

# Dependency Grammar - Exercises (13.11.2008)

November 13, 2008

1. (10 points). Using Hudson's definition of adjacency principle, provide dependency trees for each of the following sentences:

- (1) What does Mary think Peter said?

Label each relation.

2. (16 points). For the following sentences:

- (2) He kept talking.

- (3) Peter and Mary bought a car.

- (a) Provide the DG analyses.

- (b) Provide an algorithm to convert the DG tree relations to phrase structure rules.

- (c) Draw the phrase structure trees.

3. (34 points) Read the following paper: Michael Collins *A New Statistical Parser Based on Bigram Lexical Dependencies* (<http://acl.ldc.upenn.edu/P/P96/P96-1025.pdf>).

- (a) Describe the dependency model presented in the paper and compare it to the models we have seen so far. Elaborate on your views.

- (b) Is the mapping from PS trees to dependencies problematic or not? Explain your answer.

Total points: 60. Pass: 30 points.