

Psych156A/ Ling150

Spring 2010

Homework 1: Introduction to Language Acquisition, Mechanisms, & Sounds

Or “The Language Adventures of Sigmund von Hacklestein, part 1”

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

(29 points total)

(1) Sigmund von Hacklestein has been trying to understand some of the complexities that are involved in his knowledge of language, and how that relates to prescriptive and descriptive rules of language use. Sigmund received an essay back from his English teacher with the following comment: “Do not use contractions like *can't* and *don't*.” Sigmund was baffled, and spoke to his teacher after class:

Sigmund: “I don't understand why I can't use contractions when I write. I use them all the time when I speak.”

Teacher: “I don't care how you speak. I care how you write. Don't use contractions.”

Is Sigmund's teacher enforcing a prescriptive rule of English grammar or a descriptive rule of English grammar? Give one reason to support your answer.  
[4 pts]

(2) Sigmund remembers that we talked in class about a cash register carrying out the process of addition as an example that demonstrates Marr's hierarchy of explanation. However, he wants to make sure he really understands the different levels in Marr's hierarchy.

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.

Help Sigmund figure out the following problem:

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? Make sure to explain why you think so.  
[6 pts]

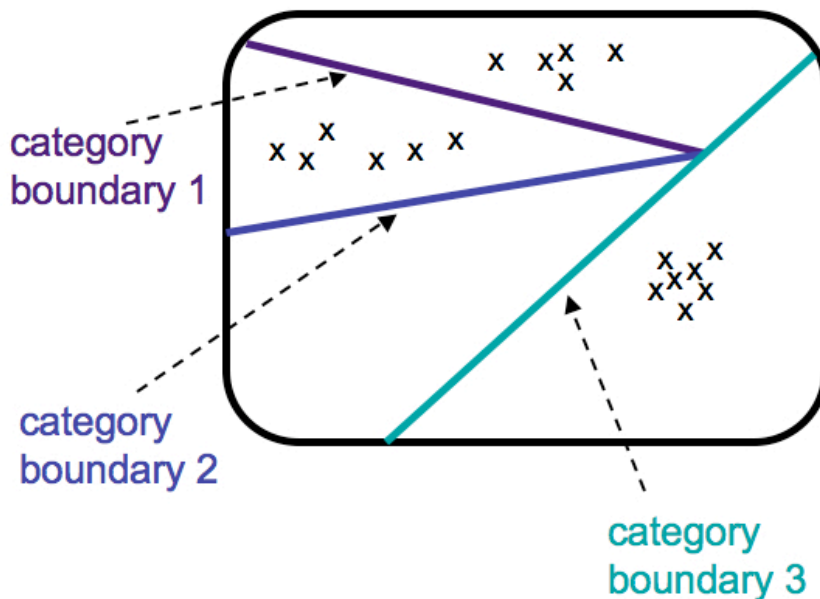
(3) Below are some data from the language of Guin, which Sigmund has encountered by spending time with the Guin people. Sigmund hopes to use them to figure out which sounds are contrastive in Guin.

- (i) “plep” = to give someone a stuffed penguin as a gift
- (ii) “flep” = to give someone a stuffed penguin as a gift

(a) Are “p” and “f” contrastive sounds in Guin? Explain why you think so. [3 pts]

(b) Sigmund later encountered some Guin speakers using the word “flep”. Should he know exactly what “flep” means, given the data he has already? If so, what should it mean and why? If not, why can’t Sigmund predict exactly what it means from the words he already knows? [3 pts]

(4) Sigmund is trying to understand how the Maintenance and Loss Theory determines which category boundaries a child will maintain, based on the input data. Suppose a child encounters the data points below (represented by ‘x’s). Which category boundaries (if any) will be maintained? Explain why you think so. [3 pts]



(5) Sigmund has been monitoring the vocabulary of his little brother Aethelric. Aethelric knows only the following words:

*mommy, daddy, Sigmund, big, ball, kitty, go, pig, doggie, call, mine, cup, bit, drink, tall, little, no*

(a) List which words Aethelric knows that are neighbors, making sure to indicate which words are neighbors to which other words.

Example answers using words that Aethelric does not know yet (your answers should use the vocabulary items Aethelric knows):

*rib* and *rig* are neighbors

*ray*, *say*, and *bay* are neighbors

[7 pts]

(b) If it is true that children who know neighboring words are able to distinguish those sounds in novel words (that is, the neighborhood structure idea), should Aethelric be able to learn that a new label *bov* is different from a new label *pov*? Briefly explain, using part of your answer from (a). [3 pts]