

'Grammatical' vs. 'Lexical' Meaning Constructors for Glue Semantics

Full presentation

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The 'glue semantics' employed in recent Lexical-Functional Grammar (LFG; Dalrymple 2001, Asudeh 2004) is a powerful and flexible technique for defining Montague-style semantic composition over feature structures, but suffers from various problems, including insufficient constraints on what kinds of semantic composition that its 'meaning constructors' can effect (Andrews 2007). This problem arises in part due to the fact that the meaning-constructors employed in glue semantics have two components, a 'glue side' and a 'meaning side', both of which contribute to the details of how semantic composition works. The internals of the glue side are however invisible to the syntax, and relatively unregulated. The 'obvious' analysis of intersective adjectives for example looks like this:

$$\lambda P\lambda x.P(x)\&Adj(x) : (e -o p) -o e -o p$$

where 'e' represents type 'entity' located at the NPs f-structure, and 'p' represents type 'proposition' also located there, and the formula to the left of the colon says to take the meaning of the noun (P, of type e -o p), and intersect it with that of the adjective (Adj, of the same type) so as to create a new property (of type e -o p).

But, in the first place, as discussed by Dalrymple (applying earlier work by Kasper), this doesn't work properly, and, second, the capability of having complex internal structure on the meaning-side allows for various kinds of meanings that don't seem to exist, such as, for adjectives, a hypothetical adjective **alleger*, meaning 'someone who alleges that someone else is an N', e.g. 'alleger murderer' = a person who alleges that somebody else is a murderer:

$$\lambda P\lambda x.Ey.Allege(x, P(y)) : (e -o p) -o e -o p$$

Andrews (2007) proposes to address problems like this with general principles relating the form of the glue side to that of the meaning side, but his approach does not appear to provide a solution to this particular problem.

What I propose instead is to make a division between 'lexical' and 'grammatical' meaning-constructors, with only the latter allowed to have complex arguments with types such as e -o p, and these grammatical constructors furthermore limited to a specific list of ones allowed by universal grammar. UG will then provide an 'intersector' of the form:

$$\lambda P\lambda Q\lambda x.P(x)\&Q(x) : (e -o p) -o (e -o p) -o e -o p$$

which says to take the properties denoted by the adjective and the noun, and intersect them.

Lexical constructors on the other hand are an open-ended collection, but can only have arguments of 'basic' types, such as entity, proposition, degree of magnitude, etc, and so cannot specify complex forms of semantic combination. The nonexistence of **alleger*-like adjectives will then be explained by the absence from UG of the required kinds of grammatical constructors.

References:

Asudeh, Ash (2004) *Resumption as Resource Management*, PhD thesis, Stanford University

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