Week 3: Phonemic Analysis

Goals

- Practice with phonemic and distributional analysis
- Learn how to write rules in a phonological analysis
- Learn how to determine the underlying representation of a phoneme

Persian

Persian (also known as Farsi) is a member of the Iranian branch of the Indo-European language family, with around 110 million speakers mainly concentrated in Iran, Afghanistan, and Tajikistan.

(1)

a.	[ærteʃ] 'army'	h.	[beɾid] 'go'	o.	[ræŋ] 'paint'
b.	[ahaɾi] 'starched'	i.	[tʃedʒuˌr] 'better'	p.	[tʃeɾa] 'why'
c.	[ahaˌr] 'starch'	j.	[rah] 'road'	q.	[riʃ] 'beard'
d.	[farsi] 'Persian'	k.	[biɾæŋ] 'pale'	r.	[daɾid] 'you have'
e.	[ʃiɾini] 'pastry'	l.	[ʃiˌr] 'city'	s.	[ruz] 'day'
f.	[axæˌr] 'last'	m.	[rast] 'right'		
g.	[qædri] 'a little bit'	n.	[boɾos] 'hairbrush'		

- Look at the distribution of [r], [ɾ], and [ɾ]. Write out the environments in which they appear.

- Are these sounds in complementary or contrastive distribution?

- Are they allophones of the same or different phonemes?

- If they are allophones of the same phoneme, write a rule to derive the non-underlying allophones in the specific environment(s) where they occur.

Kaqchikel

Kaqchikel is a Mayan language, with over 450,000 native speakers across the western highlands of Guatemala. The following data is representative of the San Lucas Tolimán dialect of Kaqchikel, spoken on the shores of Lake Atitlán (about two hours from the capital, Guatemala City). Focus on the distribution of [b' w f]. The symbol [b']indicates a voiceless bilabial implosive. Some details of pronunciation have been suppressed for readability.

(2)

a. [b'ukut] 'shoe'
b. [tef] 'cold'
c. [b'iʃ] 'song'
d. [xob'] 'rain'
e. [aweʃ] 'your teeth'
f. [ulef] 'land'
g. [ak'wal] 'young person'
h. [utif] 'coyote'
i. [qab'ij] 'our name'
j. [tʃuf] 'smelly'
k. [axaf] 'god'
l. [ʃajab'] 'sandal'
m. [waqiʔ] 'six'
n. [kab'] 'sugar'
o. [joxwɨr] 'we are sleeping'
p. [wiʔaj] 'hair'
q. [kof] 'hard'
r. [wuquʔ] 'seven'
s. [b'aq] 'bone'
t. [xkowir] 'it hardened'
u. [jab'e] 'you are going'
v. [ʃiʃb'e] 'you (pl) went'

- Look at the distribution of [b'], [w], and [f]. Write out the environments in which they appear and give a descriptive generalization about their distribution.

- How many underlying phonemes do [b'], [w], and [f]belong to? Justify your answer, using specific examples from the data given above, and the terminology of phonemic analysis.

- If any of these three sounds belong to a shared underlying phoneme, which allophone represents the 'basic' variant? Why?

- Write any phonological rules needed for your analysis to generate the correct distribution of surface allophones.

Gascon

Gascon is a *lenga d'òc* language spoken in southwestern France. It is closely related to Occitan, Catalan, and Provençal. For this dataset, focus on the distribution of [b d g β ð ɣ]

(3)

a.	[brẽn] 'endanger'	m.	[gat] 'cat'
b.	[bako] 'cow'	n.	[lũŋg] 'long'
c.	[ũmbro] 'shadow'	o.	[saliβo] 'saliva'
d.	[krãmbo] 'room'	p.	[noβi] 'husband'
e.	[dilys] 'Monday'	q.	[aβe] 'to have'
f.	[dũŋko] 'until'	r.	[ʃiβaw] 'horse'
g.	[duso] 'sweet'	s.	[byðɛt] 'gut'
h.	[taldepãn] 'leftover bread'	t.	[eʃaðo] 'hoe'
i.	[pũnde] 'to lay eggs'	u.	[biɣar] 'mosquito'
j.	[guteʒa] 'flow'	v.	[riɣut] 'he laughed'
k.	[ẽŋgwãn] 'this year'	w.	[agro] 'sour'
l.	[puðe] 'to be able'	x.	[ʒuɣet] 'he played'

- Look at the distribution of [b d g β ð ɣ]. Write out the environments in which they appear and give a descriptive generalization about their distribution.

- Write a single phonological rule that can account for your analysis to generate the correct distribution of surface allophones.

- Show a derivation for 'sour', 'he laughed', 'to be able', and 'to lay eggs'