

Phonology problem set

24.900 — Introduction to linguistics

April 20, 2005

1 Apinayé consonant allophony

The following (slightly simplified) data are from the Apinayé language, spoken in central Brazil. The data are given in broad phonetic transcription, using the IPA. A vowel with a tilde (i.e., ã, ê) stands for a nasalized vowel, that is, one that is produced with airflow through the nasal cavity. [tʃ] and [dʒ] count as single (affricated) segments. Answer the questions that follow, in essay form when possible.

(1)	a.	[ba]	‘liver’	g.	[dʒo]	‘hang up’
	b.	[ɲõ]	‘give’	h.	[di]	‘woman’
	c.	[gũ]	‘clay’	i.	[ɲũ]	‘sit’
	d.	[mõr]	‘go (pl.)’	j.	[nõ]	‘lie down’
	e.	[ɲõt]	‘slept’	k.	[gruuk]	‘angry’
	f.	[bɛdʒ]	‘honey’	l.	[mõk]	‘center’

- List all consonant sounds, and classify them in a table according to manner and place of articulation.
- Not all combinations of consonant and vowel types are permitted in Apinayé. State any restrictions that you encounter in the data above. Hint: the restrictions have to do with voicing and nasality, not with place of articulation in either consonants and vowels, and should be quite simple to state.
- Given the restrictions that you found, two analyses are possible to establish the phonemic system of Apinayé. What are they?
- How do the following data bear on the choice of analysis?

(2)	a.	[ʔo]	‘leaf’	f.	[kĩ]	‘hair’
	b.	[tu]	‘stomach’	g.	[ʔõ]	‘another’
	c.	[ko]	‘club’	h.	[tê]	‘go (sg.)’
	d.	[pĩ]	‘firewood’	i.	[o]	‘fruit’
	e.	[krõr]	‘make peace’	j.	[õ]	‘his’

- State the conditions for the allophony of consonantal phonemes. How does the third set of data influence your statement of the environments that require each allophone?

- (3) a. [dvvdʒ] ‘snail’ c. [mrõ] ‘sink in’
 b. [ŋrøk] ‘shake’ d. [bra] ‘walk’

2 Rule ordering in Friulian

(Adapted from Kenstowicz 1994)

The following alternations are attested in Friulian, a Romance language spoken in Italy (a tilde over a vowel represents main word stress):

- (4) wárp ‘blind’
 warb-ít ‘sty’
- (5) piérd-i ‘to lose’
 piért ‘he loses’
- (6) kwárp-út ‘little body’
 kwárp ‘body’
- (7) dínt ‘tooth’
 dint-isín ‘little tooth’

Answer the following questions in prose form where relevant.

- How can you account for the alternation between /p/ and /b/ and /t/ and /d/? Do you need a voicing or a devoicing rule?
- Give the underlying forms of the stems found in the preceding data, and show what the derivation of ‘to lose’ and ‘little body’ is.

Now consider the following data:

- (8) lá:t ‘gone’ lát ‘milk’
 pá:s ‘peace’ pás ‘step’
- (9) lá:t ‘gone’
 lád-e (fem.)
 nervó:s ‘nervous’
 nervóz-e (fem.)
 tróp ‘flock’
 trop-út (dimin.)
 brút ‘ugly’
 brút-e (fem.)
 ló:f ‘wolf’
 lov-út (dimin.)
 fí:k ‘fig’
 fig-ón ‘big fig’

- Despite apparent minimal pairs, it is possible to predict whether a vowel will be long or short in Friulian. Provide the rule.
- You now have two independent rules. Can they apply in any order? Show that they can or can't by giving a derivation of 'wolf' and 'ugly'.
- What's the underlying form of 'peace'?

3 Extra credit: Acoustic phonetics

Record the answer sentences below in Praat as clearly as you can, and extract the pitch contour for each.

1. What happened? — John made bread.
2. Did Peter make bread? — No, *John* made bread.
3. Did John buy bread? — No, John *made* bread.
4. Did John make a cake? — No, John made *bread*.

Are there any peaks in the intonation contour of each of the sentences? Where are they in each case?