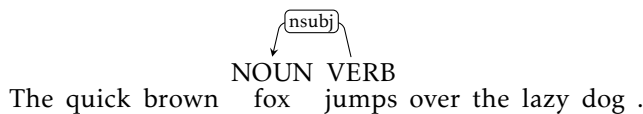# Dependency Parsing exercises: Dependency Structures
Part 1

Deadline: 19.04.2021

Please send completed solutions to waszczuk@hhu.de and evang@hhu.de with subject "dependency home-work" and attachment "ex1_lastname(s).pdf".

1. Complete the dependency analysis of the sentence:

   The quick brown fox jumps over the lazy dog .

   Use the Universal Dependency (UD) annotation scheme. Each word should have a part-of-speech tag and an incoming edge from its head, labeled with a basic dependency relation (e.g., nsubj, obj, . . .).

   Useful links:

   - UD annotation guidelines: http://universaldependencies.org/guidelines.html
   - UD POS tags: http://universaldependencies.org/u/pos/index.html
   - UD relations: http://universaldependencies.org/u/dep/index.html

   Draw the diagram by hand or use your favorite drawing software. If you use LaTeX, tikz-dependency is recommended.

   (You could 'cheat' by letting the computer parse the sentence for you using one of the available online parsers, but it's useful to practice working with dependency structures for the rest of the course.)

2. Give an example of an ambiguous sentence and explain the ambiguity in terms of dependency relations.

   For example: "John sees Mary with a telescope." Ambiguity: the prepositional phrase 'with a telescope' is a dependent of either 'sees' or 'Mary'.

   Other ideas for difficult sentences: headlines, informal language, questions, etc.

   Try giving the sentence to an online parser. For example:

   - https://demos.explosion.ai/displacy/
   - https://lindat.mff.cuni.cz/services/udpipe/run.php
   - http://corenlp.run/

   Show the analysis given by the parser. Is it the correct analysis? If not, show the expected analysis. If it is, repeat with a more difficult sentence.

3. Additional exercises (facultative) – propose dependency structures for the following sentences, using the UD annotation scheme:

(a) The rabbit ran quickly out of the burrow

(b) All the kids have left with their mother

(c) Jack spoke about his problems with the judge

(d) The gardener and the director confirm that the door was closed

(e) He is the man I met the other day

(f) The robber refused to say where the money is hidden