

Pragmatic Structuring and Negation in Formal Grammar

The central objective of the work presented in this talk is the formal modeling of ‘focus sensitivity’ of negation and related phenomena. Information structure, and hence focusing, manifests itself in different layers of natural language: (i) in interpretation: semantically, in terms of introducing alternatives (e.g., Rooth, 1992; Krifka, 2001) or pragmatically, in terms of relating to the QUD (Roberts, 2012) or in terms of pragmatic structuring (Lambrecht, 1994), and (ii) in structure building: in terms of the triggering of dedicated syntactic operations and configurations (e.g., É. Kiss, 1995). It is widely accepted that the interpretation of a range of linguistic expressions is dependent on the IS of the utterances in which they occur (König, 1991; Krifka, 2001; Beaver & Clark, 2008). This holds for a range of focus sensitive particles (e.g., *only*, *also*, *even*), as well as for negation. This observation is cross-linguistically valid and the phenomenon is referred to as *focus sensitivity*, that can manifest itself in different ways. Current approaches to focus sensitivity are rather restricted to the field of formal semantics/pragmatics. However, despite their fairly uniform semantics, focus sensitive elements vary across languages with respect to their structural behaviour, which in turn strongly affects their modeling in formal grammar. Leading grammar theories and formalisms that capture IS-phenomena (CCG, LFG, HPSG) do not systematically address focus sensitivity. These accounts generally acknowledge both aspects of IS, structure building and interpretation, but they often concentrate on only one of them, or lack the formal means in their architecture to equally address both aspects.

The formal analysis of any linguistic phenomenon requires a two-sided approach: theoretical claims need to be verified by empirically valid and formally exact models, and formal models must be built on solid theoretical grounds. Therefore, in our proposal, we build upon the formalized version of Role and Reference Grammar (Kallmeyer et al., 2013; Osswald & Kallmeyer, 2018), which facilitates such a two-sided approach. The formal specification of this grammar is inspired by Tree-Adjoining Grammar (Joshi & Schabes, 1997), while it is based on a solid theoretical framework, RRG (Van Valin & LaPolla, 1997; Van Valin, 2005), with a strong typological and cross-linguistic perspective. However, the system lacks a formal specification and modeling of information structure, which asks for an extension. The general architecture of RRG is modular, with linking relations defined between various levels of representation (called ‘projections’). At the center of the grammatical system of RRG is a bi-directional linking of syntax and semantics, capturing both language production and comprehension, and influenced by discourse-pragmatics. The representation and analysis of discourse-pragmatics is given in the *Focus Structure Projection*. Within this projection, RRG distinguishes the *actual focus domain* (AFD), the syntactic domain that corresponds to the *focus* in Lambrecht’s (1994) terms, and the *potential focus domain* (PFD), where the focus can occur. Both syntactic domains include one or more *information units* (IU), which are the minimal phrasal units in the syntactic representation (Appendix, Figure 1). The formalized version of RRG has the advantage that semantic construction can be carried out compositionally. Syntactic templates come with (pieces of) semantic representations, given as *decompositional frames* (Petersen, 2015; Löbner, 2017), formally defined as *base-labelled typed feature structures* (Kallmeyer & Osswald, 2013). The semantic composition is on a par with the syntactic composition, mediated by the interface features on the nodes. The syntactic operations trigger the composition of the semantic representations, thereby deriving the meaning representation of the sentence. The semantic composition proceeds by *unification* (Appendix, Figure 2).

A central cross-linguistic claim is that negation has a direct access to the focus structure of the utterance. Generally, there are two types of negation distinguished: predicate (or clausal) negation (1a) and focus (or constituent) negation (1b).

Appendix

Figure 1. Focus structures in classical RRG

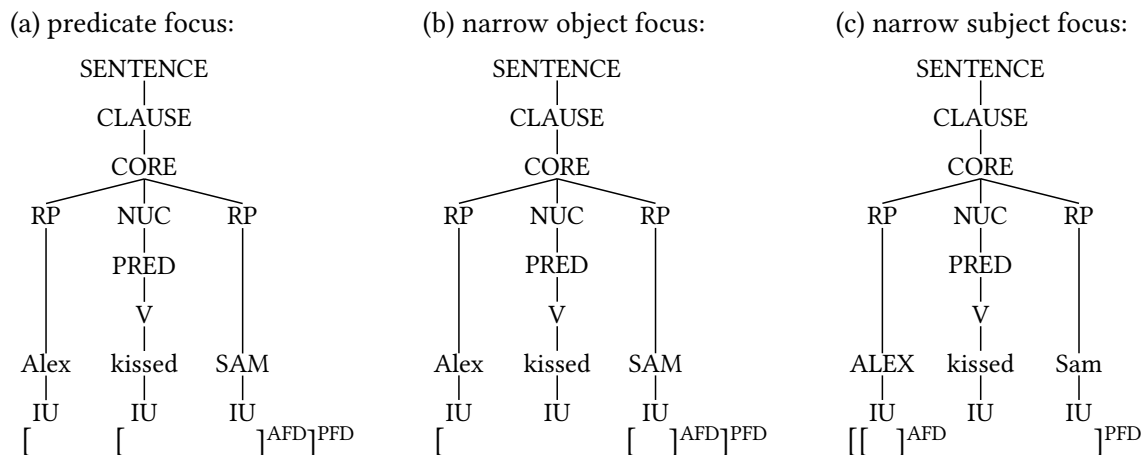
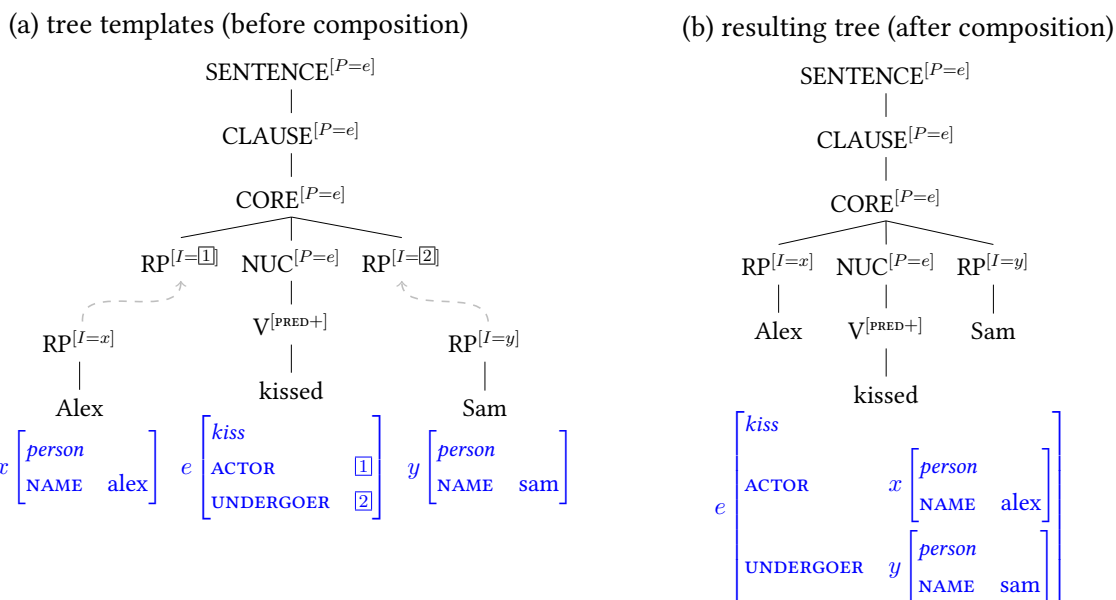


Figure 2. Syntax-semantics interface in formalized RRG



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