

1 Generalization

Bart chased Lisa is a sentence (S) with the pattern N V N. So presume we have this rule: $S \rightarrow N V N$. Now consider the sentence *Marge thinks Bart chased Lisa*. One way to state the pattern of this sentence is adding a new rule: $S \rightarrow N V N V N$. But there is a better way. **What is a better rule? What makes it better?**

2 PSRs and Trees IV

$S \rightarrow NP V NP$	$Det \rightarrow a$	$N \rightarrow Homer$
$S \rightarrow NP V NP NP$	$N \rightarrow beer$	$N \rightarrow Lisa$
$NP \rightarrow Det N$	$N \rightarrow gift$	$V \rightarrow bought$
$NP \rightarrow NP \textit{ and } NP$	$N \rightarrow Bart$	$V \rightarrow saw$
$NP \rightarrow N$	$N \rightarrow Marge$	$V \rightarrow sent$

A. Give the tree that these rules generate for the sentence *Homer bought Marge a gift*.

B. Give the tree that these rules generate for the sentence *Homer sent Marge Bart and Lisa*.

C. Give three additional English sentences that this grammar generates.

D. Give three additional non-English sentences that this grammar (erroneously) generates. To help ensure you're on the right track, let me note/suppose that (even though you can kind of make sense of it by forcing an interpretation where there is a class organized by name) *a Lisa* is not well-formed in English.

E. Revise the grammar so that it still produces sentences like those you gave in (C) above, but no longer produces sentences like those you gave in (D).

3 Funny

The sentences below are not handled by either grammar above.

- (1) a. A fancy comedian sent Homer a beer.
- b. A cold comedian saw Lisa.

c. A funny comedian bought a gift.

A. What new rules (including four new lexical items) must be added to the rules in the previous problem in order to produce these? [Note: you can do it in five (4 lexical, 1 more abstract). Do that, it makes Part B make sense.]

B. Does the grammar predict *Homer sent a funny comedian a cold beer*? Answer that and give a sentence about what is interesting about that fact. [Note: the answer should be “yes” if there is to be something interesting to say here.]

C. Draw a tree for *Homer sent a cold funny comedian a fancy beer*.

4 PSRs and Trees V

S → NP VP	Conj → <i>and</i>
VP → Vi	Conj → <i>or</i>
VP → Vt NP	Det → <i>a</i>
VP → Vd NP NP	Adj → <i>big</i>
NP → Det N	Adj → <i>fancy</i>
N → Adj N	Adj → <i>expensive</i>
NP → Nn	N → <i>beer</i>
NP → N	N → <i>gift</i>
NP → NP Conj NP	Nn → <i>Bart</i>
VP → VP Conj VP	Nn → <i>Marge</i>
S → S Conj S	Nn → <i>Homer</i>
	Nn → <i>Lisa</i>
	Vt → <i>drank</i>
	Vi → <i>slept</i>
	Vd → <i>gave</i>

A. Give the tree that these rules generate for the sentence *Marge and Homer gave Bart and Lisa a big expensive gift*. This tree is relevant for B–F below.

B. Write “B” by the nodes that the Adj node over *big* c-commands.

C. Write “C” by the nodes that the Vd node over *gave* c-commands.

D. Write “D” by the nodes that the NP-daughter-of-S dominates.

E. Write “E” by the nodes that dominate *Bart*.

F. Write “F” by the nodes that precede *Bart*.

G. Give the tree that the rules generate for *Homer drank a beer and slept*.

5 Korean

So far we have been concerned strictly with grammars for English. In this exercise, we will construct a grammar for a small fragment of Korean.

5.1 Basic Korean sentences

Observe the following data. Note: In all examples *SUB* stands for *subject marker* and *OBJ* stands for *object marker*. Depending on whether the object ends in a consonant, it might be either *lul* or *ul*, but the difference is like English *a* vs. *an*. In your grammar, treat it as *lul* everywhere (don't have two different subject markers).

- (2) Chelswu ka ulessta.
Chelswu SUB cried
'Chelswu cried.'
- (3) Chelswu ka ku sakwa lul poassta.
Chelswu SUB that apple OBJ saw
'Chelswu saw that apple.'
- (4) Chelswu ka Sunhi lul conkyenghanta.
Chelswu SUB Sunhi OBJ respect
'Chelswu respects Sunhi.'
- (5) Chelswu ka ku kemun kae lul cohanta.
Chelswu SUB that black dog OBJ like
'Chelswu likes that black dog.'
- (6) Chelswu ka hakkyo e kassta.
Chelswu SUB school to went
'Chelswu went to school.'
- (7) Chelswu ka Sunhi eykey chayk ul cwuessta.
Chelswu SUB Sunhee to book OBJ gave
'Chelswu gave a book to Sunhi.'

Part 1. Give a grammar that generates these Korean data.

Part 2. Check to see whether your grammar generates any of the ungrammatical examples below. It probably does. If your grammar does generate any of these, revise it so that they will be correctly excluded. Give the new set of rules (assuming you changed them).

- (8) a. * Chelswu lul ulessta.
b. * Sunhi ka Chelswu lul ulessta.
c. * Chelswu ka poassta.
d. * Chelswu ka Sunhi lul chayk ul cwuessta.

Note: Any Korean speakers, consider (8c) to be ungrammatical. (It is grammatical, but for a reason we are not ready for yet.)

Part 3. Give the phrase markers (tree diagrams) that your grammar above assigns to sentence (2) through (7).