Grammar Development in Constraint-Based Grammar Formalisms

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Exercise Sheet 3

1. In directory `sample-grammars/spook` we came up with a solution to exercise 2.1b of the last exercise sheet. It kind of works, but some things just don't come out right. Can you find out what's wrong?

   (a) `query(phon:[i,walk]).` fails even though it shouldn't.

   (b) `query(phon:[she,loves,me]).` returns two solutions instead of the expected one.

   (c) `query(phon:[she,gives,me,milk]).` fails unexpectedly.

   To track down the problems, copy our directory `sample-grammars/spook/` to one of your subdirectories, compile the grammar and try to find out what's going on using the ConTroll debugger. Then correct the grammar so that all three cases which caused problems return the wanted result.

2. We discussed in class how grammatical principles can be used to express a grammar in a more general way. Copy our grammar `sample-grammars/ex2.1b` to a new directory `ex3.2` of yours and modify the theory so that it makes use of three principles: the Head-Feature Principle, a simple Semantics Principle, and a Subcat Principle.

3. Now that we have created a simple sentence grammar for English, we would like you to develop a simple NP grammar. To do so, create a new directory `ex3.3` and specify a signature and a theory. Apart from pronouns such as *she* und *her*, your NP grammar should also licenses NPs which consist of a determiner such as *some* und a noun such as *computer*. Regarding selection within the NP you may assume that nouns have SUBCAT lists whose only list-element is a determiner.