4/15/2005 – Allophonic Alternations

1. Tohono O'odham[1]

Look at the data in (1) from Tohono O'odham (formerly Papago), a Native American language of the southwestern United States. Consider the distribution of [t] and [tʃ].

(1)
(a) [ta:t] 'touched'
(b) [to:n] 'knee'
(c) [tʃiñ] 'mouth'
(d) [tʃɨm hekid] 'always'
(e) [tʃuk] 'black'
(f) [tʃikpan] 'is/was working'
(g) [tako] 'yesterday'
(h) [tʃɨkwo] 'ankle'
(i) [tʃuʔi] 'flour'
(j) [to:bi] 'rabbit, cottontail'
(k) [tas] 'sun'
(l) [towa] 'turkey'

(1) Fill in the chart below, giving the contexts in which [t] and [tʃ] occur, as shown.

[t]	
before	after
#	a:
a:	t

[tʃ]	
before	after
#	i

(2) Are [t] and [tʃ] separate phonemes or allophones of the same phoneme? How can you tell?

[1] Exercise from Akmajian, Demers, Farmer, & Harnish, 1995, *Linguistics: An Introduction to Language and Communication, 4th Ed.* Cambridge, Massachusetts: MIT Press.

(3) Come up with a generalization about the contexts that [t] and [tʃ] occur in.

(4) Do you think the underlying form of the phoneme should be /t/ or /tʃ/? Why?

(5) Write a rule that will derive the non-basic allophone in the appropriate contexts. First write it in words and then write it in features.

2. Luganda

Consider the following data from Luganda, a Bantu language.

[insert data – Fromkin et al. p. 336, exercise 14]

(1) Morphological analysis: Give the morphemes for the two prefixes and the root words, listing all allomorphs when applicable.

'a'			
'little'			
'canoe'		'peg'	
'house'		'horn'	
'animal'		'garden'	
'kidney'		'stranger'	
'feather'		'branch'	

(2) Which do you think is the basic (phonemic) form of each root noun ('canoe,' 'house,' etc.). Why? On the chart above, circle what you think is the basic form. (Or, if you think the basic form is something different, write it in and circle it.)

(3) Given your answer in (2), what has to be the basic (phonemic) form of the prefix meaning 'a'? Why? Circle it on the chart above (or write it in).

(4) Based on your answers so far, what is the underlying (phonemic) form of the following words from the data set? [The dash "-" goes between prefix and root.]

[ẽnato]	=	/	-	/	'a canoe'
[ẽmpipi]	=	/	-	/	'a kidney'
[akapipi]	=	/	-	/	'little kidney'
[ẽnn̄imiro]	=	/	-	/	'a garden'
[akad̄imiro]	=	/	-	/	'little garden'

(5) How many rules will be needed to derive the surface forms from the underlying forms? Describe in words what each rule will do.

(6) Formulate each rule using feature notation. [Note: you can use variables for feature values, such as α nasal.]