Far From Obvious: the Semantics of Locative Indefinites

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Indefinite descriptions are existential quantifiers. This slogan of traditional logic is apparently accepted by linguists as often as it is rejected. Much work in natural language semantics has been driven by the motivation to explain, or explain away, the many challenges that have been found for the existential analysis of indefinites. This talk addresses yet another puzzle for the existential analysis, which has nonetheless received surprisingly little attention so far: the interpretation of indefinites appearing within prepositional locatives. Consider the examples below, based on Iatridou (2003, 2007), who attributes the observation to Irene Heim (p.c.).

(1)   a.   Michael is far from a gas station.
        b.   Michael is close to a gas station.

In the appropriate context – e.g. a car race in the desert, when Michael's car is running out of gas – sentence (1a) means that Michael is far from all gas stations. We informally say that sentence (1a) exhibits a (pseudo) universal interpretation. By contrast, sentence (1b) only has an existential interpretation, which states that there is at least one gas station near Michael. As we will show, interpretative variations as in (1) appear with many other locatives besides the distal expressions *close to* and *far from*.

At first glance this puzzle may seem reminiscent of other problems with indefinites: apparently universal interpretations also show up with indefinites in generic sentences and in the scope of downward-entailing operators. It may therefore be suspected that contrasts as in (1) are straightforwardly explained by some classical theories of quantification. However, we will show that such a view on the contrast in (1) is problematic. The existential-universal alternation in (1) only marks two extremes in a wide range of interpretations that indefinites show when they appear within locative expressions. The complexity of (pseudo) quantificational effects with these indefinites cannot be explained without addressing the semantics of locatives. To address the problem, we propose a theory that establishes a close connection between the interpretation of indefinites in locatives and accounts of generic indefinites using *kinds* or *properties* (Carlson 1977, Chierchia 1998). We explain alternations as in (1) by analyzing the indefinite as having a predicative denotation. This follows a leading idea since Milsark (1974): some indefinites may lack a quantificational force of their own and denote predicates or intensional guises of predicates.

Letting indefinites denote properties, we propose that properties in locative sentences like (1) have a spatial dimension similar to entity concepts. We analyze

sentences (1a-b) on a par with locative sentences like *Michael is far from/close to London*. Just like the latter sentences make a statement about Michael's distance from the entity *London*, we propose that sentences (1a-b) make a claim about Michael's distance from the property *gas station*. Substantiating this proposal involves standard concepts from theories of locative expressions. First, we let entities like gas stations, cities etc. occupy *regions* in a spatial semantic domain. Locative expressions like *far from* and *close to* are associated with binary relations between such regions. Such spatial relations are intimately related to subpart relations between entities. For instance, being far from London means being far from all of its subparts. Conversely, being close to London means being close to at least one of its subparts. We show that the contrast in (1) follows from a similar consideration as soon as spatial semantics is tuned to deal with properties. But now, how do we locate properties? We propose that the property *gas station* is located at the union of regions of its sub-parts: the single gas station entities. With this assumption our proposal correctly expects sentence (1a) to require that Michael be far from the union of all gas station regions. This entails that Michael is far from all gas stations. By contrast, sentence (1b) is analyzed as stating that Michael is close to the union of gas station regions. This statement means that Michael is close to at least one gas station. We conclude that locating the property denotation of the indefinite in (1) immediately captures the contrast between the two sentences. In the rest of this talk we show that the same analytical line applies equally well in other locative sentences with indefinites, whereas potential alternative accounts fail. Subsequently, we formally couch the property-based approach within J. Zwarts & Winter's (2000) *vector space semantics* of locatives. Lastly, we briefly discuss how our account of indefinites is relevant for various puzzles about collectivity, genericity, negative polarity items and part-whole structure.

Joint work with Sela Mador-Haim

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