Syntax-Driven Semantic Frame Composition

Laura Kallmeyer & Rainer Osswald

We present first results of a cooperation between the SFB 991 projects A02 (Argument Linking and Extended Locality: A Frame-Based Implementation) and B01 (Verb frames at the syntax-semantics interface). A common goal of both projects is to employ frames for modeling the semantics of verb-based construction and for investigating the interaction between semantic composition and syntactic operations. While project B01, building on the framework of Role and Reference Grammar (RRG), aims at a detailed frame-semantic and syntactic analysis of selected constructions across languages, the focus of project A02 is on the formal, constraint-based description and implementation of such constructions using the formalism of Lexicalized Tree Adjoining Grammars (LTAG).

In the talk, we give a brief introduction into the LTAG formalisms and show how the specification of elementary trees by means of metagrammatical constraints allows a strong factorization of the syntactic and semantic information provided by a given construction and, thereby, a detailed model of the interaction of the lexical semantics of the verb and the semantics of the constructional realization. We then use the English dative alternation ('send somebody something' vs 'send something to somebody') as an example to illustrate how constructions and semantic frames can be decomposed and composed within the metagrammar and how syntactic unification in the metagrammar and in LTAG can drive the semantic unification of frames. Moreover, we discuss the related case of transport and caused directed motion expressions and point out some options and open issues related to the representation of change of location and directed motion. We conclude the talk with a few remarks on how the metagrammar framework can also be of use to develop a formal account of RRG.