

## 2.2 Slides

- (1) a. That Sandy left bothered me.  
b. That that Sandy left bothered me bothered Kim  
c. That that that Sandy left bothered me bothered  
Kim bothered Bo
- (2) The horse raced past the barn fell.

(3) a. the noisy dogs left

(D) A N V

b. the noisy dogs chased the innocent cats

(D) A N V D A N

(4)  $a^* = \{\phi, a, aa, aaa, aaaa, \dots\}$

(5)  $a^+ = \{a, aa, aaa, aaaa, \dots\}$

(6) (D)  $A^* N V ((D) A^* N)$



(8) a. Rules:

$S \rightarrow NP VP$

$NP \rightarrow (D) A^* N PP^*$

$VP \rightarrow V (NP) (PP)$

$PP \rightarrow P NP$

b. Lexicon:

D: the, some

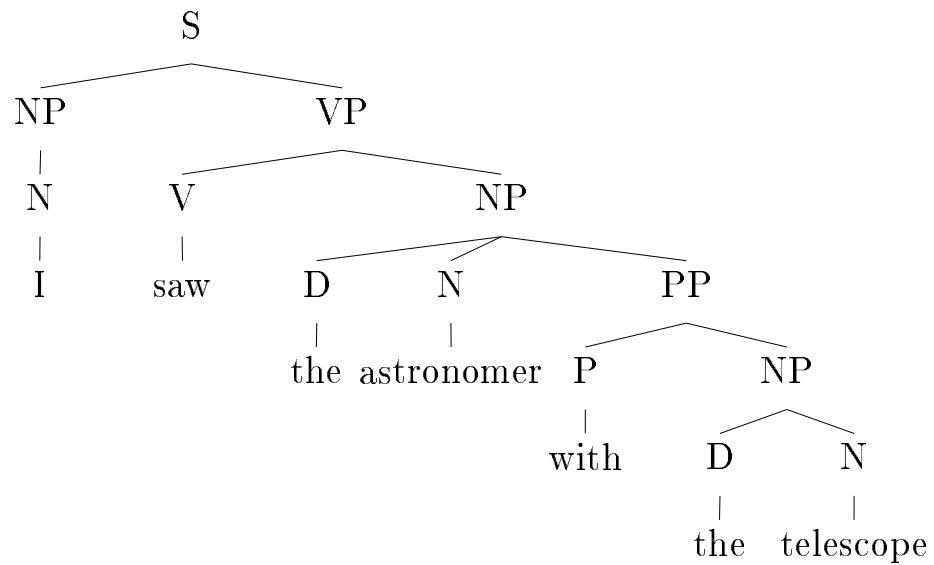
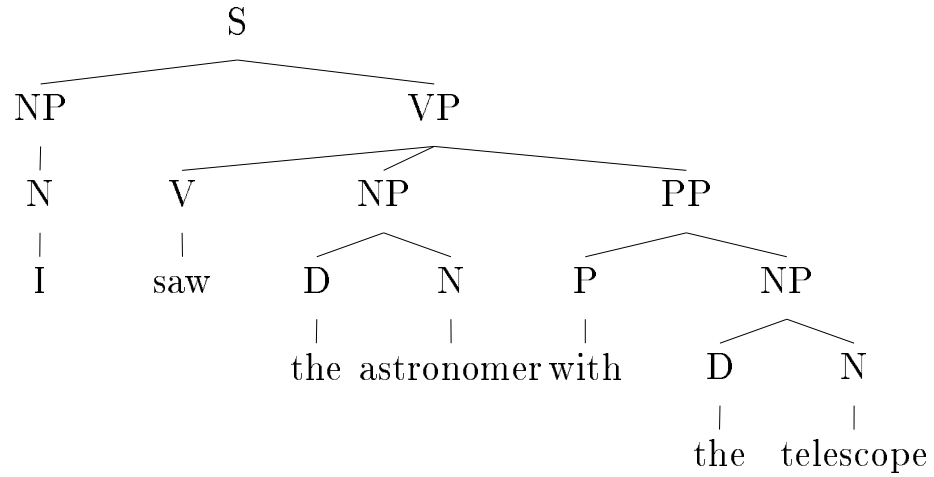
A: big, brown, old

N: birds, fleas, dog, hunter, I

V: attack, ate, watched

P: for, beside, with

(9) I saw the astronomer with the telescope.



(10) A man walked in who was wearing pink earmuffs.

(11) a. I read what you wrote.

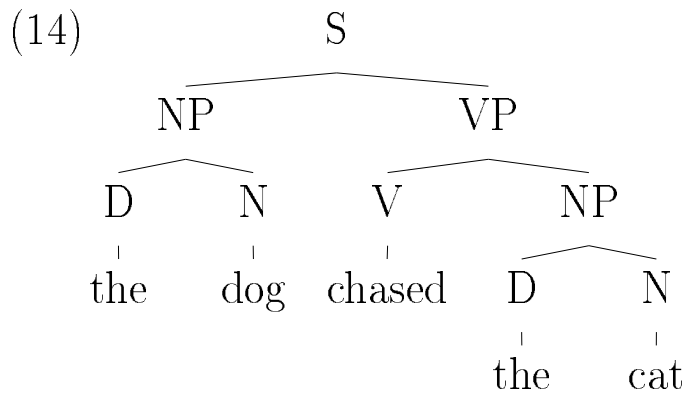
b. He arrives/\*arrive this morning.

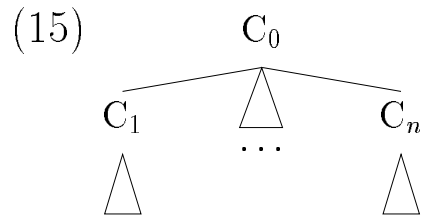
|      |    |         |             |
|------|----|---------|-------------|
| (12) | S  | → NP VP | D: the      |
|      | NP | → D N   | V: chased   |
|      | VP | → V NP  | N: dog, cat |

(13) a.            D            V            N            N  
                  |            |            |            |  
                  the        chased    dog        cat

b.                            NP                            NP  
                              /    \                        /    \  
                              D    N                        D    N  
                              |    |                        |    |  
                              the dog                     the cat

c.                                            VP  
                                              /    \  
                                              V    NP  
                                              |    /    \  
                                              chased    D    N  
                                                          |    |  
                                                          the cat





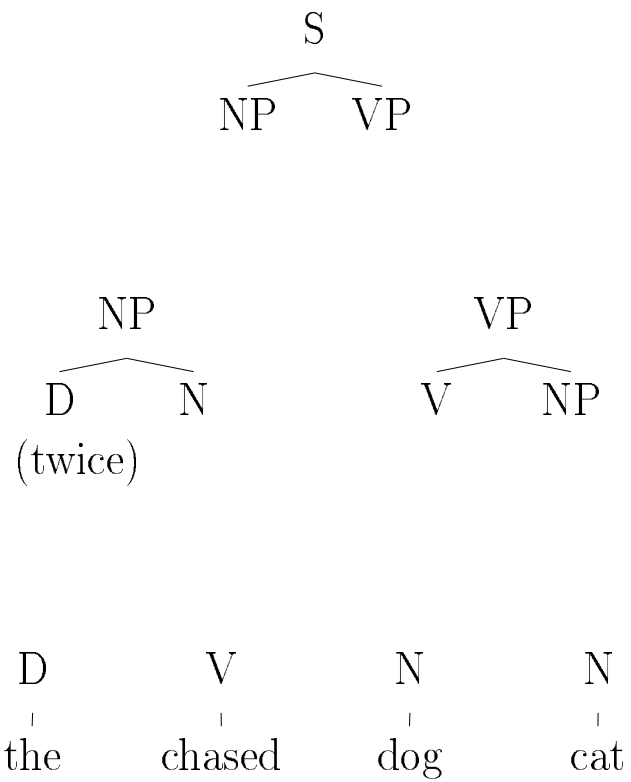
is a well-formed nonlexical tree just in case

$C_1 \dots C_n$  are well-formed trees, and



$C_0 \rightarrow C_1 \dots C_n$  is a grammar rule.

(16)



(17) Rules:

$S \rightarrow A B$

$A \rightarrow C D$ , in the environment  $\_ B$

$B \rightarrow E F$ , in the environment  $A \_$

Lexicon:

C: c

D: d

E: e

F: f

(18)

