

Psych56L/ Ling51
Winter 2012

Homework 3: Syntactic & Morphological Development + Language & Cognition
Or “The Language Adventures of Sigmund von Hacklestein, part 3”

Remember to write your full name and University ID number on your assignment. If you collaborate with other students in the class (which you are strongly encouraged to do), please make sure to indicate who you worked with.

(70 points total)

(1) Sigmund has been studying the language of the Guins, and has discovered a few things about Guin morphology. For each of the affixes below, indicate whether the affix is (i) a bound or free morpheme and (ii) inflectional or derivational morphology, based on how Sigmund has observed the Guins using these affixes. Briefly explain why you think so for each distinction (bound vs. free, and inflectional vs. derivational). [4 pts each]

Sample format for answers to (a) and (b):

(i) *morpheme* is a *bound/free* morpheme, because [insert reason here: *probably something about whether it can appear on its own*]

(ii) *morpheme* is a(n) *inflectional/derivational* morpheme, because [insert reason here: *probably something about whether the grammatical category changes*].

(a) The syllable “pen” often follows verbs, and indicates that something is occurring in the present (as opposed to the past). It does not seem to ever appear on its own.

Ex: “merkol” = dance
“merkolpen” = dances

(b) The syllable “wut” seems to precede nouns, and indicates the property of being the opposite of the noun. It also appears on its own, where it means “opposite”.

Ex: “margon” = goblin
“wut margon” ≈ not at all goblin-like
“wut” = opposite

(2) Here are some rules Sigmund has discovered about the syntactic structure of Guin:

$S \rightarrow NP VP$	$NP \rightarrow Det N$	$NP \rightarrow N$
$VP \rightarrow V NP$	$VP \rightarrow V S$	$VP \rightarrow V$

Here are some words Sigmund has also discovered:

plong = “the”, Det(erminer)

nerket = “cat”, N(oun)

fleptur = “chased”, V(erb)

vind = “see”, V(erb)

ong = “a”, Det(erminer)

bant = “dog”, N(oun)

vinder = “saw”, V(erb)

flept = “chase”, V(erb)

margon = “goblin”, N(oun)

margoni = “goblins”, N(oun)

(a) Do these rules show recursion? (Yes or No) [1 pt]

(b) For each of the sentences below, decide if the sentence can be generated by these rules. If so, show the derivation (that is, show the sequence of rule expansions that leads to the sentence). You should feel free to draw the phrase structure tree, if you find that helpful. If the sentence cannot be derived from these rules, show where the derivation fails and explain what sequence has no rule to match it. [4 pts each]

Example 1: plong nerket vinder plong bant.

Yes.

plong nerket vinder plong bant \rightarrow Det N V Det N \rightarrow NP V NP \rightarrow NP VP \rightarrow S

Example 2: plong nerket

No.

plong nerket \rightarrow Det N \rightarrow NP \rightarrow ?

There is no rule $S \rightarrow NP$ which can account for *plong nerket* by itself.

- (i) ong margon vinder plong nerket.
- (ii) margoni vind.
- (iii) ong margon vinder fleptur plong nerket.
- (iv) margoni vind ong nerket flept ong margon.
- (v) bant ong vinder margoni fleptur ong nerket.

(3) Sigmund has heard that sometimes children may use different strategies to help them understand sentences even before they know many grammatical morphemes.

(a) One strategy is to use world knowledge to help interpret sentences. Would this strategy work for the sentence, “The penguin fell down after he slipped”? Why or why not?

[3 pts]

(b) Another strategy is to use the order of words they know to help interpret sentences. Would this strategy work for the sentence, “The penguin fell down after he slipped”?

Why or why not?

[3 pts]

(4) Sigmund was surprised to learn that some sentences may have silent subjects or silent objects that are understood, but *not* explicitly mentioned. He wanted to try his hand out at identifying some of these in actual sentences. Help Sigmund out by identifying whether each of the examples below has a silent subject, a silent object, both, or neither. Make sure to indicate what the silent subject and/or silent object is if the example has one. Note that there may be more than one instance of a silent subject or silent object in each utterance, and there may be more than one sub-sentence. (General hint: Sub-sentences should always begin with *to*.)

Example: “The king decided to ignore the goblins.”

Answer:

Silent subject = “the king” for the sub-sentence “to ignore the goblins”

Example: “The king is tough to convince.”

Answer:

Silent subject = *someone unspecified* for the sub-sentence “to convince”.

Silent object = “the king” for the sub-sentence “to convince”.

- (a) “Sarah asked Jareth to let her solve the labyrinth.” [2 pts]
- (b) “Hoggle promised that he would help.” [2 pts]
- (c) “Hoggle promised to help Sarah escape later.” [2 pts]
- (e) “The dwarf is tricky.” [2 pts]
- (f) “The dwarf is tricky to convince.” [3 pts]
- (g) “The dwarf is tricky to convince to help anyone but himself.” [5 pts]

(5) Sigmund was amazed to learn about how quantifiers can interact in utterances. In particular, he was surprised to realize that he can have an interpretation where the scope (which determines how he interprets the sentence) does not match the linear order of the quantifiers. Help him figure out the answers to the questions below, which involve quantifier interaction. [1 pt each]

Utterance: “*Someone* is helping *every* goblin out of the Bog of Eternal Stench.”

- (a) Which of the following interpretations (1 or 2) matches the scope *some* >> *every*?
(Interpretation 1) For some person *p*, *p* is helping every goblin out.
(Interpretation 2) For every goblin *g*, there is some person who is helping *g* out.
- (b) Which of the above interpretations (1 or 2) matches the scope *every* >> *some*?
- (c) Which scope (*some* >> *every* or *every* >> *some*) matches the linear order in the sentence?
- (d1) Is the following situation compatible with the interpretation matching the scope *some* >> *every*? (Yes or No)
Situation: A girl, Sarah, is helping three goblins, Stinkwort, Grappler, and Fungmunger, out of the Bog of Eternal Stench.
- (d2) Is the above situation compatible with the interpretation matching the scope *every* >> *some*? (Yes or No)
- (e1) Is the following situation compatible with the interpretation matching the scope *some* >> *every*? (Yes or No)

Situation: Three girls, Sarah, Attia, and Circe, are helping three goblins, Stinkwort, Grappler, and Fungmunger, out of the Bog of Eternal Stench, with each girl helping one goblin (Sarah helping Stinkwort, Attia helping Grappler, and Circe helping Fungmunger).

(e2) Is the above situation compatible with the interpretation matching the scope *every* >> *some*? (Yes or No)

(6) Sigmund has been exploring the words for number in the language of the Ervee, who live near the Guins. To his surprise, he has discovered that the Ervee have words only for “one”, “two”, and “a lot”.

(a) Do the Ervee have some words that represent numbers captured by the small, exact number system (that is, numbers that can be subitized)? (Yes or no) [1 pt]

(b) Do the Ervee have words that represent numbers larger than those captured by the small, exact number system? (Yes or no) [1 pt]

(c) If we believe the Neo-Whorfian hypothesis, should an adult Ervee speaker be able to tell the difference between a group of 20 objects and a group of 10 objects? Why or why not? (Hint: Think about Weber’s fraction.) [3 pts]

(d) If we believe the Neo-Whorfian hypothesis, should an adult Ervee speaker be able to tell the difference between a group of 7 objects and a group of 5 objects? Why or why not? (Hint: Think about Weber’s fraction.) [3 pts]

(7) Sigmund has heard that sentential complements are somehow related to acquisition of theory of mind.

(a) Remind Sigmund what a sentential complement is by giving him an example of a sentence that has one. Make sure to indicate where the sentential complement is. [1 pt]

(b) Sigmund has been observing his three-year-old brother Aethelric, who does not yet use sentences with sentential complements. Should Sigmund expect Aethelric to succeed at a standard false belief task that requires Aethelric to use language to answer? Why or why not? [Hint: Think about the false belief task studies in the lecture notes.] [3 pts]