions. For instance, when I spill something in the kitchen of a friend, I might ask *Do you have a broom?* But when I go to the store to buy a broom, I might ask a sales representative *Do you have brooms?* So the choice of a singular or a plural form in a question is not arbitrary.

In the paper, we also treat some cross-linguistic contrasts that have not been widely discussed in the literature so far. Hungarian is similar to English in that it has a morphological singular/plural distinction (*gyerek* 'child'/*gyerekek* 'children'). However, when it comes to plural indefinite DPs, Hungarian combines the plural determiner with a singular noun, where English would use a plural noun. That is, we use *három gyerek* 'three child', rather than **három gyerekek* 'three children'. If the singular noun conveys atomic reference, under a 'strong' singular approach, this would be unexpected. Under our analysis, both singular and plural nouns are expected to be compatible with a plural determiner. After all, the determiner (*three, many, etc.*) conveys plurality, so the grammar has the choice between the use of an

unmarked (singular) noun, or agreement (with a plural noun). We spell out the different choices Hungarian and English make in an OT syntactic analysis.

The analysis of number interpretation and number morphology developed here has two main advantages over competing proposals. On the one hand, our analysis is in line with Horn's division of pragmatic labor. On the other hand, we link meaning distinctions to choice in form and cross-linguistic variation, which give us an empirical advantage.