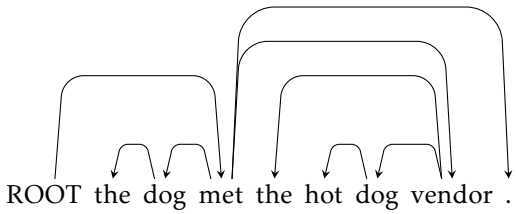
Dependency Parsing exercises: Context free dependency parsing

Deadline: 03.05.2021

Please send completed solutions to waszczuk@hhu.de and evang@hhu.de with subject "dependency homework" and attachment "ex3_lastname(s).pdf".

1. Consider the following unlabeled dependency tree:



   (a) Give the (smallest) bilexical context-free grammar allowing to parse the sentence and obtain the desired dependencies

   (b) Show one CYK parsing derivation for the sentence *the dog met the hot dog vendor .* (including the full stop) using the grammar determined in the previous step and draw the corresponding constituency tree

   (c) How many different constituency trees can be obtained in (b) ? Do they all encode the same dependencies?

2. Show the split-head representation (constituency tree) of the dependency tree in Ex. 1

3. (*optional*) Consider the sentence *What did economic news have little effect on?* and the corresponding UD-compliant dependency tree. Is a bilexical CFG sufficient to handle this structure? What about the split-head representation? Explain.