Psych156A/ Ling150
Spring 2014
Review Questions: Introduction to Language Acquisition

(1) Terms/concepts to know: phonology, morphology, lexicon, syntax, pragmatics, grammar, phonemes, morphemes, free morpheme, bound morpheme, derivational morpheme, inflectional morpheme, compounding, prescriptive grammar, descriptive grammar, Zipfian distribution, Marr's hierarchy, computational level, algorithmic level, implementational level, CHILDES database, computational modeling, hypothesis space, data intake, update procedure

(2) What does it mean to say that children don't get explicit instruction in much of the knowledge they eventually come to have about language? What kind of input do they get? What evidence is there that children don't pay much attention to explicit corrections their parents make about the grammatical form of the utterances they produce?

(3) What is "noise" for language acquisition? Give an example of "noise" a child might encounter in language input.

(4) How can you demonstrate that we can create an infinite number of sentences? Why does this mean that we need rules for generating sentences?

(5) Why do prescriptive grammar rules have to be taught in school in order for speakers to use them? (That is, why aren't they learned just by listening to native speakers speak?) What's an example of a prescriptive rule of English grammar?

(6) Do descriptive grammar rules have to be taught in school in order for speakers to use them? Why or why not? What's an example of a descriptive rule of English grammar?

(7) Why does language data having a Zipfian distribution make it harder for children to learn all the rules of their language, based on their input?

(8) Is there any evidence that children generalize differently than adults, when given noisy data?

(9) In the cash register example in the lecture notes, the computation of addition was carried out by placing numbers in a column and following the rules of addition to add up the columns until a final answer was reached. Electronic and mechanical components implemented the rules of addition.

   (a) Suppose the process of addition is carried out by a very small man inside the cash register who placed numbers in a column on a very small blackboard and follows the rules of addition. What level(s) would this be a change to? Why?

(b) Suppose the process of addition is carried out by a very small man inside the cash register, who derives the correct answer by tossing a set of dice in the air. What level(s) would this be a change to? Why?

(c) Suppose a cash register was created that carried out the process of division between two numbers. For example, if given 20 and 5, it would produce 4. This computation is accomplished by a very small man inside the cash register who derives the correct answer by tossing a set of dice in the air. What level(s) would this be a change to, when compared to the original cash register? Why?

(10) In the sandwich example in the lecture notes, the creation of a peanutbutter and jelly sandwich was carried out by following a series of instructions and using the appropriate ingredients and tools, such as a knife and spoon. Someone's younger sibling was directed to follow those instructions and make the sandwich.

(a) Suppose the sandwich was created by a set of robotic arms that were programmed to follow the instructions specified. What level(s) would this be a change to? Why?

(b) Suppose a peanutbutter and jelly sandwich was the goal, but the instructions were carried out by a robotic arm. In addition, the robotic arm was unable to grasp utensils, and so used different tools to carry out the process than were specified in the original instructions (for instance, the robotic arm used specially designed peanutbutter and jelly squeezy containers). Which level(s) would this be a change to? Why?

(c) Suppose a pastrami sandwich was the goal, and the instructions therefore used different ingredients than the original peanutbutter and jelly instructions. Someone's younger sibling was still directed to carry out those instructions. Which level(s) would this be a change to? Why?

(d) Suppose a pastrami sandwich was the goal, and the instructions therefore used different ingredients than the original peanutbutter and jelly instructions. In addition, robotic arms were programmed to follow the instructions. Which level(s) would this be a change to? Why?

(11) What is the main kind of question that many computational models are used to answer?

(12) Why are many computational models interested in making cognitively plausible assumptions about how the child is representing and processing the input data?