Elizabeth Coppock
coppock@phil.hhu.de
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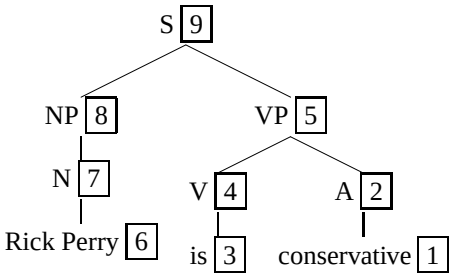
Compositional Semantics
Heinrich Heine University
Winter Semester 2011/12

Problem Set 7: Tree decoration!

Question 1. For each of the nodes in the following tree, say (a) what string of words it dominates, (b) a semantic composition rule that could be used to calculate the denotation at that node, choosing from TN, NN, FA, and PM, and (c) the semantic type of the denotation at the node, when the denotation is computed from the value(s) of its daughter(s) using the rule that you specified. (Technically, by "denotation at a node" we mean "denotation of the subtree rooted at that node".)

(1)



You can assume the following lexical entries.

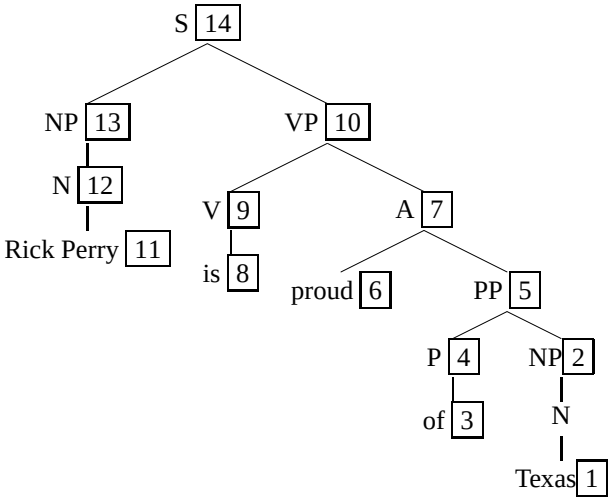
- ⟦Rick Perry⟧ = Rick Perry
- ⟦is⟧ = λf $\in D_{\langle e,t\rangle}$. f
- ⟦a⟧ = λf $\in D_{\langle e,t\rangle}$. f
- ⟦conservative⟧ = λx $\in D_e$. x is conservative
- ⟦Republican⟧ = λx $\in D_e$. x is a Republican
- ⟦governor⟧ = λy . λx . x is the governor of y
- ⟦proud⟧ = λy . λx . x is proud of y
- ⟦of⟧ = λx $\in D_e$. x
- ⟦Texas⟧ = Texas

You can do this exercise by filling in the rest of this table:[1]

Node	String	Rule	Semantic Type of Denotation at Node
1	conservative	TN	$\langle e, t\rangle$
2	conservative	NN	$\langle e, t\rangle$
3	is	TN	$\langle\langle e, t\rangle, \langle e, t\rangle\rangle$
4	is		
5	is conservative		
6	Rick Perry		
7	Rick Perry		
8	Rick Perry		
9	Rick Perry is conservative		t

Question 2. Do the same for the following example.

(2)

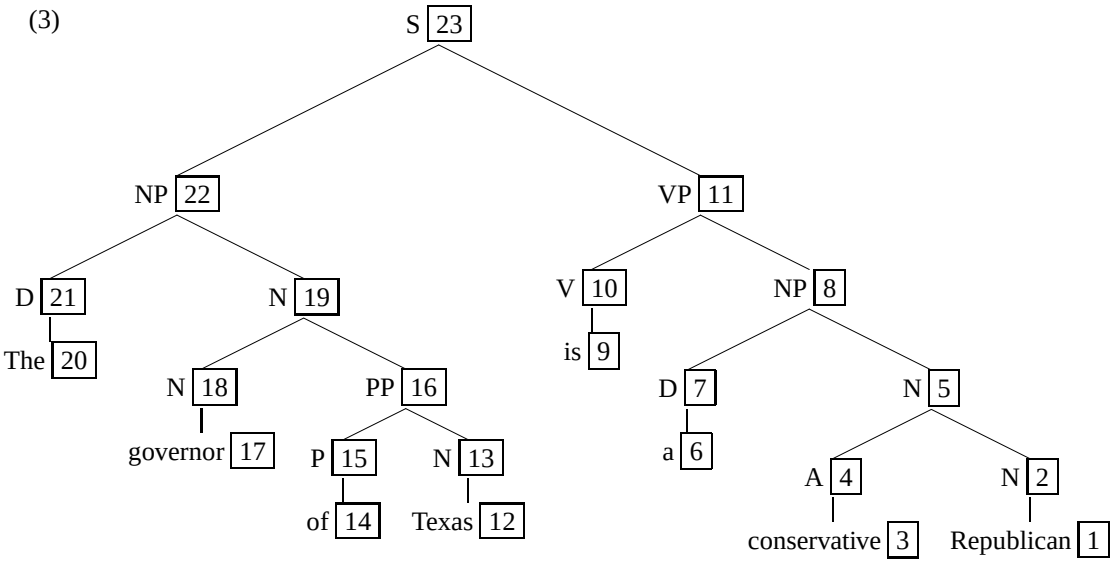


Node	String	Rule	Semantic Type of Denotation at Node
1	Texas		
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14	Rick Perry is proud of Texas		t

[1] You can do the first problem of the extra credit assignment by adding another column with the actual semantic value.

Question 3. And again.

(3)

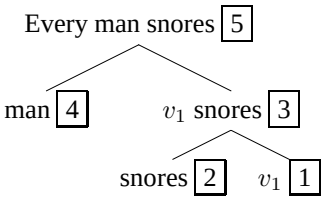


Question 4. First, read:

- Dowty Wall and Peters (1981), chapter 2, pp. 66–81

On page 71, they give an extremely peculiar syntax tree:

(4)



For each node in the tree in (4), give

- the syntax rule that is used at the node, using the syntax rules for L_{1E} given in 1A and 1B on pp. 69-70
- the syntactic category of the phrase
- the semantic rule that should be used to compute the value at the node, using the semantic rules for L_{1E} given on pp. 73-74
- the semantic type of the denotation at the node
- the string of terminals dominated by the node

Node	Syn. Rule	Syn. Cat.	Sem. Rule	Sem. Type	String
1	A2	N	A1	e	v_1
2	A3	V_i	A2	$\langle e, t \rangle$	snores
3					
4					
5					