SS 04 5. Juli 2004

Frank Richter:
Grammatikformalismen für die Computerlinguistik

Aufgabenblatt 9

Exercise 1. [2 points]
Summarize the parsing problem of HPSG in your own words.

Exercise 2. [4 points]
The grammar of Sectoin 3.1.2 in *'Grammar Formalisms and Parsing'* licenses the sentences *I walk* and *She walks* while correctly excluding **I walks* and *She walk*. Add two new pronouns to the grammar, *you* and *they*, and modify the lexical entry of *walk* in such a way that the grammar licenses *You walk* and *They walk* with a reasonable representation for agreement and semantics, while excluding ungrammatical sentences which may result from the syntactic combination of the given words.

Exercise 3. [2 points]
The TRALE grammar which you find in the Section *Spook* on the seminar page for downloading TRALE grammars is a small grammar which is very similar to those that we have been working with. However, there are a few mistakes built into this grammar. You can see their effects if you parse sentences such as:

(1) a. she walks

b. she loves her

c. i walk

d. she gives me milk

e. she loves me

These sentences all get an unexpected number of answers from the system, which is due to the mistakes in the grammar. Other sentences get the right number of answers from the system. Find the mistakes in the theory file of the grammar, fix them, and write short comments into the file about what was wrong.
To find the mistakes pay attention to what the TRALE compiler is telling you, and think about what typical typos might look like in grammars. Debugging your grammar is what always takes most of the time in any grammar implementation effort!

Exercise 4. [5 points]
Implement the modular HPSG specification in (37)–(40) (Section 3.1.3, pp. 161–162) of the original third TRALE grammar in TRALE (the lexicon may just be copied from the theory file of the third TRALE grammar). Since it is an equivalent reformulation of the grammar we started with, queries to the system should still receive the same answers as before.