Grammatikformalismen für die Computerlinguistik
Exercises

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Exercise 8 (Due by July 11)

1. *Consider the following sentence involving object control:*

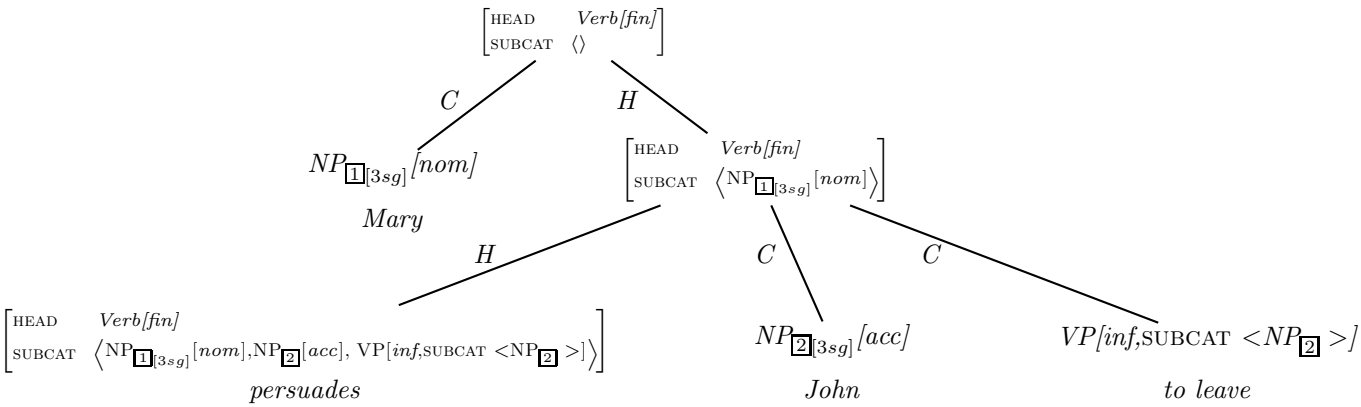
   (1) Mary persuades John to leave.

   (a) Provide the lexical entries (of type word) of "Mary", "John", "persuades", and "to leave".

   (b) Give the derivation of (1) in tree notation. Focus on CATEGORY*, as on the slides. You may use abbreviations here!*

   Solution:

"persuades": $\begin{bmatrix} word & \\ cat & \begin{bmatrix} head & Verb[fin] \\ subcat & \left\langle NP_{\boxed{1}[3sg]}[nom], NP_{\boxed{2}}[acc],\ VP[inf, \text{SUBCAT}\left\langle NP_{\boxed{2}}\right\rangle]; \boxed{3} \right\rangle \end{bmatrix} \\ cont & persuade(\boxed{1}[ref], \boxed{2}[ref], \boxed{3}) \end{bmatrix}$



2. *Consider the following sentence involving long-distance dependency:*

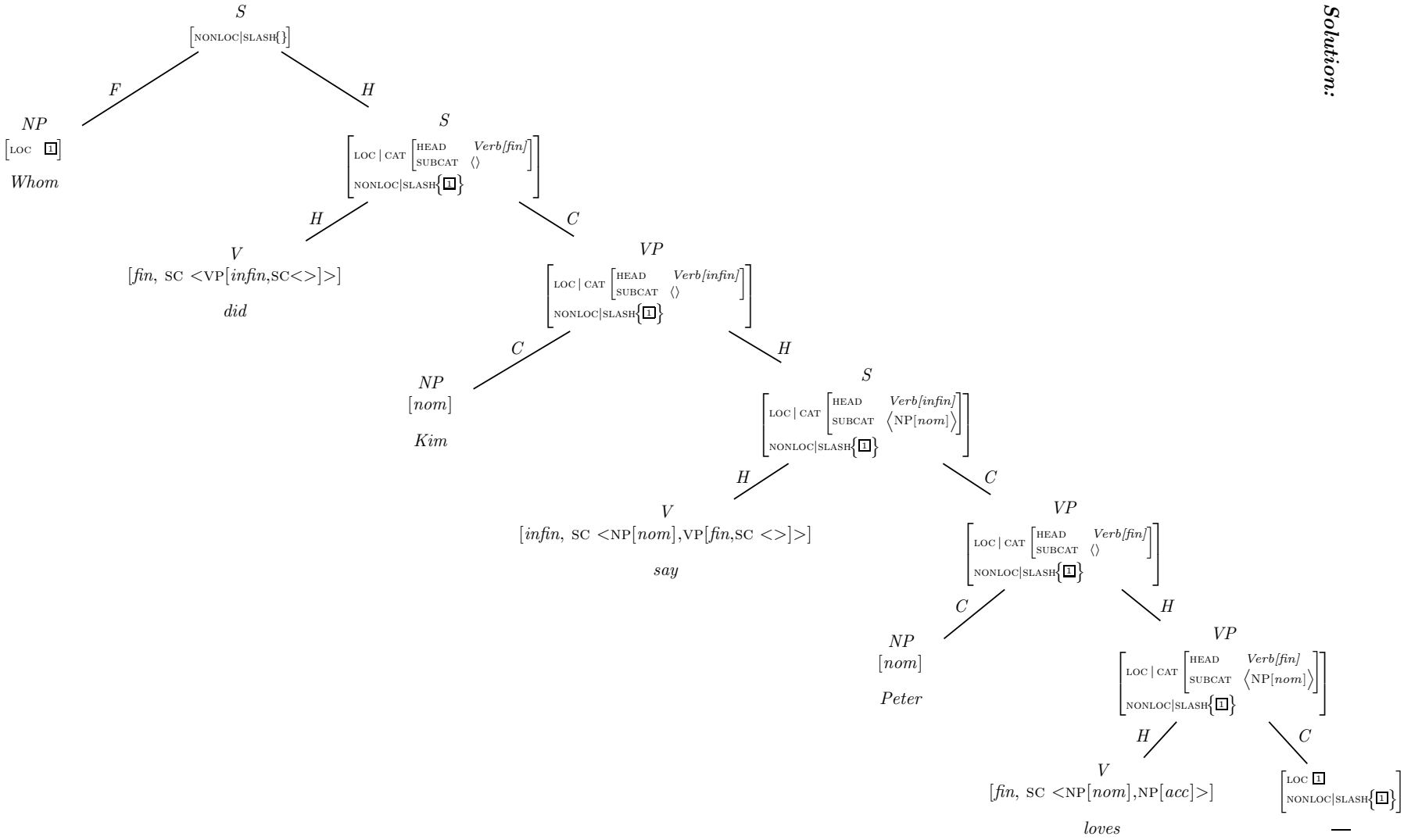
   (2) Whom$_i$ did Kim say Peter loves __$_i$.

   Give the derivation of (2) in tree notation. Assume that "did" and "say" have the following lexical entries (only the relevant part):

"did": $\begin{bmatrix} word & \\ \text{SYNSEM} \mid \text{LOC} \mid \text{CAT} & \begin{bmatrix} \text{HEAD} & \begin{bmatrix} verb & \\ \text{VFORM} & fin \end{bmatrix} \\ \text{SUBCAT} & \left\langle \text{VP}[infin] \right\rangle \end{bmatrix} \end{bmatrix}$

"say": $\begin{bmatrix} word & \\ \text{SYNSEM} \mid \text{LOC} \mid \text{CAT} & \begin{bmatrix} \text{HEAD} & \begin{bmatrix} verb & \\ \text{VFORM} & infin \end{bmatrix} \\ \text{SUBCAT} & \left\langle \text{NP}[nom], \text{VP}[fin] \right\rangle \end{bmatrix} \end{bmatrix}$

Solution:


S
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F
H
NP
[LOC 1]
Whom
S
[LOC | CAT [HEAD Verb[fin] SUBCAT ⟨⟩] NONLOC|SLASH{1}]
H
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V
[fin, SC <VP[infin,SC<>]>]
did
VP
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