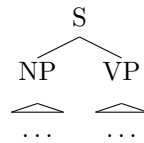


## Handout 14: Syntax

1. Draw parse trees for the following sentences.
  - a. Fido barked
  - b. Fido chased the cat
  - c. the cat on the mat sleeps
2. Implicit in each parse tree is a set of **rewrite rules**.
  - a. Tree:



- b.  $S \rightarrow NP VP$
- c. What rules are implicit in the trees of (1)?
- d. Include lexical rules:  $pos \rightarrow word$

Compose a grammar that covers the following phrases and sentences as well. Avoid generating the starred examples.

3. Noun phrases (and PPs)
  - a. the fat orange cat
  - b. six fat cats
  - c. \*fat six cats
  - d. the last six face cards
  - e. the six last face cards
  - f. several bright twinkling stars
  - g. her new guitar strap
  - h. to her
  - i. on top of the cabinet
  - j. the big mangy red and white dog behind the garage
4. Verbs and their complements
  - a. Fido barks
  - b. Fido chases Max
  - c. Max is a cat
  - d. Max gave Fido some exercise
  - e. Max thinks that Fido is a bit slow

- f. Max wants to stretch
  - g. I put Fido on a leash
5. Other sentence types
- a. give me that
  - b. did you see Max
  - c. who did you see
  - d. in which room did you see Max last
  - e. there is a cat in my chair
6. Verb clusters
- a. can tell
  - b. has taken
  - c. was taken
  - d. will be breaking
  - e. won't soon have finished
  - f. will have been finished
  - g. surely will have been unfairly accused
  - h. might need some help
  - i. must have come to a conclusion
7. Some (nonsense) sentences
- a. Mary will hold the dog incredibly
  - b. her sentimental cat guitar is counting on the one old sofa
  - c. have you taken several mangy movies to put in the money
  - d. the twinkling and red garage in which they caught chickens is uneasy
  - e. the few long chickens in dark days will take a cow bone that we finished
  - f. tell Mary whether the cabinet eats that rawhide that a friendly book caught
  - g. you know that that dog is the dog that we saw earlier
8. Sentences from the Penn Treebank
- a. Pierre Vinken , 61 years old , will join the board as a nonexecutive director Nov. 29 . Mr. Vinken is chairman of Elsevier N.V. , the Dutch publishing group .
  - b. Rudolph Agnew , 55 years old and former chairman of Consolidated Gold Fields PLC , was named a nonexecutive director of this British industrial conglomerate .