Frame semantics and discourse modeling

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The way of distributing information is one of the core aspects in the interaction of sentence structure and interpretation: the *information structure* of the sentence. The goal of this talk is to present a model of discourse processes and related concepts of information structure. The proposed model builds upon the basic assumptions of a frame-based representation of semantic and conceptual knowledge based on Löbner (2017) and Petersen (2015).

Information structure concerns the way communicating agents organize information within a discourse. In verbal communication, context and grammatical form determine the informational content of an utterance together. Natural languages provide various formal means to signal what the essential contribution of an utterance is to the shared knowledge of the interlocutors, generally referred to as the *Common Ground* [CG] (Stalnaker 2002; Krifka & Musan 2012). The CG is a constantly changing abstract object, updated by each step in the discourse. In a broad sense, information structure is defined in terms of *information packaging* (Chafe 1976) and its basic categories: the ways how information is transferred between the interlocutors. Under this broad understanding, general cognitive categories are defined that reflect the interface between the mental representations (information states) as conceptualization of the CG and the universe of the discourse. Such cognitive categories are *givenness* and *aboutness* that are often considered as primitives. Modeling concepts of information structure constitutes a modeling of communication acts and discourse processes where *referential structure* and *information update* are of central importance. This calls for a cognitively plausible framework. Frame semantics builds upon the hypothesis that the human cognitive system works with a uniform format of representation that is argued to be a *frame* format (Löbner 2015; following Barsalou 1992, Barsalou & Hale 1993).

In my talk, a discourse-model will be proposed using frame-semantic representations. Content words evoke *concepts* (frame structures), while function words lead to special operations on or structuring of these concepts. The discourse universe is built upon a sequence of utterances, where each utterance is represented in terms of *discourse objects* that are linked to the frame representations of the corresponding concepts, formally defined as an ordered pair. The discourse referents are all linked to respective nodes in the frame. This representation shares important basic insights with the corresponding DRT representation of the sentence, however, as I will argue, a frame-based characterization of the conditions of the referents has various advantages. Using the proposed model, we will discuss two strategies of reference tracking: *continuing topic* and *topic shift* in detail, based on examples from the discourse-configurational language (É. Kiss 1995), Hungarian and the non-configurational language, Lakhota (Ullrich 2016). I will propose a frame-based model of the cognitive process of discourse interpretation, where next to the information updates *reference tracking* is of central importance. Certain morphosyntactic choices depend on whether the given NP expresses a continuing topic or a topic shift. In pro-drop languages, for example, it determines the choice between a zero morpheme and a noun phrase or demonstrative pronoun.

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