

Exercise 1

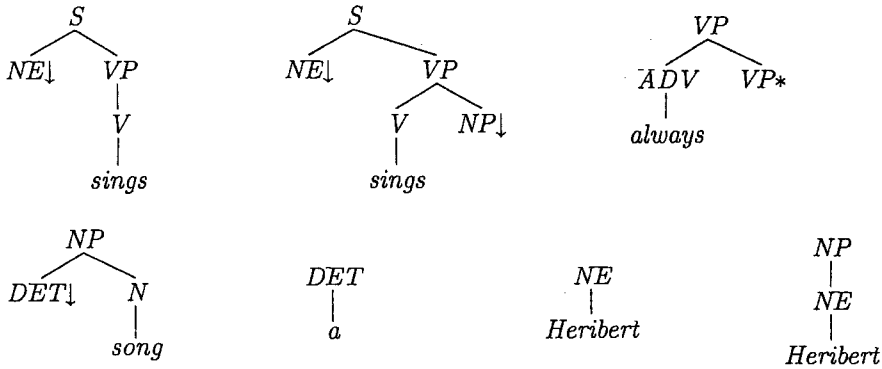
1. Let G be a context-free grammar with the following rewriting rules:

- $S \rightarrow NE VP$ $NP \rightarrow DET N$
 $VP \rightarrow V$ $NP \rightarrow NE$
 $VP \rightarrow V NP$ $VP \rightarrow ADV VP$
 $V \rightarrow sings$
 $ADV \rightarrow always$
 $NE \rightarrow Heribert$
 $DET \rightarrow a$
 $N \rightarrow song$

(a) Give a LTAG that lexicalizes G while localizing subcategorization frames. Recall that a LTAG consists of a finite set of elementary trees (initial trees and auxiliary trees) and that every elementary tree is lexicalized by one lexical item.

Solution:

Let G_{TAG} be a lexicalized tree-adjoining grammar that lexicalizes G . Then G_{TAG} contains the following elementary trees:



(b) Is it possible to lexicalize this CFG even with a TSG? If so, give such a TSG. Comment on the difference between this TSG and the LTAG for G .

Solution:

It is possible to find a TSG which lexicalizes G . Note that in contrast to the TAG for G , the subcategorization frames are no longer localized:

