Homework 2
LIN 311: Syntax, Fall 2018

Problem 0

Consider the following set of Phrase Structure Rules for Language L.

$$S \rightarrow A \ (S) \ B \ (C)$$
$$A \rightarrow x$$
$$B \rightarrow y$$
$$C \rightarrow (A) \ z$$

Assume that all "sentences" in this "Language" start with the root node S. Assume that the "words" of this language (what can be the output of a tree structure) consist of x, y, z only (all lower case). All UPPER CASE elements are "constituents." Assume that parentheses in a Phrase Structure Rule means that the element is *optional*.

1. What is the shortest sentence that can be derived by this grammar? Can you draw a tree of it?

2. What is the longest sentence that can be derived by this grammar? Can you draw a tree of it?

3. Which of the following "sentences" can be generated by this grammar? For the "sentences" that are "grammatical", draw the trees.

   (a) *xxyy*
   (b) *xxxyy*
   (c) *xxyyzz*

   (d) *xyxz*
   (e) *xxxxyyyyxz*
   (f) *xxyzy*

   (g) *zxy*
   (h) *xxxyyyx*

Problem 1
(Carnie, Chapter 3, GPS 8)

The following English sentences are all ambiguous. Provide a paraphrase (a sentence with roughly the same meaning) for each of the possible meanings, and then draw (two) trees of the **original** sentence that distinguish the two meanings. Be careful not to draw the tree of the paraphrase. Your two trees should be different from one another, where the difference reflects which elements modify what. You may need to assume that *old* can function as an adverb.

a) I discovered an old English poem.
b) Two sisters reunited after 18 years in checkout counter.
c) Enraged cow injures farmer with axe.

Problem 2
(Carnie, Chapter 3, GPS 10)

In the text, we claimed that perhaps the NP in PPs was optional, explaining why we can say *He passed out*, where the preposition out has no object. Consider an alternative: the expression *[passed out]* is really a "complex" verb. Using constituency tests, provide arguments that the structure of expressions like (a–d) is really [[V P] NP] rather than: [V [P NP]].

a) He blew out the candle.

b) He turned off the light.

c) He blew up the building.

d) He rode out the storm.

Problem 3
(Carnie, Chapter 3, GPS 13)

Look carefully at the following data from Hixkaryana, a Carib language from Brazil (the glosses have been slightly simplified from the original). In your analysis do not break apart words. (Data from Derbyshire 1985.)

(1)   a.   Kuraha yonyhoryeno biyekomo.
               bow   made   boy
               "The boy made a bow."
      b.   Newehyatxhe woriskomo komo.
               take–bath   women   all
               "All the women take a bath."
      c.   Toto   heno komo yonoye kamara.
               person dead all   ate   jaguar
               "The jaguar ate all the dead people."

Now answer the following questions about Hixkaryana:

1. Is there any evidence for a determiner category in Hixkaryana? Be sure to consider quantifier words (like *some* and *all*) as possible determiners.

2. Posit an NP rule to account for Hixkaryana. (Be careful to do it for the second line in these examples, the word–by–word gloss, not the third line.) Assume there is an AdjP rule: AdjP → Adj.

3. Posit a VP rule for Hixkaryana.

4. Posit an S rule for Hixkaryana.

5. What is the part of speech of *newehyatxhe*? How do you know?

6. Draw the trees for (a) and (c) using the rules you posited above. (Hint: if your trees don't work, then you have probably made a mistake in the rules.)

Problem 4*
(Carnie, Chapter 3, CPS 7)

Given the basic units of Subject NPs (S), Object NPs (O), and verbs (V), there are logically 6 possible word orders of the world's languages: SOV, SVO, VSO, VOS, OSV, and OVS. Of these possible orders, the first two are very common, the second two are found throughout the world but are much rarer, and the last two are almost unheard of. (The exceptions seem to be limited to a set of Carib languages spoken in South America.) Tomlin (1986) claims that 45% of the World's languages are SOV, 42% are SVO, 9% are VSO, 3% are VOS, and less than 1% of the world's languages exhibit OSV or OVS. Let's concentrate on the rare OVS order.

1. What would the TP and VP phrase structure rules for an OVS language look like?

2. Do phrase structure grammars make any predictions about the frequency of word orders? In other words, is there any reason that OVS languages should be rare if they are possible in a phrase structure notation? Does our grammatical system correctly predict that object–initial languages should be so very rare?

3. Are there any word orders that Phrase Structure grammars predict would not exist? (Assume that subjects are always the NP introduced by the S rule, and objects are always introduced by the VP rule)