

Geometry and function in spatial terms: Core and more

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Theories of the meanings of spatial terms often focus on geometric properties as the key to understanding meaning. For example, “The cat is on the mat” might engage geometric properties characterizing the figure (cat, a ‘point’) and the ground (mat, a ‘surface’) as well as the geometric relationship between the two objects (‘on’, coincidence). However, other theorists suggest that geometric properties are far from sufficient to capture the meanings of many spatial terms, and that instead, functional, force-dynamic properties of objects (e.g. support, containment) are crucial to spatial term meanings. In this talk, I argue that both approaches are necessary to understanding the variety of spatial terms that appear in language. To do this, I introduce two new divisions of labor within English spatial prepositions. The first is a division between ‘geometric’ spatial terms in English (including above/below, left/right, north/south/east/west), and ‘functional’ or ‘force-dynamic’ terms (including in, on, and others), with each set of terms drawing on quite different kinds of properties. The second division of labor is within the set of functional/force-dynamic terms; here, the ‘core’ exemplars of a category are encoded with the simplest expressions (e.g. is in/ is on), while ‘non-core’ exemplars are encoded through use of a rich set of lexical verbs that help specify the particular kind of force-dynamic properties engaged. The division between geometric and functional / force-dynamic terms has many consequences, including the ease of acquisition of each type in first or second language acquisition, the extent and kind of cross-linguistic variation for each type, and possibly the neural substrate underlying the two types.