

Grammar Engineering: Core Phenomena

11.06.2012

1. Download the starting grammar <http://www.coli.uni-saarland.de/~yzhang/ge/grammar/grammar06.tgz>.

This is a small Matrix-based HPSG grammar for English. The basic phrase structure rules, lexical and morphological rules and lexical entries have been provided. Basic semantic compositions have also been implemented. In this exercise, you will extend the grammar to cover basic modification phenomena, and implement both syntactic and semantic compositions.

Have a look at the test suite file “*items*”. You should use these data as the basis for your analysis and grammar development.

2. First, introduce morphological rules for the past tense verbs. Notice that there are both regular and irregular verbs in the test suite.
3. Introduce new rules to handle syntactic compositions. You need minimally two rules to cover the pre-/post-head modification. However, you might also want to introduce more to make the distinction between intersective and scopal modifiers. Also, you need to introduce lexical types and entries for the adjectives and adverbs.

Besides, pay attention to spurious ambiguities that may arise when pre-/post-head modifications co-exist. Use extra features to reduce the unnecessary ambiguities.

4. After deriving appropriate syntactic attachments, investigate the MRS structures produced by the grammar. Pay special attention to the difference of intersective and scopal modifiers in semantic representations.

As usual, document your analysis for each step.