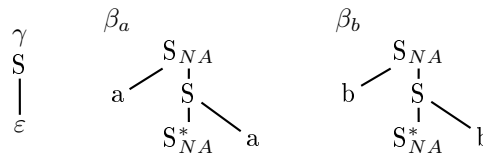


DGfS-CL Fall School 2011: Introduction to Tree Adjoining Grammar

Example for the TAG CYK Algorithm

TAG for the copy language:



Parsing trace for input *abab*, using the CYK algorithm from the slides (only successful items):

Item	Rule
1. $[\beta_b, 1_{\top}, 1, -, -, 2]$	Lex-scan
2. $[\beta_b, 22_{\top}, 3, -, -, 4]$	Lex-scan
3. $[\beta_b, 21_{\top}, 2, 2, 3, 3]$	foot-predict
4. $[\beta_b, 2_{\perp}, 2, 2, 3, 4]$	move-binary from 2. and 3.
5. $[\beta_b, 2_{\top}, 2, 2, 3, 4]$	null-adjoin from 4.
6. $[\beta_b, \varepsilon_{\perp}, 1, 2, 3, 4]$	move-binary from 1. and 5.
7. $[\beta_b, \varepsilon_{\top}, 1, 2, 3, 4]$	null-adjoin from 6.
8. $[\beta_a, 1_{\top}, 0, -, -, 1]$	Lex-scan
9. $[\beta_a, 22_{\top}, 2, -, -, 3]$	Lex-scan
10. $[\beta_a, 21_{\top}, 2, 2, 2, 2]$	foot-predict
11. $[\beta_a, 2_{\perp}, 2, 2, 2, 3]$	move-binary from 9. and 10.
12. $[\beta_a, 2_{\top}, 1, 2, 2, 4]$	adjoin from 7. and 11.
13. $[\beta_a, \varepsilon_{\perp}, 0, 2, 2, 4]$	move-binary from 8. and 12.
14. $[\beta_a, \varepsilon_{\top}, 0, 2, 2, 4]$	null-adjoin from 13.
15. $[\gamma, 1_{\top}, 2, -, -, 2]$	Eps-scan
16. $[\gamma, \varepsilon_{\perp}, 2, -, -, 2]$	move-unary from 15.
17. $[\gamma, \varepsilon_{\top}, 0, -, -, 4]$	adjoin from 14. and 16.