

Homework 2
11-721: Grammars and Lexicons, Fall 2008
Due Monday, October 6, 2008

1 Based on Radford, Exercise XVI, page 225

Assume the following phrase structure rules:

S --> N' ' VP

VP --> V'

VP --> V' PP

V' --> V

V' --> V N' '

PP --> P N' '

N' ' --> (Det) N'

N' --> N' PP

N' --> N (PP)

N --> N CONJ N

N' --> N' CONJ N'

N' ' --> N' ' CONJ N' '

Det --> that

Det --> his

Det --> the

CONJ --> and

V --> like

VP --> just don't get on

N --> picture

N --> pushchair

N --> workers

N --> managers

N --> factory

N' ' --> I

N' ' --> him

P --> of

P --> in

Question 1: Note that *I* and *him* are N' and not N. Write an ungrammatical sentence that would be generated if “I” and “him” were N and not NP. This grammar generates a lot of ungrammatical sentences, so be sure to write one that is ungrammatical for the right reason.

Question 2: Note that *his* is a determiner. Write an ungrammatical sentence that would be generated if *his* were an N. Write a sentence that could not be generated if *his* were an NP.

Question 3: Assuming that there is an attachment ambiguity in *that picture of him in his pushchair*, what are the two meanings?

Question 4: The phrase structure rules don't generate a tree that corresponds to one of the meanings. Which one is it?

Question 5: Draw a phrase structure tree for the meaning that is generated.

Question 6: There is also an attachment ambiguity in *The workers and the managers in the factory just don't get on*. What are the two meanings?

Question 7: The phrase structure rules don't generate a tree that corresponds to one of the meanings. Which one is it?

Question 8: Draw a phrase structure tree for the meaning that is generated.

Question 9: Radford suggests to reformulate the rule that introduces PP adjuncts into three rules, one for adjuncts to X, one for adjuncts to X', and one for adjuncts to X". Write the new phrase structure rules.

Question 10: Using the new rules, draw a tree for the meaning of *that picture of him in his pushchair* that wasn't previously generated.

Question 11: Using the new rules, draw a tree for the meaning of *The workers and the managers in the factory just don't get on* that wasn't previously generated.

2 Possessive Noun Phrases

In the last problem, possessive pronouns like *his* were treated as determiners. However, possessors can be full noun phrases as in *the boy across the street's toy* where the possessor is *the boy across the street*.

The *'s* is a *clitic*, not a full word, but not a prefix or suffix. One of the things that makes it different from prefixes or suffixes is that it attaches to words that aren't related to it. In *the boy across the street's toy* the *'s* indicates that the boy is a possessor, but it attaches to *street*. In the phrase structure rules below, the *'s* is treated as a terminal symbol that is a daughter of NP.

Task 1: Using the phrase structure rules below, draw two trees for *the wife of your friend's brother*, which has two different meanings. Assume that *of your friend* is an argument, not an adjunct. For the sake of simplicity, *your* is still treated as a determiner because it does not occur with *'s*.

Task 2: Using the phrase structure rules below, draw two trees for *We gave her dog biscuits*. The verb *give* should have three arguments: agent, theme, and recipient.

S --> N' ' VP

VP --> V N' ' N' '

PP --> P N' '

N' ' --> (Det) N'

N' --> N (PP)

N' ' --> NP 's N'

In the previous rule, the N' ' has three daughters, NP, 's, and N'.

Det --> the

Det --> your

Det --> her

N' ' --> her

N' ' --> we

N --> N N

Task 3 (Extra Credit, five percent): When there is an NP consisting of NP 's N', what principle determines that the N-bar and not the possessor NP is the head of the whole NP? I'm looking for a syntactic principle, which might be found somewhere in Radford's book. A semantic principle is reasonable — *the boy's book* is a book, not a boy — but that is not the answer I'm looking for. The answer is very specific and pretty short.

3 Drawing F-structures

On the next page there is a lexicon and a reduced set of rules in LFG notation. Draw the f-structures for the two readings of *the friend of your wife's brother*.

PP	→	P	N''
		↑=↓	↑=↓
N''	→	(Det)	N'
		↑=↓	↑=↓
N''	→	(Det)	N'
		(↑ POSS)= ↓	↑=↓
		(↓ PRON)=c +	
N'	→	N	(PP)
		↑=↓	(↑ OBL-poss) = ↓
N''	→	N''	's
		(↑ POSS) = ↓	N'
			↑=↓
<i>the</i>	DET	(↑ DEF) = +	
<i>wife</i>	N	(↑ PRED) = 'wife'	
<i>of</i>	P		
<i>your</i>	det	(↑ PRED) = 'pro'	
		(↑ NUM) = sg	
		(↑ PERS) = 3	
		(↑ PRON) = +	
<i>friend</i>	N	(↑ PRED) = 'friend'	
<i>brother</i>	N	(↑ PRED) = 'brother'	