

Homework Assignment #6
Due Tuesday November 27th, beginning of class

Name: _____

The current state of MiniEnglish

Currently we have the following rules in our little grammar:

- S → NP VP
NP → (Det) N' *Det is optional only if the head N is plural.*
NP → Name
NP → Pronoun
N' → AP N'
N' → N' PP
N' → N (PP) *PPs which are arguments of the N.*
PP → P NP *NPs which are arguments of the V.*
V' → V (NP) (NP)
V' → V' (PP)
VP → (Aux) V'
AP → (Deg) A *Deg only if the A is gradable.*

- N: dog, cat, elephant, bear, raccoon, house, tree, tail *and their plural forms*
A: small, fast, witty, scared, uncomfortable, old
V: run, sleep, chase, eat, live, sneeze, hug, scare *and their related forms (tense etc.)*

Aux: is, are, will, have *and their related forms*

Deg: very, quite, somewhat, slightly

Adv: quietly, quickly

Det: the, a, some, all, most, few

P: in, on, under, into, through, with

Pronoun: we, you, he, she, it *and their plural and accusative (object case) forms*

Name: any proper name

I. *Tree Structures*

Give the tree structure for the following three sentences, according to our MiniEnglish grammar.

A bear hugged an elephant.

Some old bear sleeps.

Raccoons with tails are running.

The very small cat scared him under a tree.

2. For the following sentences, figure out whether the grammar above can or cannot produce them. ('Yes' or 'No' will do as an answer, but if you're not sure, just start drawing the tree and see whether you can get all the way from the words to the 'S' root node with the rules of MiniEnglish.)

a. Dogs run.

b. The dogs run through the house.

c. Witty raccoons chase scared elephants.

d. Dogs with tails are fast.

e. Some cat sleeps.

f. Elephants think that dogs run.

g. Dogs run fast.

h. The cat sleeps in the house.

j. The house sleeps quietly.

3. Pick one of the examples from 2. above that the grammar of MiniEnglish cannot produce, and propose a rule that we could add so that the grammar of MiniEnglish can produce that sentence.

4. *Structural Ambiguities*

The following sentence can correspond to two trees according to our rules of MiniEnglish.

The dog scared the cat with the tail.

- a. Draw the two trees.
- b. The sentence actually also has two meanings. Paraphrase the meanings and say which one corresponds to which tree.

Extra credit:

Why is the last sentence in 1 (“The very small cat scared him under a tree.”) not structurally ambiguous like the sentence above (“The dog scared the cat with the tail.”)?