EXCERPT: ODDEN 1996 KIMATUMBI

If the rules apply, forms like *mmámɟɟya*, *nnálaánzɟ* result. Place assimilation of the nasal without nasalization of the obstruent (**ndálaánzɟ*, **nd̈álaánzɟ*) and nasalization of the obstruent without place assimilation of the nasal (**mnálaánzɟ*) are explicitly rejected.

3.2. VOWEL HARMONY

A vowel harmony rule affects the height of noninitial vowels in the stem as a function of the height of the preceding vowel. The constraint on sequences of vowels holds for morphologically transparent combinations of root+extension, and in general for all vowel sequences in the stem. The vowel *a* may appear anywhere in a stem, regardless of preceding vowels. Any vowel may be the first vowel of the stem.

(33)

bú̱ndala	'to get blunt'
cháawa	'to choose'
chéga	'to winnow by twisting'
chípya	'to limp'
chɲ̃nja	'to slaughter'
chú̱kya	'to hate'
púunga	'to curse'
chópya	'to incite to continue a quarrel'

Stem-medial vowels other than *a* obey the following rule: *e* appears only after *e* and *o*, *i* appears only after *i* and *u*, *ɨ* appears only after *ɨ*, *u̱*, and *a*; *o* appears only after *o*, *u* appears only after *u* and *i*, and *u̱* appears only after *a*, *ɨ*, *u̱* and *e*. In general we find rightward harmony of vowel height, with the exception that the low vowel *a* causes the highest vowel to follow it, and *e* does not cause *u̱* to lower to *o*, though *i* causes *u̱* to lower and *o* causes *ɨ* to lower. Thus, the following vocalic patterns are found.

(34)

	UNDERLYING NONINITIAL VOWEL		
V_1	ɨ	u̱	a
ɨ, u̱, a	ɨ	u̱	a
i, u	i	u	a
e	e	u̱	a
o	e	o	a

This principle of vowel harmony governs underived roots, as well as bringing about alternations in the form of verbal extensions. In (35*a*) we find alternations in the vowel of the passive suffix *-ɨlw-*; in (35*b*) we find the same alternations involving the causative *-ɨy-*; in (35*c*) we see the stative affix *-ɨk-*.

(35) *a.*

ásɨm-a	'borrow'
ásɨm-ɨlw-a	'be borrowed'
ɨ́n-a	
ɨ́n-ɨlw-a	
kṵ́n-a	
kṵ́n-ɨlw-a	
úug-a	
úug-ilw-a	
twíik-a	
twíik-ilw-a	
bóol-a	
bóol-elw-a	
kéengeemb	
kéengeemb	

b.

ú̱t-a	
ú̱t-ɨk-a	
bú̱ndal-a	
bú̱ndal-ɨk-	
kúul-a	
kúul-ik-a	
két-a	
két-ek-a	

c.

cháag-a	
cháag-ɨy-a	
chɲ̃nj-a	
chɲ̃nj-ɨy-a	
úug-a	
úug-iy-a	
bóol-a	
bóol-ey-a	
chéeng-a	
chéeng-ey	

Finally, although no end with the vowel *-u̱* before (epenthetic) *l* surface allomorph *-v*

(36)

yú̱pw-a	
yú̱pu̱-lw-a	
lɨ́bw-a	
lɨ́bu̱-lw-a	
tíikw-a	
tíiku-lw-a	
tíku-ly-a	
kúumbw-a	

	ɟn-a	'dance'
	ɟn-ɨlw-a	'be danced'
	kʉ́n-a	'grate coconut'
	kʉ́n-ɨlw-a	'be grated'
	úug-a	'bathe'
	úug-ilw-a	'be bathed'
	twíik-a	'lift a load'
	twíik-ilw-a	'be lifted'
	bóol-a	'tear bark off a tree'
	bóol-elw-a	'be de-barked'
	kéengeemb-a	'uproot tubers'
	kéengeemb-elw-a	'be uprooted'
b.	ʉ́t-a	'pull'
	ʉ́t-ɨk-a	'be pullable'
	bʉ́ʉ́ndal-a	'be blunt'
	bʉ́ndal-ɨk-a	'be bluntable'
	kúul-a	'pull teeth'
	kúul-ik-a	'be pulled'
	két-a	'cut into small pieces'
	két-ek-a	'be cut up'
c.	cháag-a	'grind'
	cháag-ɨy-a	'make grind'
	chɧ́nj-a	'slaughter'
	chɧ́nj-ɨy-a	'make slaughter'
	úug-a	'bathe'
	úug-iy-a	'make bathe'
	bóol-a	'de-bark'
	bóol-ey-a	'make de-bark'
	chéeng-a	'build'
	chéeng-ey-a	'make build'

Finally, although no extension contains the vowel *ʉ*, stems can underlyingly end with the vowel *-ʉ-*, which becomes a glide before *a* and appears as a vowel before (epenthetic) *l*: these examples involve both the passive affix with the surface allomorph *-w-* and the applied suffix *-y-*.

(36)	yʉ́pw-a	'serve'
	yʉ́pʉ-lw-a	'be served'
	lɧ́bw-a	'grind'
	lɧ́bʉ-lw-a	'be ground'
	tíikw-a	'break'
	tíiku-lw-a	'be broken'
	tíku-ly-a	'break with'
	kúumbw-a	'beat'

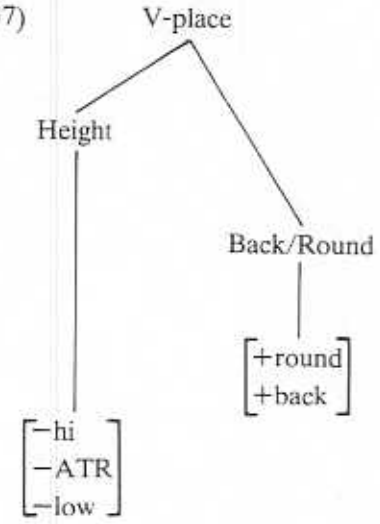
kúumbu-lw-a	'be beaten'
kúmbu-ly-a	'beat with'
bóomw-a	'destroy'
bómo-lw-a	'be destroyed'
chékw-a	'shave'
chéku̱-lw-a	'be shaved'
chéku̱-ly-a	'shave with'

Vowels of extensions only have two heights, either [+low] or [+hi,+ATR], and only the [+hi,+ATR] vowels undergo this alternation. Vowel Harmony will be stated as spreading [hi] and [ATR] from [−low] vowels to [−low] vowels. Since only [−low] vowels trigger vowel harmony, and noninitial vowels are assumed to be underlyingly [+hi,+ATR], we therefore get *a . . . i* and *a . . . u̱*.

It is important to know whether there is one rule assimilating the two features [hi] and [ATR], or else two rules, one spreading each feature. A two-rule solution must be rejected for three reasons. First, neither of the putative harmony rules can apply to the perfective affix *-ite* (e.g. *baalóotite* 'they have dreamed'). Such a condition should not be stated twice. Second, both rules would have to be subjected to the peculiar condition that *e* does not spread its features, either [−ATR] or [−hi], to *u̱* (hence *chéku̱lya*, not **chékolya* or **chékulya*). Finally, Vowel Harmony is exceptionally blocked in the lexical item *lóokiya* 'to request'—note that both assimilation of ATR and assimilation of [hi] are blocked.

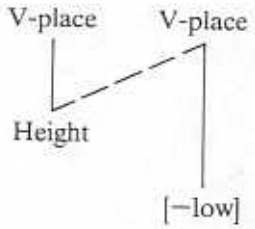
The next question is what constituent of the feature representation is spreading. The model adopted in Chapter 2 groups the height features together as one unit, and the features [back] and [round] as another. Thus, the vowel *o* has the following representation.

(37)



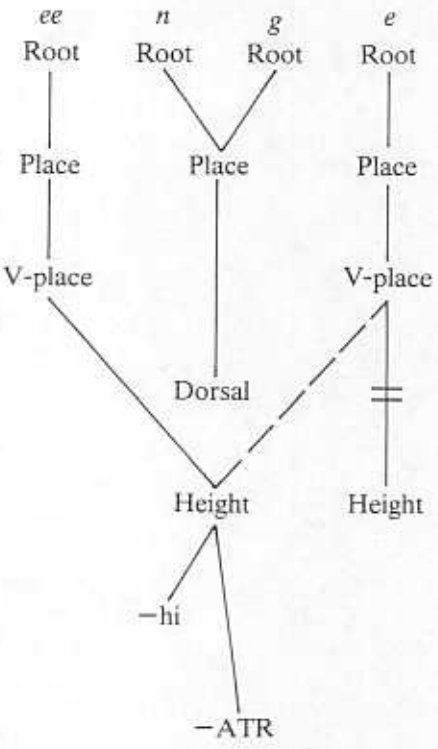
Vowel Harmony can then be formulated as in (38).

(38) *Vowel Harmony*



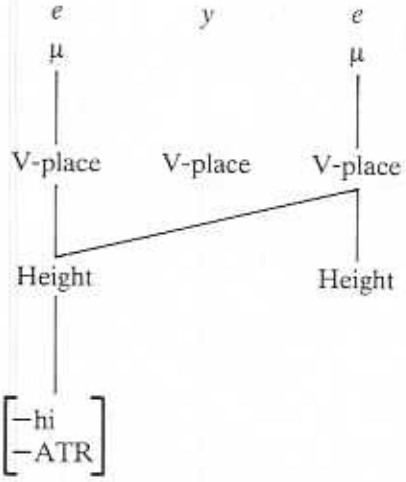
Consonants neither trigger nor block height harmony. Vowel Harmony is neither blocked nor triggered by a velar consonant, cf. *tíkulya* 'break with', *úugilwa* 'be bathed', and *chéengeya* 'make build'. Glides also do not trigger or block harmony, cf. *chóleyelwa* 'be made to draw', *pímikiyilwa* 'be sold to'. The transparency of consonants for Vowel Harmony is, in our model, a consequence of the fact that consonant-place and vowel-place features are structurally disjoint, so consonant-place features do not interfere with the spread of vowel-place features.

(39)



Glides are widely assumed to be nonsyllabic versions of the cognate high vowel, so glides themselves should either undergo Vowel Harmony, which they do not, or should block harmony, which they do not. However, glides in Kimatuumbi are redundantly [+hi], as they are in most languages, and may be underlyingly unspecified for height. Thus the substring *-eye-* of *chóleyelwa* 'be made to run' would have the following representation.[7]

(40)



An important restriction on Vowel Harmony is that is it does not affect either the suffixing or the infixing allomorph of the perfective. This is shown by forms such as *naa-télɻ́ke* 'I cooked', *naa-nóol-ɻte* 'I sharpened', *baa-bwéenɻ́* 'they saw', and *tw-uúbwɻ́ke* 'we climbed'. Failure of Vowel Harmony cannot be due to vowel length; Vowel Harmony is observed in all other long vowels, as shown by forms such as *lóngeela* 'to speak', *lʮ́lʮʮta* 'to ululate', *péndeesa* 'to please someone', and *úgiilya* 'to swim'. Furthermore, not all perfectives have a long vowel. Vowel Harmony simply does not apply to the perfective, nor, for that matter, to the nominalizing suffix *ɻ́* or the adjective forming suffix *-ʮ*, the other two final-vowel morphemes with high vowels.

(41)

n-télek-ɻ́	'cook'		n-núb-ɻ́	'asker'
n-chón-ɻ́	'sewer'			
ʮ-nénep-ɻ́	'fatness'		ʮ-tóp-ɻ́	'heaviness'
m-moʮ́	'rotten'			

It has been argued in Chapter 2 that the perfective suffix is one of the final-vowel category morphemes. We therefore impose a morphological condition on Vowel Harmony that prevents such morphemes from undergoing the rule.

[7] At a later stage in the derivation, values of height features must be assigned to glides by default rule. Glides must have height features by the time Glide Deletion applies, since that rule applies to glides before homorganic vowels, and height differences affect the homorganicity of the sequence. Glide Deletion is probably a postlexical rule.