Degrees of Countability: A Mereotopological Approach

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Most work on countability assumes a binary countable/non-countable contrast: countable nouns, such as 'dog', allow plural marking ('dogs') and accept modification by number words ('two dogs'), while non-countable nouns, such as 'sand', do not permit plural marking (*sands), nor modification involving number (*two sands). I discuss data from a range of languages which possess three or more categories of grammatical number, often distinguishing entity types such as "collective aggregates" (swarming insects, vegetation) and/or "granular aggregates" (grass, sand). From this broader cross-linguistic perspective, I then propose that the morphosyntactic organization of grammatical number systems reflects the semantic organization of noun types according to the degree of individuation of their referents. Nouns of different types are individuated to different degrees and can accordingly be ordered along a scale of individuation: substances < granular aggregates < collective aggregates < individuals. Noun types which are less individuated are on the lower end of the scale and are cross-linguistically less likely to signal grammatical number, while the converse holds for highly individuated noun types. Understanding morphosyntactic number categories in light of a scale of individuation avoids the difficulties binary accounts face, since languages may divide up the scale of individuation into any number of classes and at different points.

In the second part of the talk, I turn to the formal modeling of countability. Most formal semantic treatments of countability use mereology, or the theory of part-relations; however, I show that it turns out not to be sufficiently expressive to account for the broader typological data. I argue that it is necessary to enrich mereology with connection relations that model ways in which the referents of nouns may come together, resulting in the more expressive "mereotopology". I show that this extension leads to faithfully modeling the degrees of countability found across languages and overcomes problems in the countability literature, e.g. the "minimal parts" problem.