

24.901 Problem Set 6: Miya syllables and schwa.

Miya is a Chadic language. It is analyzed in Russell Schuh’s 1998 *A grammar of Miya* (University of California Publications in Linguistics).

This P-Set asks you to propose an OT analysis of some central aspects of Miya syllables.

1. Background information

- Miya phonemic consonant inventory:

	labial	alveolar	palatal	lateral	velar	labiovelar	laryngeal
stops	p	t			k	k ^w	
	b	d			g	g ^w	
	ɸ	ɗ					
affricates		t ^s	c				
		d ^z	j				
fricatives	f	s	ʃ	t ^l			h
	v	z	ʒ	d ^l			
prenasalized stops	^m b	ⁿ d			^ŋ g	^ŋ g ^w	
nasals	m	n					
approximants		r		l	ɣ		
			j		w		

- Single Cs vs. CC clusters:
All digraphs in the table above (e.g. *t^s*, *t^l*, *k^w*, *^mb*, *^ŋg^w*) refer to *single Cs*: their features are associated with one X. This fact plays a role in evaluating syllabic constraints: a word like *amba* is a VCV word, thus it violates neither *COMPLEX ONSET nor *CODA.

All other sequences of consonantal symbols, e.g. *lm*, *rk*, *rj*, *mp*, *nt*, *nk*, in the words below, refer to CC clusters. These consist of 2 Xs linked to consonantal features.

Below is an illustration of this difference between single Cs containing some sequenced articulations, like *^mb* in *a^mba*, vs. two distinct Cs, like *rk* in *arka*: the relevant difference is just the fact that *rk* contains two Xs, while *^mb* contains one X.

a

+labial

a

-cont

+voice

a

+cor

+dors

a

+cont

-cont

+voice

-voice

X

X

X

/ \

+nas

-nas

+son

-son

X

X

X

X

|

-nas

+son

-nas

-son

A representation of *a^mba*

A representation of *arka*

- The Miya vowel inventory:
a, a: (written <aa>) and ə

The occurrence of ə is predictable, as you will discover below, so the underlying vowels are just a and a:. The three vowels can assimilate to w and j, yielding for instance [u] < əw, [i] < əj. Such cases are ignored here.

2. Your tasks:

- Discover the syllable structure of Miya, from the restricted distribution of Cs and ə.
- Formulate constraints and rankings that allow you to predict the location of ə and the distribution of Cs on the surface.

In your analysis, make maximal use of syllable constraints already discussed in class and in the readings. But it will be necessary to state constraints that we have not encountered yet. For these, choose the *simplest feature-based* statements compatible with the data.

3. Consonant distribution in Miya:

- All single Cs occur initially and between Vs.
- No CCC clusters surface word-medially and no CC clusters surface initially or finally.
Further restrictions are illustrated below.

4. The following words illustrate constraints on the distribution of consonant classes, of the CC sequences and of ə. Using these examples, answer these questions:

- What classes of Cs can't occur word finally? Make the most general, simplest statement compatible with the data. Illustrate it.
- What classes of Cs can't occur pre-consonantly? Proceed as in (a)
- Are there any comparable restrictions on Miya onset Cs?
- Are there contexts where ə does **not** occur? How do you explain them?

vərkə	give birth
awraaj	marriage
t ^s əjəwsə	man
palg ^w aj	Sodom apple
təlpə	hoe
d ^l əntə	lion
kəŋkəl	cap
jəŋfə	plum tree
caŋhə	heart
zəjrakə	passing
anəjhə	medicine
g ^w arzakə	growing up
malvə	chief
g ^w afəsanna	thick
^m bərgəw	ram
t ^l əparkə	embracing

t ^s ərjakə	stepping
talmaj	worm
ʃəwjakə	breaking
ʃərhe	jealousy
ad ^l ənd ^l am	wasp
ɣərwan	aardvark
ad ^z a ⁿ dar	bedbugs
adəwdəw	sugar ants
kəŋkəl	cap
kəvəkə	monitor
tatəfaj	beer strainer
varkə	child
d ^l əntə	lion
bərbət ^l ə	tortoise
rəfə	sauce
bərəm	remainder
təjən	tooth
bələnkaj	baboon
sərtəhə	lake
rəvəzə	be fat
labadə	shoulder
atəm	song

5. Analysis

- a. Based on the generalizations you have developed thus far, indicate how the following words are divided into syllables in Miya, and explain how you know.

- i. talmaj
- ii. ad^zaⁿdar

- b. Identify the Markedness constraints on syllables that Miya words always satisfy. Illustrate their ranking relative to conflicting Faithfulness constraints. Illustrate your analysis with tableaux for *varkə*, *bərəm* and *kəvəkə*. Indicate for each candidate the syllabification you assume for it. Add any candidates that shed further light on your analysis, more columns to include extra constraints or entire tableaux for other forms.

UR:				
ɬ ^h varkə				
vark				
varəkə				
varək				

UR:				
ɛ̃ bərəm				
bərɪm				
brəm				
bərmə				
br̩mə				

UR:				
ɛ̃ kəvəkə				
kvək				
kəvək				

- c. Your analysis should also account for the following alternations. (This data is altered in minor ways, to simplify your task.) Give underlying representations for the verbs and write a sentence to indicate how your analysis explains the alternations.

Without suffix	With suffix	UR for the verb root
mən kərəm saj I scooped up	kərm-aka scooping up	
a ^m bələm-ja saj she winked at him	^m bəlm-aka winking	
abəj rəwən saj the water cooled off	rəwn-aka cooling off	

- d. Extra Credit: Here is a possible problem. Depending on your analysis, forms like *tʰəjəwsə*, *bələnəkaj*, *anəjhə* could cause a difficulty. If so, say what the difficulty is and try to solve it by adding constraints (keeping them as few and as general as possible) or by reformulating an existing one. Show how your idea works in the tableaux below. Mark the syllable division you assume.

UR:		
ɛ̃ tʰəjəwsə		
tʰəjwəsə		

UR:		
ɛ̃ bələnəkaj		
bələnəkaj		

UR:		
ɛ̃ anəjhə		
anjəhə		

- e. Give a summary of the constraint based analysis in Hasse-diagram form.

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