

[Exercises adapted from Larson (2010)]

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

Here is a set of phrase structure rules for English.

$S \rightarrow$	NP V NP
$S \rightarrow$	NP V NP NP
$NP \rightarrow$	Det N
$NP \rightarrow$	NP <i>and</i> NP
$NP \rightarrow$	N

Det \rightarrow	<i>a</i>
N \rightarrow	<i>beer</i>
N \rightarrow	<i>gift</i>
N \rightarrow	<i>Bart</i>
N \rightarrow	<i>Marge</i>
N \rightarrow	<i>Homer</i>
N \rightarrow	<i>Lisa</i>
V \rightarrow	<i>bought</i>
V \rightarrow	<i>saw</i>
V \rightarrow	<i>sent</i>

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 the grammar above (either the original or with your modifications).

- (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 sentences?

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.

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