

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

DUE: DECEMBER 2, 2010 - 2pm