

Natural Language Processing: Part II

Overview of Natural Language Processing (L90): Part III/ACS

Exercises for lecture 5

1 Lecture 5

1. Assuming an appropriate oracle, could all the word orders in the Russian example be assigned a dependency structure using the algorithm described in the lecture notes?
2. Suppose that the CFG given in section 4.3 was extended by addition of the following rules:

```
NP -> Det Nbar
NBar -> N
Nbar -> Adj NBar
N -> dog
N -> carrot
V -> wants
Adj -> small
Det -> the
Det -> a
```

Give a parse tree (or a bracketed structure) for the following sentences, and show how comparable dependency structures could be constructed using the algorithm described in the lecture notes (assuming a suitable oracle).

- the dog wants fish
- a small dog wants a small carrot
- they fish in rivers in December