

A preliminary description of Kensiw (Maniq) phonology¹

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0. Introduction

Kensiw is a Northern Aslian (Jahaic) language, a sub-branch of the Mon-Khmer language family. It is spoken by a small community in Yala Province in southern Thailand and also reportedly by a community of approximately 400 speakers in Western Malaysia in Perak and Kedah States. Speakers of this language refer to themselves as the Maniq. This paper represents the phonology of the Yala Province speakers only and should be considered distinct from other Negrito dialects found in other southern provinces of Thailand.

Previous research on Kensiw has been limited due to inaccessibility of the speakers, but see especially Phaiboon (1984) and Bauer (1990). This analysis is based upon research carried out intermittently from 1988-1992. Dr. Jerold Edmondson of the University of Texas at Arlington did selected acoustical instrumental analysis on Kensiw in 1992 at Bansakai.² Reference is made to his findings in Sections 1.1 and 2.2. Due to the small speech community and extensive Malay borrowings, it is to be considered a tentative analysis. The corpus of the data consisted of a rhyming glossary of 2,170 items.³

Kensiw vowels, as in many Mon-Khmer languages, are numerous. There are 14 oral monophthongs, 12 nasal monophthongs and two diphthongs (1 oral and

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³ Due to the dynamics of final consonants on the preceding vowels and to the preponderance of vowels in Mon-Khmer languages, a rhyming list has been used to identify contrastive segments. Throughout the paper, words listed as contrastive sets are arranged according to the final rhyme. The reader should examine these examples from right to left in order to observe the segment(s) in question. The only exception to this ordering is in the listing of unstressed central vowel contrasts in Appendix 2 where they are ordered by the initial consonant.

1 nasal diphthong) bringing the total inventory to 28 vowels. Of particular interest is the presence of front, central and back vowels at a tongue height intermediate to the close-mid and open-mid positions.⁴ There does not appear to be any voice register distinction.

Of interest in the consonants is the large inventory of palatal consonants: *c*, *ɟ*, *ɲ* and *j*. There appears to be sound change in process, particularly found in some Malay borrowings, where a retroflexed approximant [ɻ] is reanalyzed as a velar fricative [ɣ]; this change is inconsistently produced at the moment. As in Pacoh, a Mon-Khmer language (Watson 1964), voiced final stops have allophones in word-final position. These allophones are pre-stopped nasals. Maier (1969) also described pre-stopped final nasals which she analyzed as consonant clusters of glottal stop and nasal in Cua, another Mon-Khmer language.

This description is organized into three sections. Section 1.0 charts and describes both the vowel and consonant segmental phonemes and their distribution. Section 2.0 describes suprasegmentals and Section 3.0 outlines the possible syllable types, the segments that can occur in each syllable and reduplication.

1.0 Phonemes

1.1 Vowel phonemes

	FRONT		CENTRAL		BACK	
Tongue Height	Oral	Nasal	Oral	Nasal	Oral	Nasal
close	i	ĩ	u	ũ	u	ũ
near-close	ɪ	ĩ				
close-mid	e	ẽ	ə		ɔ	õ
mid	e	ẽ	ə		o	õ
open-mid	ɛ	ẽ	ʌ	ã	ɔ	õ
open			a	ã		
Diphthongs	ie	ĩẽ				

Chart 1. Vowel Phonemes

Two noteworthy features of Kensiw vowels are nasality and tongue height. As reflected in Chart 1, there is a contrasting nasal monophthong for each oral monophthong except /ə/ and /ɚ/. While the frequency of the nasal vowels is much less than that of the oral ones and they are often in a conditioned environment, there are sufficient examples of their occurrence in non-conditioned environments to warrant assigning phonemic status to them (see Appendix 1).

⁴ The revised IPA system has been used throughout this paper.

Kensiw vowels have five distinctive tongue heights for the front and central vowels and four for the back vowels. The close-mid vowels /ɛ̄/, /ə̄/ and /ẽ̄/ exhibit a slightly higher tongue height than their mid-counterparts /e/, /ə/ and /o/, which appear unmarked (see Appendix 2).

Acoustical analysis by Edmondson confirms an earlier subjective judgment regarding front and back vowels' tongue heights in Kensiw. It may be noted further that tension is associated with closer rather than with open tongue height, contrary to what is reported in Gregerson (1976) for other Mon-Khmer languages.

1.1.1 Vowel description

/i/ is a close front unrounded vowel, slightly lower and more backed than CV (cardinal vowel) 1, [i]. It is produced at a slightly higher position than its counterpart, [i]. Examples: [ka.piŋ] *kapig* 'CLASS.', [ha.miʔ] *hamiʔ* 'person', [pa.si] *pasi* 'sand'.

/ĩ/ is the nasal counterpart of /i/. Examples: [he.hĩ] *hehĩ* 'to growl/snarl', [du.mĩt] *dumĩt* 'ankle', [ʔɛ.tĩʔ] *ʔɛtĩʔ* 'to disobey'.

/ɪ/ is a near-close front unrounded vowel [ɪ] which has a slightly lower tongue height and is slightly more backed than /i/. Its distribution is more restricted than that of /i/. Examples: [lɔp.sɪp] *lɔpsɪp* 'to be noisy', [ma.nɪh] *manɪh* 'ring finger', [naŋ.nɪŋ] *naŋŋ* 'tail movement of bird'.

/ĩ/ is the nasal equivalent of /ɪ/. Examples: [kɪp.lĩp] *kɪplĩp* 'to wink', [ku.jĩt] *kujĩt* 'cumin', [hã.ʔĩt] *hãʔĩt* 'smelly'.

/ɛ̄/ is a close-mid front unrounded vowel [e], lower and further back than CV 2. It does not occur in the environment of final voiced bilabial stops or liquids. Examples: [ʔɛʔ] *ʔɛʔ* 'dog', [bu.tɛw] *butɛw* 'water', [ʔɛʔ] *ʔɛc* 'feces'.

/ẽ̄/ is phonetically similar to /ɛ̄/, but is nasal. Examples: [si.sẽ̄] *sisẽ̄* 'garbage dump', [jẽ̄k] *jẽ̄k* 'to stab', [pẽ̄j] *pẽ̄j* 'IMPERATIVE'.

/e/ is a mid front unrounded vowel [e], lower and backed more than /ɛ̄/. It is unmarked diacritically since it is closer to the position of rest for the tongue, therefore, more natural. Its distribution is slightly broader than that of /ɛ̄/, but its frequency is essentially equivalent. Examples: [ti.jek] *tijek* 'to sleep', [lɛŋ] *leg* 'fluid', [jeʔ] *jeʔ* 'PRONOUN 1S'.

/ẽ/ is the nasal equivalent of /e/. Examples: [jə.pẽt] *jəpẽt* 'to squeeze', [kə.tẽk] *kətẽk* 'rubber', [ʔa.wẽh] *ʔawẽh* 'to be sprained'.

/ɛ/ is an open-mid front unrounded vowel [ɛ] which is slightly higher and more backed than CV 3. Its distribution and frequency are almost identical to that of /ɛ̄/. Examples: [gə.hɛt] *gəhɛt* 'sweet', [wɛʔ] *wɛʔ* 'quiet', [pi.sɛŋ] *pisɛŋ* 'banana'.

/ẽ/ is the nasal counterpart of /ɛ/. Examples: [ɟan.hẽt] *ɟanhẽt* 'to be short', [baɰ.tẽk] *baltẽk* 'black', [tam.bẽɰ] *tambẽl* 'slow loris'.

/ɯ/ is a close backed central unrounded vowel [ɯ]. It is significantly more fronted than CV 16, [ɯ], but not enough to compare it with CV 17, [i]. Like the previous close vowels, it is lower in tongue height than its comparable cardinal vowel. Examples: [ha.jɯp] *hajɯp* 'to know', [kan.kɯdn] *kankɯd* 'to throb', [ʔɯh] *ʔɯh* 'this'.

/ũ/ is phonetically similar to /ɯ/, except that it is nasal. Examples: [tʌn.nũt] *tʌnnũt* 'lower lip', [taʔ.tũʔ] *taʔtũʔ* 'to crash together', [kuĩs] *kuĩs* 'beetle'.

/ə̃/ is a close-mid central unrounded vowel [ə̃]. It has a retroflexed quality, perhaps influenced by Malay contact. It is slightly higher than the schwa [ə]. It can occur in stressed syllables in limited environments, but is primarily found in unstressed syllables. Examples: [jə̃h] *jə̃h* 'to trim', [ba.hə̃bm] *bahə̃b* 'to pass gas', [kə̃ʔ] *kə̃ʔ* 'to vomit'.

/ə/ is a mid central unrounded vowel [ə]. Its tongue height appears to be midway between the close-mid and open-mid positions as diagrammed in the IPA vowel chart. It rarely occurs in stressed syllables. Examples: [pə.nə.las] *pənəlas* 'last of something', [təh] *təh* 'to be bald', [bə.ʔut] *bəʔut* 'good'.

/ʌ/ is an open-mid backed central unrounded vowel [ʌ]. Its tongue height is slightly higher than that of CV 14, but significantly more fronted. As with /ə̃/ and /ə/, /ʌ/ is most commonly found in unstressed syllables. Unlike these other two central vowels, which usually occur in the syllable pattern CV, /ʌ/ frequently occurs in the closed syllable pattern, CVC. Examples: [sʌt.si.ʔɛc] *sʌt siʔɛc* 'to steal', [sʌt luk] *sʌt luk* 'mud', [hʌʌ] *hʌʌ* 'stream'.

/ʌ̃/ is the nasal equivalent of /ʌ/. Examples: [gʌ̃t] *gʌ̃t* 'to swim', [kʌ̃t.kʌ̃t] *kʌ̃tkʌ̃t* 'to lay eggs', [hʌ̃.ʔit] *hʌ̃ʔit* 'smelly'.

Except for /a/, none of the central vowels appear to carry a heavy functional load, but they are in contrast with one another, requiring their analysis as separate phonemes. The pattern is also symmetrical, involving a three way contrast in tongue height for close-mid, mid and open-mid vowels in all three tongue positions (front, central and back).

/a/ is an open central unrounded vowel [ə]. It is the most frequently occurring vowel and can co-occur with every initial single consonant and virtually every final consonant. [ka.maj] *kamaj* 'butterfly', [pi.ʔagŋ] *piʔag* 'tuber', [sa] *sa* 'to descend'.

/ã/ is the nasal counterpart of /a/. Examples: [ka.wãp] *kawãp* 'bear', [pɛ.ʔãt] *pɛʔãt* 'to be spoiled', [sãw] *sãw* 'large bat'.

/u/ is a close back rounded vowel [u]. In comparison to CV 8, it is slightly lower and more fronted. Examples: [jum.put] *jumput* 'grass', [pə.tuc] *pətuc* 'long', [pʌŋguh] *pʌŋguh* 'to play'.

/ũ/ is phonetically similar to /u/, but nasal as well. Examples: [jan.nũh] *janũh* 'many', [tʌn.tũʔ] *tʌntũʔ* 'to be certain', [lʌϕ.lũϕ] *lʌϕlũϕ* 'to be swollen'.

/ɔ̄/ is a close-mid back rounded vowel [ō]. It is slightly lower and more fronted than CV 7. In comparison to /o/, it is produced at a slightly higher tongue height. Examples: [jaam.pɔ̄] *jampɔ̄* 'together', [dɛ.jɔ̄dn] *dɛjɔ̄d* 'to jump down', [jə.tɔ̄h] *jətɔ̄h* 'to cough'.

/ɔ̄̃/ is the nasalized realization of /ɔ̄/. Examples: [sət.srɔ̄̃t] *satsrɔ̄̃t* 'to sniff', [kat.twɔ̄̃c] *kattwɔ̄̃c* 'to scrape away', [la.tɔ̄̃ʔ] *latɔ̄̃ʔ* 'squirrel'.

/o/ is a mid back rounded vowel [o]. Examples: [pa.lot] *palot* 'to crawl under something', [ʔɛ.pok] *ʔɛpok* 'to pound', [toh] *toh* 'to balance'.

/õ/ is the nasal equivalent of /o/. Examples: [ʔi.gõc] *ʔigõc* 'to tickle', [jõk] *jõk* 'upper lip', [cʌʔ.cõʔ] *cʌʔcõʔ* 'sound to shame child'.

/ɔ/ is an open-mid back rounded vowel [ɔ]. It is slightly higher and more fronted than CV 6. Examples: [ʔɔs] *ʔɔs* 'fire', [ta.wɔh] *tawɔh* 'gibbon', [ka.tɔk] *katɔk* 'tomorrow'.

/ɔ̃/ is the nasal counterpart to /ɔ/. Examples: [kalɔ̃ʔ] *kalɔ̃ʔ* 'freshwater snail', [hɔ̃s] *hɔ̃s* 'to fall', [hɔ̃ʌ] *hɔ̃ʌ* 'to be hungry'.

/ɔ/ and /ɔ̃/ pattern similarly to the front vowels, /ɛ/ and /ɛ̃/. /o/ has a lower occurrence and distribution than its front counterpart, /e/.

/ie/ is a close front unrounded lowering diphthong, [ie]. It occurs only in stressed syllables, always with a final stop. Its incidence is quite low, with only ten lexemes out of over 2,000. It has an allophone, [iẽ], before a final glottal stop. There appears to be a nasal counterpart, /iẽ/, but again its incidence is rare. Examples: [kʌ.ciɛʔ] *kʌciɛʔ* 'moon', [jan.jiẽʔ ʔa.lodn] *janjiẽʔ ʔalod* 'to vomit', [la.kiebm] *lakieb* 'brain', [pa.tiẽw] *patiẽw* 'water monitor lizard'.

1.1.2 Vowel contrasts

The following set of examples shows most of the vowels in analogous final syllable environments:

ʔɛ.tiʔ	'to obey'	la.taʔ	'waterfall'
pa.tiʔ	'to spit betel juice'	ʔã.wãʔ	'turtle (type)'
pʌ.tɛʔ	'papaya'	ba.tuʔ	'stone'
jeʔ	'PRONOUN 1S'	tũʔ	'garden snail'
kẽ.lɛwẽʔ	'toy revolver'	tɔʔ	'elder sibling'
sɔ.dɛʔ	'spatula'	la.tɔ̃ʔ	'squirrel (type)'
nẽʔ	'leftside'	ta.jɔʔ	'tiger (type)'
ʔan.ʔan.tuʔ	'groceries'	cʌ.cõʔ	'EXCLAMATIVE'
taʔ.tũʔ	'to crash into'	sə.tɔʔ	'to decide'
ka.təʔ	'skin'	ka.lɔʔ	'fresh water snail'

Not all vowels occur in all environments. The central vowels /u, ə, ʌ/ do not occur in open syllables and /ə, ə, ʌ/ do not occur with final approximants /w, j/. A number of vowels, especially /i, e/ appear to occur only rarely, if at all, with the final nasals /m, n, ŋ/; however, the incidence of final nasal consonants is very low so that it is not possible to conclusively state this as a restriction. In relation to approximants, only /i, e, ε, a, o/ can co-occur with a final /w/ and /i, ɪ/ do not occur with a final /j/. The diphthong cannot combine with a final approximant, presumably due to the vocalic nature of the approximants which would violate the syllable patterns (see Appendix 3 for monophthong distribution charts).

1.2 Consonant phonemes

The Kensiw consonant phonemes are shown in Chart 2.

POINT OF ARTICULATION

		bilab.	alveo.	retro.	palat.	velar	glottal
M	Stop, vl.	p	t		c	k	ʔ
A	Stop, vl. asp.					(k ^h)	
N	Stop, vd.	b	d		ɟ	g	
N	Nasal	m	n		ɲ	ŋ	
E	Fricative, vl	ɸ	s				h
R	Fricative, vd.					ɣ	
	Lateral approximant		l				
	Central approximant	w		ɹ	j		

Chart 2. Consonant Phonemes

1.2.1 Consonant allophonic description and distribution

Unvoiced stops are characteristically unaspirated, but three of the five are (though infrequently) realized as aspirated stops, apparently as a result of borrowings.

/p/ normally is realized as a voiceless unaspirated bilabial stop [p], but also has a rare aspirated allophone [p^h] in initial position which appears to be the result of a Malay borrowing. p:p^h [pa.lot] *palot* 'to crawl under', [p^ha.ɹɔt] *paɹɔt* 'scar' (Malay parut 'scar'). Examples of /p/ in syllable final position are [ku.tɐp] *kutɐp* 'to pick up', [ɲãp] *ɲãp* 'bright', [ɟə.lɔp] *ɟəlɔp* 'to parboil'.

Normally, /t/ is realized as an unaspirated alveolar stop syllable initial and final, [t], e.g. [ʔɔ.taʔ] *ʔɔtaʔ* 'brain', [tis] *tis* 'mushroom', [tũʔ] *tũʔ* 'garden snail',

[ta.biʔ] *tabiʔ* 'to ignite', [hə.lət] *hələt* 'to pant'. /t/ also has a rare aspirated allophone, [t^h], which appears syllable initial in a Thai borrowing, [ka.t^haʔ] *kata* 'fry pan, pot'. /t/ has one other occasional allophone [t̚], a voiceless dental or fronted alveolar stop. To date, no phonological conditioning has been recognized that would account for this allophone. The three occurrences in the corpus are listed here: [puʔ] *puʔ* 'to hit with instrument', [ja.wat̚] *jawat* 'man's loincloth', [pʌn.hat̚ kuʔ] *pʌnhatkuʔ* 'to burn accidentally'.

/c/ is a voiceless palatal stop occurring syllable initial and final, albeit infrequently. Examples are [kɛ.cɛ] *kɛcɛ* 'to dance', [cibm] *cib* 'to cry', [ba.cuʔ] *bacuʔ* 'shirt', [ʃɛc] *sɛc* 'flesh', [luuc] *luuc* 'to be at a distance', [ʔɔc] *ʔɔc* 'to feel a ghost nearby'.

/k/ is realized phonetically as a voiceless unaspirated velar stop initially and finally, [k], e.g. [ʔaŋ.kɛʔ] *ʔaŋkɛʔ* 'chin', [ka.mah] *kamah* 'dirty', [kaw] *kaw* 'pig', [pek] *pek* 'to split', [bə.luuk] *bəluuk* 'bamboo shoot', [sok] *sok* 'hair'. /k/ likewise has an infrequent aspirated realization [k^h] which appears to be in contrast with /k^h/ in syllable initial position in a limited number of words. For that reason, /k^h/ has been given a provisional or marginal phonemic status in this analysis. To date, the source language of some of these aspirated examples has not been determined, but the majority are Thai borrowings. Examples are [k^hwa] *k^hwa* 'to pinch off', [k^hə.lɛʔ] *k^həlɛʔ* 'betel nut bag', [k^hadn] *k^had* 'metal bowl', [k^hi.man] *k^himin* 'cumin'.

/ʎ/ occurs syllable initially and finally on a very frequent basis. Its syllable\final distribution seems to be restricted primarily to stressed syllables, e.g. [haj.ʎiʔ] *hajʎiʔ* 'day', [ʔa.coʔ] *ʔacoʔ* 'little, small', [ʔãp] *ʔãp* 'correct', [ʔɛ.bus] *ʔɛbus* 'to boil', [ma.niʔ] *maniʔ* 'negrito', [tɔʔ] *tɔʔ* 'elder sibling', [ʎiʔ.paʔ] *ʎiʔpaʔ* 'to dream'.

Syllable initially, /b, d, ʝ, g/ are phonetically realized as voiced bilabial, alveolar, palatal and velar stops, [b, d, ʝ, g], respectively, but as prestopped nasals morpheme final. That is, the voiced stops have a word final allophone with a final nasal assimilating to the same point of articulation as the stop: /b/, [-bm], /d/, [-dn], /ʝ/, [-ɲ], /g/, [-gŋ]. (See the end of Section 1.2.1 for a more complete description of the voiced stops in final position.). Examples of /b, d, ʝ, g/ syllable initial are: [ku.bɔ sa.ɔʔ] *kubɔ saɔʔ* 'cemetery', [bap] *bap* 'monitor lizard', [bwas] *bwas* 'naive', [sa.dep] *sadep* 'to fill with water', [dɔk] *dɔk* 'blowgun poison', [pa.daw] *padaw* 'bee', [ju.ʝu] *juʝu* 'sound to call dogs', [juuc] *juuc* 'to wade', [pə.ʝã] *pəʝã* 'sour', [gɪdn] *gɪd* 'PRONOUN 3S', [gas] *gas* 'large healed wound', [gaʎ] *gal* 'to lap up'.

/m, n, ɲ, ŋ/, nasal plosives at the bilabial, alveolar, palatal and velar points of articulation, are relatively infrequent in comparison to the oral plosives. The palatal nasal /ɲ/ is the least frequent and least widely distributed of all the nasals. All four nasals occur both syllable initial and final, e.g. [ma.bɛ] *mabɛ* 'woman', [ʔa.met] *ʔamet* 'COMPARATIVE MARKER', [tə.kum] *təkum* 'fatty pad above bridge of nose', [ka.nɔm] *kanɔm* 'urine', [ka.nat] *kanat* 'comb', [pa.nik] *panik* 'durian', [kə.la.mɪn] *kəlamɪn* 'pair', [bə.ʝã] *bəʝã* 'to itch', [ɲɔ] *ɲɔ* 'coconut', [pi.ɲabm] *piɲab* 'to borrow', [bʌ.sɛɲ] *bʌsɛɲ* 'to be small', [hãɲ] *hãɲ* 'mouth', [ŋap.ŋap] *nʌpŋap* 'to chew', [tu.ŋuʔ] *tunjuʔ* 'to wait long time', [pi.naŋ] *pinaŋ* 'betel nut', [ʔa.põŋ] *ʔapõŋ* 'gibbon'.

/ɸ/ is a voiceless bilabial fricative, [ɸ], which does not have any syllable initial allophones, but only occurs in syllable final position, e.g. [ha.luɸ] *haluɸ* 'to blow blowpipe', [tʃɸ] *tʃɸ* 'to spit far away', [pi.juɸ] *pijuɸ* 'to chase away animals', [kaw.kɔɸ] *kawɔɸ* 'to explode/flare up'. It is in contrast with other phonetically similar segments, requiring that it be given phonemic status. ɸ:p:b:m [ʔeɸ] *ʔeɸ* 'to blow through one's fist', [ʔep] *ʔep* 'at', [si.ʔebm] *siʔeb* 'Thai', [ka.ʔɛm] *kaʔɛm* 'to clear throat'.

/s/, a voiceless alveolar fricative, has a palatal allophone [ʃ] in both syllable initial and syllable final positions which appears to be in free variation with [s]. Individual speakers seem to use one allophone consistently, although either realization is deemed correct by all speakers, e.g. [gi.huʃ] ~ [gi.hus] *gihuʃ* 'to sigh', [pu.laʃ] ~ [pu.las] *pulas* 'to twist', [si.ʔaʔ] ~ [si.ʔaʔ] *siʔaʔ* 'salt', [si.ʔɛh] ~ [si.ʔɛh] *siʔɛh* 'betel nut leaf'. Further examples of /s/, including the allophonic variant [ʃ]:[sat.srɔt] *satsɔt* 'to sniff', [sa.jap] *sajap* 'wing', [sok] *sok* 'hair', [ʔi.siʔ] *ʔisiʔ* 'body, CLASSIFIER', [sɔʔ] *sɔʔ* 'rotten', [cas] *cas* 'hand', [hɔs] *hɔs* 'to fall down'.

/h/ is a voiceless glottal fricative that occurs both syllable initial and final, e.g. [hɔŋ] *hɔŋ* 'to whistle', [pi.hɛj] *pihɛj* 'to stand up', [bə.hiʔ] *bə.hiʔ* 'satisfied, full', [pə.dih] *pədih* 'hot', [jɛh] *jɛh* 'pronoun 1d', [sa.wah] *sawah* 'slow'.

/l/ is realized as a palatal allophone [ʎ] in syllable final position. Syllable initially /l/ is realized as a 'clear' lateral approximant [l]. Examples include [pi.lih] *pilih* 'to choose', [la.kiʔ] *likiʔ* 'again', [lɔk.luk] *lɔkluk* 'to smile', [ta.baʎ] *tabal* 'side of body', [duʎ] *dul* 'deaf', [ceʎ] *cel* 'to sell'.

/w/, a voiced labio-velar central approximant, occurs both syllable initial and final, e.g. [gu.wa] *guwa* 'cave', [da.widn] *dawid* 'drunk', [pu.wɔʔ] *puwɔʔ* 'to forbid', [ha.jiw] *haji* 'type of plant', [ju.jaw] *jujaw* 'to meet', [ba.lɛw] *balɛw* 'to be round'. It can also occur in the second consonant position of a syllable initial consonant cluster in stressed syllables, e.g. [ka.pwa] *kapwa* 'lime (chemical)', [k^hwa] *k^hwa* 'to pinch off', [lwɔk] *butɛw lwɔk* 'water full of garbage', [pwɔʔ] *pwɔʔ* 'IMPERATIVE'.

/ɹ/ is normally realized as a voiced retroflexed central approximant in either syllable initial or syllable final position, [pə.ɹeʔ.sa] *pəɹeʔsa* 'to examine', [sa.ɹɔʔ] *saɹɔʔ* 'ghost', [baɹ.kaw] *baɹkaw* 'north', [kə.waɹ.ga] *kə-waɹga* 'family'. This phoneme is perceived as a flap [r], however, when it is the second consonant of a syllable initial cluster, e.g., [ja.prep] *kawaw japɹep* 'hummingbird', [pra.sa.ʔadn] *pɹasaʔad* 'consciousness', [traŋ] *tɹag* 'to be clear sighted'. There is one additional occurrence of /ɹ/ which is phonetically realized as a trill [r], [ʔar.jap] *ʔaɹjap* 'rabbit' (Malay).

In Section 0, the interchange of the retroflexed approximant /ɹ/ and a voiced velar fricative /ɣ/ was mentioned. Both of these phonemes are found infrequently, only in Malay borrowings and usually in syllable initial positions. They appear to be the Kensiw realization of Malay /r/. The environments for both are essentially the same (intervocalic), perhaps implying that the lexemes in which they occur have been borrowed at different times or by different people. Diffloth (1976), referring to the occurrence of /hr/ in Jah-Hut (a Central Aslian language), postulates that /hr/

is a reinterpretation of old Temuan and colloquial Malay borrowings which have a voiced velar fricative phone [ɣ] replacing the Malay /r/. The assumption is that /ɣ/ lexemes are older borrowings for one of two reasons. Either these words were borrowed when the Kensiw were still in contact with colloquial Malay dialects having the velar fricative or there is a sound change in progress. A sound change is postulated because it appears that Kensiw is strengthening the Malay /r/ from an approximant /ɹ/ to a fricative /ɣ/ in the intervocalic environment in order to preserve the CV pattern.

MALAY	KENSIW	ENGLISH
parut	[p ^h a.ɹɔt]	'scar'
goreng	[kɔ.ɹɛŋ]	'to fry'
cherek	[ɟɛ.ɣek]	'teapot'
kering	[ke.ɣɛŋ]	'dry'

A similar phenomenon is happening with the Malay final velar nasal, /ŋ/. Frequently, but by no means consistently, Kensiw reinterprets the Malay /ŋ/ as a prestopped nasal, [ŋ̚], as in the examples given above.

/j/ is a voiced palatal central approximant which occurs in syllable initial and final positions, e.g. [la.jedn] *lajed* 'other', [hʌn.ja] *hʌnja* 'woman's loincloth', [ja.jɛŋ] *jajɛŋ* 'to be barren', [ki.kɛj] *kikɛj* 'to eat, but not share', [gɔj] *gɔj* 'sweets', [juj] *juj* 'to carry'.

As previously stated, the voiced stops, /b, d, ɟ, g/, are all realized as prestopped nasals in syllable final position. Prestopped nasals have been described in Aslian languages previously by Clifford (1891), Diffloth (1976) and others. Historically and cognitively, these stops are nasals. For example, [cadn] 'foot' is comparable to *chan* from Vietnamese, *jɿŋ from Proto North Bahnaric and *jɛŋ* from Rengao. Likewise, [kɛ'pɪŋ] 'above' is a cognate of *gah pɛŋ* from Rengao. The Malay and Thai borrowings that are realized with prestopped nasal finals are all simple nasal finals originally, e.g., [pi'ŋabm] 'to borrow', Malay *pinjam* and [si'ɛbm] 'Siam', Thai [səjam].

These prestopped nasals have been analyzed here as allophones of the voiced stops for the sake of efficiency. Since the voiced stops only occur syllable initial and the prestopped nasals only occur syllable final and are in contrast with the simple nasal phonemes, it seems most phonologically economical to analyze the prestopped nasals as allophones of the voiced stops. Otherwise, an additional four phonemes /bm, dn, ɟn, gŋ/ would have to be posited to account for the contrast between nasals and prestopped nasals.

All four allophones contrast with the voiceless stops and the simple nasals, although minimal pairs are difficult to find.

[ka.tap ke.ʔwʔ]	'to stutter'	[gə.ʔuc]	'to wrap up in'
[tabm kebm]	'molars'	[bal.ʔuɟ]	'green'
[kan.tam]	'crab'	[ʔõŋ]	'to smell'
[jat]	'mucus'	[pak]	'to slap'
[han.jadn]	'to stand'	[pa.pagn]	'wild cat'
[be.jan]	'mushroom (type)'	[paŋ]	'to run'

Further examples of /b, d, ʝ, ɣ/ in final position are: [nam.dɪbm] *namdɪb* 'cliff overhang', [ba.juɪbm] *bajuɪb* 'to be bad', [cɔbm ʔɔs] *cɔb ʔɔs* 'to ignite fire', [kʷs.siedn] *kwussied* 'to suspect', [ta.puɪdn] *tapuɪd* 'male shaman', [cadn] *cad* 'foot', [baʎ.ʔuɲ] *balʔuɲ* 'green', [bi.ɲ.wogn] *biɲwɔd* 'to lie', [kɛpɪɲ] *kɛpɪɲ* 'above', [ʔan.tuɲ] *ʔantug* 'to be afraid', [wagn] *wɔɲ* 'child'.

1.2.2 Consonant contrasts

	p	t	c	k	ʔ
C-	lom.pat 'to jump'	bʌ.tat 'powder'	cʷt 'to adorn'	kat 'to scratch'	ʔat 'spear'
-C	ʔi.sap 'inhale'	sat 'dry'	sac 'tuber'	tʌk.tak 'EXCLAMATIVE'	bɛ.saʔ 'used to'

	b	d	ʝ	ɣ
C-	bap 'lizard'	sə.dep 'delicious'	pə.ʝɛp 'to store s.t.'	gec ta.pɔk 'to slit throat'
-C	ca.jub 'needle'	bi.jud 'to cover with'	bal.ʔuɲ 'green'	ɲug 'to bump head'

	p	b	m
C-	tam.pet sa.jɔ 'vegetable garden'	hu.bet 'medicine'	ʔɛ.met 'tiger'
-C	ɲāp 'bright'	pi.ɲāb 'to borrow'	ɲam 'six'

	t	b	n
C-	la.taʔ 'waterfall'	lə.daʔ 'armpit'	ha.naʔ 'to want'
-C	jat. 'locust type insect'	kə.bəʔ jad 'type of fruit'	bə.jān 'to itch'

	c	ʝ	ɲ
C-	ha.caʔ 'to lean'	ɲi.ɲaʔ 'mud'	haj.ɲāʔ 'to be lean'
-C	gə.ʔuc 'to wrap up'	bal.ʔuɲ 'green'	tə.hɔɲ 'red'

	k	g	ŋ
C-	si.kat 'comb'	gãt 'to swim'	hic.ŋat 'angry'
-C	pak 'to clap'	pa.pag 'wild cat'	paŋ 'to run'

	m	n	ɲ	ŋ
C-	sa.mɔt 'to catch'	ja.nɔt 'type of lizard'	ɲat.ɲot 'pulse'	laŋ.ŋot 'bend of knee'
-C	ka.nɔm 'urine'	ʔa.hũn 'hiccup'	tə.hɔŋ 'red'	pa.hɔŋ 'hole'

	∅	s	ʏ	h
C-	—	ka.saʔ 'type of deer'	pə.la.ʏaʔ 'groom's company'	mus.ta.haʔ 'important'
-C	bə.le∅ 'to exit'	pu.lesjuŋ 'diarrhea'	—	ba.leh 'to dress'

	l	n
C-	pu.lag 'to cover head'	pi.nag 'waist'
-C	pa.ʔul 'tortoise'	ʔun 'locative'

	ɭ	l	ʏ
C-	sa.ka.ɭaʔ 'rubber waste'	ka.laʔ 'type of tree'	pə.la.ʏaʔ 'groom's company'
-C	baɭ.kaw 'north'	baɭ.tɛk 'black'	—

	w	j	ɭ
C-	wap 'to choke'	ti.jap 'every time'	si.ɭap 'concentrated liquid'
-C	daw 'type of potato'	daj 'from'	(No analagous example)

	ʔ	h	#
C-	bə.ʔut 'good'	hʉt 'scared'	—
-C	bɛ.saʔ 'used to'	bə.sah 'itchy'	sa 'to descend'

2. Suprasegmentals

2.1 Stress

Kensiw has fixed, non-contrastive primary, stress which falls on the final syllable of a lexeme. In addition, minor syllables may be either completely unstressed or secondarily stressed, depending on the presence of reduplication. The normal, unmarked case would be completely unstressed. In this case, no reduplication has taken place. The less frequent, marked case occurs when the final syllable is copied, producing an initial syllable that bears secondary stress. Preliminary acoustical analysis was carried out by Dr. Apiluck Tumtavitikul of Rangsit University. She found that the first syllable of a reduplicated word has secondary stress, while the last syllable receives primary stress in citation form, reducing to an unstressed-stressed pattern in casual speech. Yet, even "unstressed" syllables in "casual speech" are perceived as more emphatic than the normative, unmarked minor syllables. Examples of unmarked minor syllables in comparison to reduplicated minor syllables include [bʌt.ʔet] *bʌtʔet* 'pretty', [gʌt.gut] *gʌtgut* 'to tremble', [ha.'luɸ] *haluɸ* 'to blow blowgun', [l̩ɸ.'l̩ɸ] *l̩ɸl̩ɸ* 'to be pliable', [kan.'kwɔn] *kankwɔn* 'to throb', [sʌdn.'sɔn] *sʌdsɔn* 'gums'. In any event, the application of stress is completely predictable and, while acoustically differing, stress is not contrastive in Kensiw.

2.2 Tone

Kensiw is not a tonal language, but there is a very small number of pairs of lexemes that contrast only on the basis of a pitch difference. One member of each of these pairs has what could be called normal (mid-level) pitch while the other member has a high level pitch. This pitch difference correlates with a change in meaning. At the moment, however, there is such a small number of such contrasts that it seems premature to assign any general significance to pitch in Kensiw.

gūj	'language'	gúj	'head'
kec	'to be stuck'	kéc	'to cut'
kāp	'to bite'	káp	'deaf and mute'

In addition to these pairs, there are a couple of other lexemes that are spoken with the high pitch, but for which no contrasting mid-level pitch lexeme has yet been found. Whether these examples reflect some kind of tonogenetic effect or are simply a result of contact with Thai with no systematic change taking place is difficult to ascertain. Native speakers themselves are aware of this pitch distinction, but have difficulty generating a list of contrasting pairs for further evaluation.

Jerold Edmondson conducted acoustical instrumental analysis of a selected corpus of Kensiw data in 1992. Among his findings was the definitive pitch

distinction between these pairs of words. Chart 3 below graphs the pitch contrast found between *gúj* 'head' and *gūj* 'language'. The chart is a composite of the mean of four repetitions.

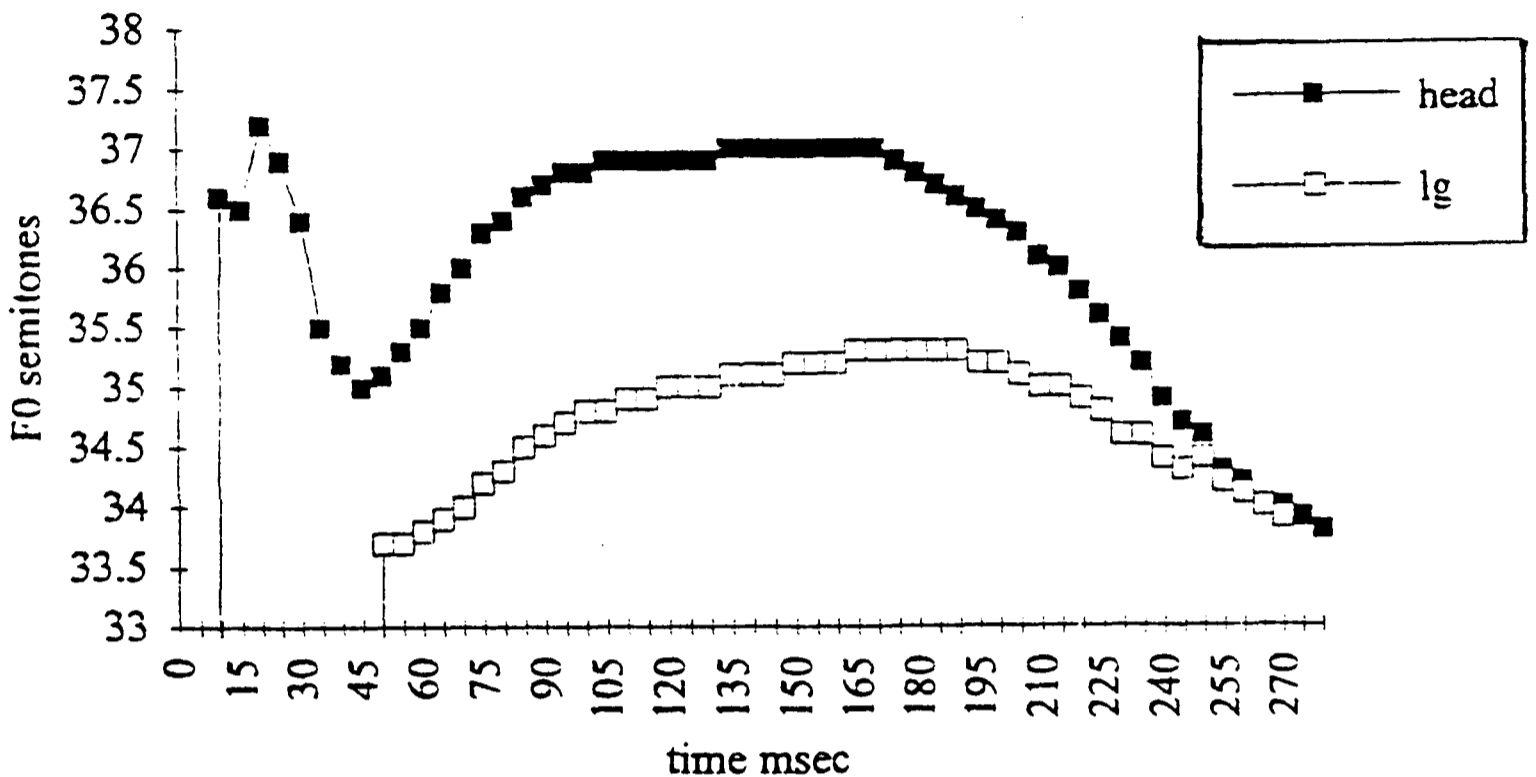


Chart 3. Kensiw pitch contrast

gúj 'head' goes from 34.7 up to 37.3 semitones and back down to 33.8 semitones, while *gūj* 'language' goes from 33.8 to 35.2 semitones and back down to 33.8 semitones. There is only a 2.1 semitone difference between the two words at their peak pitch. Edmondson notes (personal communication) that usually Asian languages have a minimum difference of 3 semitones, making the Kensiw distinction very slight. In addition to this very minimal pitch distinction, there was some evidence that the initial consonant in this pair of words differed in terms of being fortis and lenis. In Chart 3 a slight hook or the raised F0 in the graph for *gúj* 'head' indicates a slight voiced fortis onset, which suggests that in addition to a pitch contrast, there may also be a three-way contrast in initial consonants of lenis and fortis voiceless and voiced consonants. While there is some objective and subjective evidence for this argument, further research is needed to confirm or disprove it.

2.3 Nasality

As mentioned in Section 0 and 1.1, nasality is a suprasegmental feature of Kensiw vowels. There is a set of 13 nasal vowels which have been described in Section 1.1 and exemplified in Appendix 1.

3. Word and syllable structure

3.1 Word and syllable patterns

Typically, Mon-Khmer languages may have three types of syllables:

Major syllables with a full inventory of vowels and initial and final consonants. They may occur as monosyllabic words or as the final syllable of disyllabic words, i.e., 'CVC, 'CCVC, CV.'CVC, 'CV.CVC.

Minor syllables with either a limited inventory of possible epenthetic vowels occurring medially in an initial consonant cluster or a broader inventory of vowels, but fixed final syllable stress, i.e., CV.'CVC or CV2.CV1C where V2 = [e, a, u, or i] and V1 is essentially unrestricted. Minor syllables occur only as non-final syllables. In Kensiw, they can also have the syllable pattern of CVC.'CV(C).

Presyllables which have either an epenthetic schwa or a slightly larger inventory of vowels, e.g. [ə, u, i], disrupting an initial consonant cluster. Schwa [ə] presyllables vary with consonant clusters, C^əCVC ~ CCVC, in some forms. Presyllables occur only as pre-final syllables in disyllabic words.

Kensiw appears to have all three of the above types of syllables, but with the added features of tri- and tetra-syllabic words and with fixed stress in multisyllabic words. Kensiw words must have a minimum of one stressed syllable consisting of C3V minimally and C3C2VC1 maximally (see Section 3.2). Two, three and even four syllable words occur. However, the three and four syllable words appear to be largely Malay borrowings.

SYLLABLE PATTERN	EXAMPLE		COMMENTS
'CV	'sa	'to descend'	
'CCV	'k ^h wa	'to pinch bits'	(sole example)
Cə'CV	gə'li si'ʔəh	'to whisper'	
CV'CV	kɛ'cɛ	'to dance'	
'CVC	'sɔp	'lungs'	
'CCVC	'kɪɛh	'matches'	
CV'CVC	ʔa'nek	'child'	(Malay)
CVC'CV	sam'pɛ	'to have a cold'	
CVC'CVC	tam'kal	'man'	
CVC'CCVC	pɔt'plit	'to blink rapidly'	(redup.)
CCV'CV	bla'cɛ	'to study'	
CCV'CVC	kla'diʔ	'edible tuber'	
Cə.CV'CV	pə.li'ta	'lamp oil'	(Malay)
CV.CV'CV	sa.lu'mɛ	'shaving'	
CV.CV'CVC	sɔ.nɛ'lap	'shoulders'	
CV.CVC'CV	sa.man'tɛ	'a while ago'	
CV.CVC'CVC	kə.laŋ'pɛs	'heart'	
CVC.CV'CV	bən.na'ma	'full, complete'	
CVC.CV'CVC	mus.ta'haʔ	'important'	(Malay)
CVC.CVC'CVC	ʔan.ʔan'tuʔ	'groceries'	(Malay)
CCV.CV'CVC	pɪa.sa'ʔad	'feelings'	(Malay)
CV.CV.CV'CVC	ʔə.la.ka'pal	'large'	(?Malay)

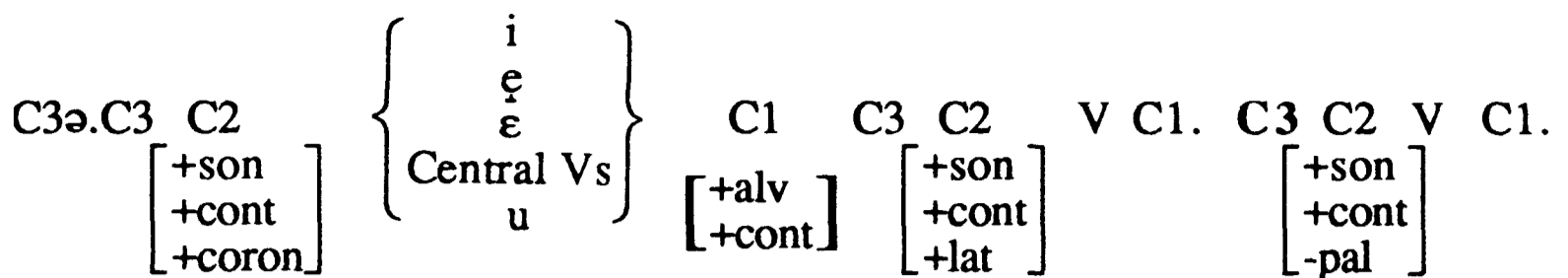
3.2 Syllable constituents

In a single syllable word, C3 position can be filled by all consonants except /ϕ/, which only occurs word final. C2 position can only be filled by /ɹ, l, w/ in major syllables and by /ɹ, l/ in minor or presyllables. When C3 and C2 co-occur, C3 becomes restricted to /p, t, k, b, g, m, s, h, l/. When C2 is realized as /w/, it would appear that it occurs most commonly with a velar stop or a bilabial nasal in the C3 position, e.g. *k^hwa* 'to pinch off', *gwah* 'curry sauce', *mwɔc* 'to keep eating', *hi'mwã?* 'PRONOUN1P'. There is very little restriction on the vowels that can occur in monosyllabic words. /e, a/ are found in combination with virtually all initial consonants and most final ones. /ɪ, ə, ə, ʌ/ and /o/ are the most highly restricted oral monophthongs. Most nasal vowels can co-occur with a final /t/. /t, ɲ/ are the most commonly occurring initials found with nasal vowels (see Section 1.1.1 for further details on the restricted distribution of vowels). C1 position can be filled by all consonants, with one exception and two obligatory conditions. The one exception is if the vowel is either a diphthong or nasal, excluding /ẽ, ɨ, ẽ/, C1 cannot be filled by a central approximant. One obligatory condition on C1 is that if C1 = /b, d, ʒ, g/, then the prestopped nasal allophones must occur. The second condition is if C1 = /ɹ/, the syllable must be unstressed; /ɹ/ does not occur syllable final in stressed syllables.

In the first syllable of disyllabic words, C3 position remains the same as that in single syllables. C2 position can only be realized by /l, ɹ/. Vowels found in the present corpus in the first syllable of a disyllabic word were the following: /i, ɨ, ɪ, ɨ, ɛ, e, ε, ʊ, ə, ə, ʌ, ɨ, a, ẽ, u, o, ɔ, ɔ̃/, /w/ and /o/ occurring rarely. C1 position restricts some consonants and allows one phoneme not found word final. The fricatives /ϕ, s, h/ in C1 are confined to cases of reduplication and are relatively infrequent. The retroflexed approximant /ɹ/ occurs twice as C1 in 2,000 lexical items. Otherwise, all other consonants can fill C1 position. Nasal stops commonly fill the first syllable final position in disyllabic words. As mentioned in Section 1.1, prestopped nasals usually occur in the C1 position of the first syllable of a disyllabic word only if reduplicated.

Trisyllabic and tetrasyllabic words are further restricted in what can occur in the first syllable (trisyllabic) and the first and second syllables (tetrasyllabic). The initial consonant is possibly unrestricted, but for this corpus, /ɲ, ɳ, ʒ, w/ did not occur. The vowels found in the first syllable are restricted to /i, ɛ, ε, ẽ, ʊ, ə, ə, ʌ, a, u/ in trisyllabic words and to /ə/ in the tetrasyllabic words (of which there are only two). Most frequently the first two syllables of a tetrasyllabic word or the first syllable of a trisyllabic word have an open syllable, but they can have either /n/ or /s/ final in the initial syllable of a trisyllabic word.

An approximation of the possible syllable structures in Kensiw and its constituents may be written as follows:



Where C3 and V are obligatory and:

C3 = all consonant phonemes except / ϕ /

V = all vowels, except as restricted above and no diphthongs in unstressed syllables

C1 = all consonant phonemes, except as restricted above (diphthong and nasal V's cannot co-occur with central approximants; if /b, d, j, g/, then [bm, dn, ʝn, gŋ]; if /ɹ/, then unstressed syllable.)

3.3 Reduplication

Reduplication in Kensiw is a relatively productive process, and as mentioned in Section 2.1 it impacts the syllable structure. Reduplicated lexemes generally have the syllable structure CVC.CVC, e.g. [sɔk.swɔk] *sɔkswɔk* 'to grab', [kʰiɸ.ʔiɸ] *kʰiɸʔiɸ* 'to be fussy', [sɔdn.sidn] *sɔdsid* 'gums'. In addition, occasional initial consonant clusters may be found in the second syllable, but not in the first, e.g. [pɔt.plit] *pɔtplit* 'to blink quickly, repeatedly'. There are essentially three productive means of reduplication in Kensiw:

1. identical consonants, changed vowel ($V_{-\alpha} \sim V_{\alpha}$)

$C_{\beta}V_{-\alpha} C_{\alpha}.C_{\beta}V_{\alpha}C_{\alpha}$

2. identical final consonant and vowel, changed initial consonant ($C_{-\beta} \sim C_{\beta}$)

$C_{-\beta}V_{\alpha}C_{\alpha}.C_{\beta}V_{\alpha}C_{\alpha}$

3. identical final consonant, changed initial consonant and vowel ($C_{-\beta}V_{-\alpha} \sim C_{\beta}V_{\alpha}$)

$C_{-\beta}V_{-\alpha}C_{\alpha}.C_{\beta}V_{\alpha}V_{\alpha}$

All three strategies copy the base morpheme, with the first syllable as the newly created bound morpheme and the second syllable as the base. The first strategy appears to be the most productive, with the least restrictions on possible constituents. Within this pattern there is a preference for the vowel / Λ / in the copied syllable (first syllable). $V_{-\alpha}$ can, however, also include /w, a, ∂ / or /i/, which are all front or central vowels; the motivation for the choice of / Λ / over the others is not yet understood. A general constraint on $V_{-\alpha}$ appears to be that $V_{-\alpha}$ must differ with V_{α} as to tongue height or position. V_{α} appears to be unrestricted, though not every vowel has been encountered. Examples include: [d Λ Λ .du Λ] *d Λ du Λ* 'heel', [lɔt.lwɔt] *lɔtlwɔt* 'to raise and lower eyebrows', [pɔk.pɔk] *pɔkpɔk* 'to clap, slap', [tɔʔ.tuɨʔ] *tɔʔtuɨʔ* 'to crash', [k ∂ ʔ.k ∂ ʔ] *k ∂ ʔk ∂ ʔ* 'to be unable', [nɔŋ.nɨŋ] *nɔŋnɨŋ* 'bird's tail movement'.

The second strategy copies the final consonant and the vowel of the base identically, but changes the initial consonant of the reduplicative prefixal morpheme. The number of examples is limited, but it appears that the base syllable C_{β} can be a stop, fricative or lateral approximant, while the reduplicative syllable $C_{-\beta}$ requires either a stop or a fricative. There is no apparent requirement of shared features of voicing, point of articulation or manner. As with the vowels in the first

strategy, C-β cannot be identical to Cβ. Examples are: [ʔek.sek] *ʔeksek* 'to choke, cough', [kī̄ϕ.ʔī̄ϕ] *kī̄ϕʔī̄ϕ* 'to groan', [pɛŋlɛŋ] *pɛŋlɛŋ* 'a point', [beλ.keλ] *belkel* 'to be striped'.

The third reduplicative strategy results in only the final consonant being copied from the base, while the initial consonant and the vowel change. Examples of this pattern are even more infrequent than the second strategy, so that little can be stated conclusively. Examples include: [sap.ʔãp] *sapʔãp* 'men's sarong', [kɪp.lĩp] *kɪpĩp* 'to wink'. Determination of whether the lexeme has been reduplicated or not is partly made on the basis of the meaning; generally speaking, reduplication in Kensiw has a semantic component of repetition or is onomatopoeic in nature.

Dr. Apiluck Tumtavitikul conducted acoustical analysis on a very limited sample of recorded reduplicated lexemes. The lexemes were elicited in isolation resulting in a citation pronunciation. Based on her findings, Dr. Apiluck suggests an alternate analysis revolving around the copied vowel. She posits three reduplication templates as well:

1. Identical vowel with either identical initial consonants or dissimilar initials:

$$V_1 = V_2$$

$$\#C_1 = \#C_2 \text{ or } \#C_1 \neq \#C_2$$

Examples include: [jɛ.jɛ] *jɛjɛ* 'to tell a story', [pɛ.pɛ] *pɛpɛ* 'to shake or flick hands', [kī̄ϕ.ʔī̄ϕ] *kī̄ϕʔī̄ϕ* 'to groan', [beλ.keλ] *belkel* 'to be striped', [haλ.haλ.lɔw] *halhallɔw* 'what's the problem'.

2. The copied vowel is realized as [ʌ].

$$V_1 = [ʌ]$$

Examples include: [ŋap.ŋap] *nɔpŋap* 'to chew', [gɔt.gut] *gɔtgut* 'to move back and forth unvoluntarily', [sɔdn.sidn] *sɔdsid* 'gums', [kɔ̄t.kɔ̄t] *kɔ̄tkɔ̄t* 'to lay eggs', [ʔac.ʔec] *ʔacʔec* 'to be boiling'.

3. Dissimilar copied vowel with either identical initial consonants or dissimilar initials.

$$V_1 \neq V_2$$

$$\#C_1 = \#C_2 \text{ or } \#C_1 \neq \#C_2$$

Examples include: [tuw.tāh] *tuwtāh* 'to stomp', [naŋ.niŋ] *naŋniŋ* 'bird's tail movement', [ɟɪdn.jɛdn] *ɟɪdjɛd* 'ring', [paŋ.pɛŋ] *paŋpɛŋ* 'beard', [ɲã.ɲĩ] *ɲãɲĩ* 'to shake the head no', [hih.puw] *hihpuw* 'to moan/groan'.

In both analyses there is an inherent weakness in that the third strategy or template is difficult to apply to a given lexeme and be assured of correctly identifying a reduplicated form. In both propositions, the rules would appear to allow for two syllable words which are not likely to be reduplicated forms, e.g.

[lɔp.sɪp] *lɔpsɪp* 'noisy', [bik.lok] *biklok* 'not pretty'. Further research is needed to clarify this third case of reduplicated forms.

Other general observations regarding reduplication include a high incidence of nasal vowels and of final /ɸ/ in these forms. In some cases the nasality is onomatopoeic, but in others it is not obvious if there is any motivation. Sometimes the nasality is copied, at other times it is not, e.g. [sãksõk] *sãksõk* 'to suck', [kãtkõt] *kãtkõt* 'to lay eggs', [cɔʔ.cõʔ] *cɔʔ.cõʔ* 'disciplinary click', [lɔɸ.lũɸ] *lɔɸ.lũɸ* 'to be swollen'. The same may be said of the bilabial fricative. Sometimes it is clearly imitating a sound, while other examples seem to have no relation to sound, e.g. [kĩɸ.ɳĩɸ] *kĩɸ.ɳĩɸ* 'to be fussy', [lɔɸ.lũɸ] *lɔɸ.lũɸ* 'to be swollen'.

4. Conclusion

While further analysis is needed to confirm some of the features of Kensiw phonology as postulated above, this paper provides an introduction to the basic sound system of the Yala Province dialect. Kensiw appears to not only have typical Mon-Khmer features, but also some atypical of that language family, for example, multisyllabic lexemes, a number of fricatives, minor syllables with final consonants. Contact with Malay, as well as Thai, is likely to account for much of these anomalies. As the corpus of the data increases and further acoustical research is carried out, the status of this paper's findings will be validated.

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Appendix 1. Oral and Nasal Vowel Contrasts

	NASAL	ORAL	
'jerk away, to'	pɛ.pĩ	na.bi	'blood pressure'
'dump'	si.sẽ	?a.lu.ɣɛ	'back, waist pain'
'forbid, to (exclam)'	'hã	ha	'small path'
'dandruff'	kə.ɲ mō.mō	mɔ ?al.sal	'ancestors'
'age'	?o.mõ	pə.mə	'doctor' (Thai)
'wink, to'	kĩp.lĩp	lɔp.sɪp	'noisy'
'thatch roof'	ha.tẽp	pə.jɛp	'store s.t., to'
'correct'	?ãp	kəp	'bite, to'
'bright'	ɲãp	sɔ.ɲap	'quiet'
'bear'	ka.wãp	ɲə.wap	'answer, to'
'angry'	kan.jãp	sa.jap	'wing'
'smelly'	hã.?ĩt	la.ɲit	'sky'
'cumin'	ku.jĩt	la.ɲit	'sky'
'extract, to'	ɲə.pẽt	ka.nɛ.pet	'CLASSIFIER'
'miss s.o., to'	?i.ɲẽt	ba.jɛt	'rhinoceros'
'short'	ɲan.hẽt	gə.hɛt	'sweet'
'lower lip'	tɔ.nũt	ɲu.hut	'inflammation'
'swim, to'	gãt	gɔt.gut	'involuntary movement'
'spoiled'	pɛ.?ãt	?at	'spear'
'peel, to'	sãt	sat	'dry'
'throat'	?a.ɲũt	hɛ.kut	'night'
'sniff, to'	sɔt.sɪɔt	pa.ɪɔt	'scar'
'lay eggs, to'	kãt.kõt	ɲt	'suck, to'
'tap a tree, to'	wãc	?a.pɔŋ wac	'ring-eyed monkey'
'scrape, to'	kal.twɔc	ɲɛl.tɔc	'too short'
'tickle, to'	?i.gɔc	?i.kɔc	'follow, to'
'tickle, to'	?i.gɔc	joc	'leopard'
'gluttony'	mwɔc	ɲanɔc	'nape of neck'
'ascend, to'	lɔk.cɛk	pi.jek	'LATERAL CLICK'
'rubber'	kə.tɛk	ka.dek	'bitter'
'plant, a'	tə.wɛk	?a.wɛk dal	'rice spoon'
'mud'	la.pãk	?a.pak	'bamboo strip'
'butterfly'	wãk	ta.wak	'cloth sling'
'lie, to'	ɲk.ɲɔk	ɲɔk	'pinch, to'
'suck out, to'	sãk.sɔk	sok	'hair'
'suck out, to'	sãk.sɔk	si.lɔk	'cover head, to'
'spit betel juice, to'	pa.tĩ?	di?	'do, to'
'toy revolver'	kẽ.lɛ.wẽ?	wɛ?	'have, to'
'leftside'	ɲɛ?	ɲa.ɲɛ?	'parasititis'
'crash, to'	ta?.tuĩ?	?an.?an.tuĩ?	'groceries'
'lean-to, a'	haj.ɲã?	taɲ.ɲa?	'stair'
'turtle'	?ã.wã?	du.wa?	'two'
'garden snail'	tũ?	ba.tu?	'stone'
'squirrel'	la.tɔ?	tɔ?	'elder sibling'
'discipline, to'	ca?.cõ?	?a.co?	'small'
'freshwater snail'	ka.lõ?	ka.lɔ?	'type of tree'
'spit, to'	tĩɸ	?ɛɸ	'blow with fist, to'
'swollen'	lɔɸ.lũɸ	ɲə.ɲuɸ	'sound of jumping'

Appendix 1. Continued

'swollen'	la.ɸ.lũɸ	ha.luɸ	'blow, to'
'stubbed toe'	jan.gĩs	?is	'land snail'
'softshell turtle'	pa.wĩs	ga.bis	'die, to'
'hate, to'	ma.lěs	pu.les	'wring, to'
'sour'	pə.jās	cas	'hand'
'rest, to'	pa.gũs	nus	'mat'
'beetle'	kuĩs	?ɛ.bus	'drag, to'
'younger sibling'	?ās	tas	'whittle, to'
'navel'	lūs	di.jus	'water, to'
'bite, a'	jūs	di.jus	'water, to'
'fall, to'	hōs	hwɔs	'missing tooth'
'thick'	gal.pĩh	ka.mih	'Thursday'
'sprained, to be'	?a.wěh	ga.weh	'assist, to'
'temper tantrum'	tuh.tāh	?an.tah	'grain of rice'
'defecate, to'	?an.jāh	ga.jah	'elephant'
'pound, to partially'	jis.kūh	ku.kuh	'steam, to'
'press down, to'	ta.kōh	tə.kōh	'hard'
'PRONOUN 2s'	mōh	ləŋ.ŋoh	'tired'
'expensive'	mə.hěl	yel	'rainy'
'expensive'	mə.hěl	sel	'insert, to'
'slow loris'	tam.běl	pəl	'pestle'
'excelsior'	sapōl	sib.pōl	'tie by twisting, to'
'iliac crest'	ca.nōl	ma.nōl	'birth control'
'hungry'	hōl	həl	'blind'
'itch, to'	bə.jān	jaŋ	'paternal grandmother'
'itch, to'	bə.jān	?a.wan	'light'
'hiccup'	?a.hūn	ti.mun	'cucumber'
'black wasp'	tə.mɛ.lĩŋ	ha.niŋ	'litchi'
'black wasp'	tə.mɛ.lĩŋ	bə.liŋ	'upper arm'
'black hawk'	ka.lāŋ	ka.ɬaŋ	'cystitis'
'spider'	təŋ.tūŋ	ti.mun	'melon'
'engraving'	ka.jōŋ	ta.sōŋ	'deity'
'sleep curled up, to'	kal.tɛw	pu.tɛw	'shaman'
'large bat'	sāw	saw	'not want, to'
'COMMAND'	pěj	ja.běj	'spicy sauce'
'MARKER'			
'e.sibling spouse'	la.měj	gə.měj	'diligent'
'e.sibl. children'	něj	pa.něj	'skillful'
'all, inclusive'	sɔd.mwā?	ha.pwa?	'PRONOUN 1p'
'vomit, to'	jan.pĩě?	jan.?ie?	'lean-to poles'

Appendix 2. Phonetic realizations of close-mid, mid, open-mid front vowel contrasts

e		e		ɛ	
pi'kɛ	'to think'	—	—	tu'kɛ	'to change clothes'
ku'tɛp	'to pick up'	ʔan'tɛp	'scrotum'	pə'jɛp	'to store'
mʌn'kɛt	'bad'	'gɛt	'to slit'	ʔi'kɛt	'to tie'
		sə'wɛt	'to fall'	'wɛt	'palm print'
'pɛdn	'to shoot'	la'bedn	'sleepy'	sə'bɛdn	'numbness'
'wɛdn	'knife'	ja'wɛdn	'teacup'	ka'wɛdn	'friend'
ʔɛc	'feces'	ʔʌcʔɛc	'to be boiling'	—	—
'pɛc	'to split'	ka'mɛc	'to bury'	—	—
ham'pɛk	'to be stuck to'	'pɛk	'to chop'	—	—
'jɛk	'to stab'	pi'jɛk	'sound made when clearing mouth'	—	—
'wɛk	'to return'	—	—	ʔa'wɛk	'spoon'
ʔən'tɛŋ	'ear'	—	—	bɪn'tɛŋ	'star'
hɪŋ'lɛŋ	'to sing'	laʔ'lɛŋ	'vegetable'	ba'lɛŋ	'to throw'
'jɛŋ	'palm tree'	ʔi'jɛŋ	'bone'	sa'jɛŋ	'to love'
la.ka'cɛŋ	'to scold'	ʔi'kɛŋ	'green frog'	pɔ'cɛŋ	'area behind ear'
ha'pɛʔ	'backpack basket'	—	—	gɔ'be	'betel nut mortar'
jɛʔ	'louse'	'jeʔ	'PRONOUN 1 ps INTIMATE'	—	—
'wɛʔ	'to have'	kɛ.le 'wɛʔ	'toy revolver'	'wɛʔ	'to cry'
lʌs'bɛs	'to smell good'	tə.na'pɛs	'sieve'	—	—
hi'ʔɛs	'to cut into pieces'	ʔa'kɛs	'mosquito'	bə.ja'kɛs	'adult'
'lɛʃ	ASPECT: before	pu'lɛʃ	'to wring out'	—	—
tu'dɛh	'this'	—	—	tə'dɛh	'near'
si'ʔɛh	'betel nut leaf'	—	—	bʌ.ki'ʔɛh	'grey'
bu'lɛh	'to be able'	bə'lɛh	'to put on clothing'	—	—
ji'wɛh	'to come up'	ga'wɛh	'to help look'	ʔa'wɛh	'to limp'
kʌn'jɛh	'wife'	—	—	ki'jɛh	'to scratch'
—	—	'pɛʌ	'to put in'	'pɛʌ	'pestle'
—	—	ta'nɛm	'to plant'	ka'ʔɛm	'to clear the throat'
ka.mi'jɛŋ	'upper ankle'	ʔɛŋ	'to sleep'	jan'jɛŋ	'eyebrow'
bu'tɛw	'water'	—	—	pan'tɛw	'to see at a distance'
—	—	bə'lɛɸ	'to come out'	ba'lɛw	'to demand'
ʔʌn'tɛj	'to wait'	—	—	jan'tɛj	'metal band'
pa'neɪ	'skillful'	na'neɪ	'termite'	—	—
'jeɪ	'fly'	—	—	ʔi'jeɪ	'smoke'

Appendix 2. Phonetic realizations of close-mid, mid, open-mid central vowel contrasts.

Stressed Syllable					
ə		ə		ʌ	
kʌn'kə-dn	'badly infected wound'	—	—	'gʌt	'to swim'
'jə-h	'to trim'	'təh	'to be bald'	—	—

Unstressed Syllable					
ə		ə		ʌ	
pə'jɛp	'to store things'	bə'ʔuʔ	'good'	pʌ'dɛp	'to look for'
pə'lɛʔ	'surprising'	pə'luʔ	'to see someone'	—	—
pə.la'ʔaʔ	'groom's party'	pə.li'kaʔ	'to keep, store'	—	—
—	—	pə'nagn	'field'	pʌ'nɔgn	'lean-to bed'
—	—	pə'nagn	'field'	pʌ'niŋ'gúj	'to be dizzy'
bə'jaʔ	'still, NEG'	pə'juʔ	'diarrhea'	pʌ'jɛc	'to be funny'
pə'sɛh	'clean'	bə'sah	'to be itchy'	bʌ'sɛp	'to be smell'
bə'jʌn	'to itch'	pə'juh	'to chase away'	pʌnas	'to hurt'
—	—	tə'ŋah	'middle'	tʌnʊft	'lower lip'
tə.me'fɪŋ	'black wasp'	tə.na'pes	'sieve'	—	—
cə.la'wat	'pimple'	jə.na'wat	'uterus'	—	—
—	—	jə'hwt	'to sting'	jʌn'het	'young, short'
jə'paʔ	'mountain'	jə'pɛt	'to squeeze, extract'	—	—
jə'pɛs	'sick'	jə'pɛt	'to squeeze extract'	—	—
kə.la'mu	'mosquito net'	gə.la'puʔ	'to have poor eyesight'	—	—
kə.la'mu	'mosquito net'	kə.lu'kɔ	'Malaysian orange'	—	—
jə'nuh	'many'	jə'nɔgn	'stream'	—	—
kə'cɔj	'ginger'	kə'jaj	'creeping vine'	kʌ'ciɛʔ	'moon'
gə'ma	'to feel feverish'	gə'mɛj	'to be diligent'	—	—

Unstressed Syllable		ə		ʌ	
gə'sēk	'to be achy'	kə'tēk	'rubber'	—	—
—	—	ʔən'tegŋ	'ear'	ʔʌn'tej	'to wait'
sə-ɣa'tos	'100'	sə.na'caʔ	'ordinary'	sʌ.nɛ'lap	'shoulders'
—	—	sə'tɔʔ	'to decide against s.t.'	sʌ'tɔʔ	'slingshot'
hə-ja'kɔt	'5-6 a.m.'	hə'negŋ	'to make a hole'	hʌ'ɲec	'to fell cold'
—	—	mə'nɪŋŋ	'louse'	mʌn'ciʔ	'to be far'
—	—	tɪ'mun mə.lɪgej	'water melon'	mʌ.na'juh	'to shiver'
—	—	lə'gm	'self'	lʌ'kiebm	'brain'

Appendix 2. Phonetic realizations of close-mid, mid, open-mid back vowel contrasts

ø		o		ɔ	
'sɔ	'at all, very'	—	—	'sɔ	'to plane'
'dɔp	'to push'	—	—	'i'kɔp	'snake'
'tɔbm	'tree trunk'	'cɔbm		'cɔbm	'to start a fire'
'jɔt	'to poke'	—	—	'jɔt	'to suck'
—	—	ɲat'ɲot	'pulse'	ɲɔ'ɲot	—
gi'jɔt	'to complain'	bə'jaʔjɔt	'to be physically unable'	—	—
pla'kɔdn	'program'	—	—	'ʔɔdn	'that'
du'sɔdn	'fruit garden'	biɲ'wɔdn	'to tell a lie'	bə'ja'dɔdn	'proper'
'lɔc	'penis'	—	—	'lɔc	'bow'
bi'dɔk	'to be old'	kok'tok	'to bang on another surface'	'dɔk	'dart poison'
'jɔk	'to pinch'	'jɔk	'upper lip'	'jɔk	'to inject'
si'lɔk	'to cover head'	bik'lɔk	'to not be pretty'	hɛ'lɔk	'skin'
'ɲɔk	'to walk continuously'	—	—	'ɲɔk	'to sit'
ja'bɔŋŋ	'roof'	—	—	ta'pɔŋŋ	'smoking pipe'
ta'tɔŋŋ	'to bump, stub foot'	ka'tɔŋŋ	'rat'	mɔn'tɔŋŋ	'rubber tapping knife'
ʒə'kɔŋŋ	'to carry on shoulder'	ta'ʔɔŋŋ	'longtail monkey'	'ʔɔŋŋ	'tiger'
la'hɔŋŋ	'larynx'	—	—	kaɿ'hɔŋŋ	'impression left by stone'
ʒə'lɔŋŋ	'a fly'	pə.na'lɔŋŋ	'rectum'	kə'lɔŋŋ	'path'
ta'bɔ	'to make a hole'	—	—	'bɔʔ	'PRONOUN 2s'
'tɔʔ	'older sibling'	—	—	sə'tɔʔ	'to decide against s.t.'
—	—	'a'coʔ	'few'	'ɲɔʔ	'to be named'
man'kɔʔ	'small bowl'	—	—	ma'kɔʔ	'egg'
'gɔʔ	'prison'	—	—	'gɔʔ	'charcoal making site'
sɿ'ʔsɔʔ	'nerve'	bɔ'hɔʔ	'to be satiated'	'sɔʔ	'to be rotten'
kə'lɔʔ	'coconut opened at the top'	—	—	ka'lɔʔ	'freshwater snail'

ta'jɔʔ	'termite hill'	ɔə'pes ti'jɔʔ	'a high fever'	ta'jɔʔ	'tiger'
ʔa'joh	'to not know'	tu'joh	'seven'	—	—
tə'koh	'hard'	han'koh	'to deliver'	—	—
'soh	'to pound'	kə'toh	'to fall down'	'soh	'to dispense'
pə.rə'joh	'to be unrelated'	bi'joh	'type of fruit'	—	—
ɔə'bɔʔ	'baby bottle'	—	—	'wɔʔ	'shoulder'
bɔ'tɔʔ	'to be straight'	ca'nɔʔ	'iliac crest'	ha'tɔʔ	'sandorica (plant)'
bi'sɔʔ	'a boil, abscess'	—	—	'met'hɔʔ	'to be blind'
ɔ		o		ɔ	
pi'ʔɔj	'to cause to remove s.t.'	—	—	hɛ'ʔɔj	'yellow'
kə'lɔj	'sound of s.o. calling'	—	—	ce'lɔj	'to ascend'
ʔa'nɔj	'to swing'	jədn'noj	'benevolent earthly spirit'	ce'lɔj	'to ascend'

**Appendix 3. The Distribution of Oral Vowels in Final Stressed Syllables
in Relation to Initial C's**

	i	ɪ	ɛ	e	ɛ	ʊ	ə	ə	ʌ	a	u	ɔ	o	ɔ	ie
p	4	6	9	5	8	11	1	0	0	28	8	9	2	4	0
b	4	3	6	5	7	4	2	0	0	10	11	10	0	2	0
t	12	1	13	5	9	4	2	1	0	25	8	20	6	6	0
d	6	3	3	5	4	2	0	0	0	23	5	2	1	4	0
c	1	1	3	2	2	4	1	0	0	10	1	0	1	3	0
ʃ	7	2	3	5	5	7	1	0	0	16	8	9	2	7	0
k	4	1	8	8	9	3	2	0	0	37	12	18	3	14	1
(k ^h)	0	0	0	0	0	0	0	0	0	2	0	2	0	1	0
g	3	3	3	2	1	2	0	0	0	7	2	5	1	3	0
ʔ	3	0	15	17	4	6	1	1	0	13	7	6	1	6	1
s	15	2	5	9	8	5	0	1	2	23	9	12	1	5	2
h	7	0	2	4	3	2	2	0	1	21	6	0	0	0	0
ʏ	0	0	1	5	0	0	0	0	0	6	0	0	0	0	0
m	4	3	1	12	3	4	0	0	0	24	7	5	1	2	0
n	7	4	3	4	1	2	0	0	1	17	5	12	0	5	0
ɲ	1	1	3	1	1	0	0	0	0	6	2	2	1	2	1
ŋ	0	0	0	2	0	0	0	0	0	9	0	3	2	1	0
l	25	4	11	22	13	10	0	1	0	35	9	12	5	7	2
ɭ	0	0	1	0	2	0	0	0	0	6	1	2	0	4	0
w	4	6	8	6	10	1	0	0	0	28	0	4	1	4	0
j	1	1	10	9	10	5	0	0	0	30	14	21	4	5	0
pl	1	0	0	0	0	0	0	0	0	2	0	0	0	0	0
pɭ	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
tɭ	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0
kɭ	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
(k ^h ɭ)	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
pw	0	0	0	0	0	0	0	0	0	2	0	2	0	2	0
bw	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
kw	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
(k ^h w)	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
gw	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
hw	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
lw	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0

**Appendix 3. The Distribution of Oral Vowels in Final Stressed Syllables
in Relation to Initial C's**

	i	ɪ	ɛ̃	e	ɛ	ʊ	ə̃	ə	ʌ	a	u	o	o	ɔ	ie	
11	0	6	1	18	0	0	1	0	48	19	19	1	7	0	#	
1	1	1	7	1	4	2	0	0	16	2	3	1	1	1	p	
0	2	0	8	2	3	1	0	0	10	2	4	1	3	1	b	
12	11	2	22	5	13	0	0	3	28	11	19	4	5	1	t	
1	4	5	16	9	3	1	0	0	18	9	8	3	2	1	d	
0	0	8	3	0	4	0	0	0	4	4	8	1	3	0	c	
0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	ʃ	
8	0	3	15	1	6	0	0	0	10	7	10	4	10	3	k	
14	13	9	11	17	13	0	0	0	42	6	26	4	11	0	g	
39	0	18	1	19	7	7	0	0	73	29	15	2	30	1	ʔ	
0	0	0	0	2	0	0	0	0	0	4	2	0	0	0	ϕ	
5	0	11	12	3	3	0	0	0	20	3	11	0	6	0	s	
4	1	10	7	12	9	1	3	1	48	7	13	11	4	0	h	
6	2	0	17	1	1	0	0	0	17	8	12	0	5	0	l	
1	0	0	2	1	2	0	0	0	5	0	0	0	2	0	m	
1	4	0	3	0	0	0	0	0	2	3	1	0	0	0	n	
0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	ɲ	
2	3	2	1	4	0	0	0	0	10	0	1	0	1	0	ŋ	
4	0	4	0	6	0	0	0	0	17	0	1	0	0	0	w	
0	0	29	1	2	5	0	0	0	16	0	8	0	5	0	j	