

Psych156A/ Ling150  
Homework 5: Words and Rules

1) Sigmund von Hacklestein among the Guins (Again)

Sigmund has been spending more time with the Guins, trying to understand their language. Lately, he's been gathering data on how they form their past tense. Here is some data that he's uncovered:

**root form**

pengar = "to slip"  
dappler = "to sing"  
crost = "to cook"  
brokk = "to stumble"  
pooket = "to grin"

**past tense form**

impengar = "slipped"  
imdappler = "sang"  
imcrost = "cooked"  
imbrokk = "stumbled"  
impooket = "grinned"

(a) Given only this data, how is the past tense formed in Guin? (That is, what do you have to do to a verb to make it into its past tense form?) [2 pts]

(b) Now, consider this additional data Sigmund discovered:

**root form**

tokk = "to touch"  
sokk = "to drop"  
vokk = "to throw"

**past tense form**

tookk = "touched"  
sookk = "dropped"  
vookk = "threw"

Does this follow the rule you described in part (a)? Why or why not? [3 pts]

(c) Suppose a Guin child was to encounter only the data from part (b). What rule might this child hypothesize for the past tense? [2 pts]

(d) Is this new rule compatible with the data from part (a)? Why or why not? [3 pts]

2) Sigmund doesn't understand why children make overregularization errors when they recognize that the overregularized forms of past tense verbs are incorrect. Describe to Sigmund how a child who knows the irregular past tense form "held" might still accidentally produce "holded", even though the child realizes this overregularized form ("holded") is incorrect. Be specific – you may find it helpful to think about the process in the child's mind that Pinker (1995) believes leads to overregularization. [4 pts]

3) Sigmund has heard the term "double dissociation", but doesn't quite understand how it applies to the neurological evidence for the declarative/procedural memory hypothesis about the English past tense. Help clear up Sigmund's confusion – given Sigmund an example of double dissociation evidence for the declarative/procedural memory hypothesis, making sure to explain why it is an example of double dissociation. (Hint: You will find it helpful to reference how the past tense of regular and irregular verbs is formed, according to the declarative/procedural memory hypothesis.) [6 pts]

#### 4) Irregularity

Sigmund was taken by the idea of irregular rules, and is trying to see if Guin children show evidence of having irregular rules. He has gathered the following data about two potential irregular rules in Guin:

**Rule: \*urk → \*ork**

Applies to 10 verbs.

How often Guin children have encountered verbs from this class: 1000 times.

Example of verb: vlurk~vlork

Frequency of “vlork”: 20 instances

Children’s performance on “vlork”: 85% correct

**Rule: \*bar → \*beer**

Applies to 3 verbs.

How often Guin children have encountered verbs from this class: 100 times.

Example of verb: pobar~pobeer

Frequency of “pobeer”: 20 instances

Children’s performance on “pobeer”: 25% correct

(a) If Guin children store both these irregular rules explicitly (rather than storing each verb and its irregular past tense form individually), do you expect their performance on “vlork” and “pobeer” to be the same or different? Why? [3 pts]

(b) Based on your answer from part (a) and the data Sigmund found, do you think Guin children are storing these irregular rules? [2 pts]