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1.1. Consonants

1.1.1. Chart

	bilabial	dental-alveolar	palatal	velar
voiceless plosive	π	τ		κ
voiced $\pi\lambda\sigma\tau\omega\epsilon$	β	δ		γ
voiceless fricative		σ		
nasal	m	n		N
lateral		λ		
approximant	ω		ψ	

1.1.2. Evidence

/p/ Bilabial voiceless unaspirated plosive
Occurs syllable initially and finally
(The final release of plosives goes through the nose.)

/puk/ [puk] ‘to break’

/pu/ [pu] ‘to tell’

/yap/ [yap] ‘house’

/b/ Bilabial voiced plosive
Occurs syllable initially only

/bu/ [bu] ‘water’

/nebut/ [nəm.'but] ‘story’

/m/ Bilabial nasal
Occurs syllable initially and finally

/miam/ [mi.'ʃoðmu] ‘many’

/mo/ [m□] ‘already’

/sruom/ [sru.'□m] ‘fork’

/w/ Bilabial approximant
Occurs syllable initially, finally.

/woy/ [w□ψ] ‘φιρεα

/wew/ [wew] ‘to make asleep’

/kebew/ [kə.'bew] ‘name of village’

/t/ Dental alveolar voiceless plosive

Occurs syllable initially and finally.

(The final release of plosives goes through the nose.)

/ten/	[tɛn]	‘food’
/tuet/	[tũ.'ɛt]	‘to dig’
/tet/	[tɛt]	‘worm’

/d/ Dental alveolar plosive

[d] Voiced alveolar flap

Occurs only following /s/ (In some dialects: variation /l/ [r])

/usede/	[u.sə.'de]	‘to dance’
/sedue/	[sə.'dö]	‘man’
/sedek/	[se.'dek]	‘to sleep’

Compare:

/usle/	[u.'sre]	‘to dance’
/slue/	[srö]	‘man’
/slek/	[srek]	‘to sleep’

[d] Voiced dental alveolar plosive

/don/	[dɒv]	ἄπονοερῶ
/deng/	[dɛŋ]	‘dry’
/dok/	[dɒk]	ἄπο τιῆ
/di/	[di]	‘tree’
/da/	[da]	‘times’
/duk/	[duk]	‘obey’

/s/ Dental-alveolar fricative

Occurs syllable initial

/sa/	[sa]	‘rain’
/sua/	[su.'a]	‘leave’
/iseng/	[i.'sɛŋ]	‘pain’
/suk/	[suk]	‘skin’
/sik/	[sik]	‘from’
/sak/	[s ɤ k]	‘dry’

/n/ Dental-alveolar nasal

[n] Occurs syllable initial and final

/nan/	[nan]	‘soil’
/namon/	[ˈna.mɒv]	ἄπονο
/nu/	[nu]	‘stomach’
/nim/	[nim]	‘calm down’

[n̩] syllabic dental alveolar nasal

/ndop/	[n̩.'dɒp]	‘smoke’
/ntrui/	[n̩.'trü]	‘to brush’
/ndruim/	[n̩.'drüm]	‘wrist’

/l/ Dental-alveolar lateral

[ɾ] Trilled syllabic vibrant

Occurs preceding retroflexed lateral

/ləlam/	[ɽ.ɭ ɸ m]	‘to play’
/ləlu/	[ɽ.ɭu]	‘to insist’
/ləlui/	[ɽ.ɭui]	‘to stir’
/ləlo/	[ɽ.ɭ ɭ]	əto moʔeə

[ɽ] Flapped vibrant

Occurs following dental alveolar plosives and fricatives /t,d,s/

/dlop/	[dr ɭ π]	əto ɸɽɪnɪkə
/tla/	[tra]	‘to suffer/ to call’
/sлом/	[sr ɭ μ]	əsoʔoʔlɛvə

[ɭ] Retroflexed lateral

Occurs following labial and velar plosives

/klaya/	[klæya]	‘one’
/blo/	[bl ɭ]	‘αβoʔeə
/ple/	[ple]	‘bow’

[ɭ] Flapped retroflexed voiced continuant

Occurs syllable initial

/luagit/	[lu.ʔa.ɡɭt]	‘leech’
/isuali/	[i.su.ʔa.li]	‘cassowary’
/lo/	[ɭ]	‘through’
/lek/	[lek]	‘washed away’
/la/	[la]	‘relief’

/y/ Palatal approximant

Occurs syllable initially and finally

/yap/	[yap]	‘house’
/woy/	[w ɭ ψ]	əsoʔvə

/k/ Velar voiceless plosive

Occurs syllable initially and finally.

The final release of plosives goes through the nose.

/ku/	[ku]	‘time/day’
/klak/	[kl ɸ k]	‘to raise’
/koy/	[k ɭ ψ]	əɸɪɾeə
/ke.bui/	[ʔke.bü]	‘something that brings peace’
/king/	[ki ŋ]	‘to follow’
/kebong/	[kə.ʔb ɭ ŋ]	‘to die’

/g/ Palatal voice plosive

Occurs syllable initial

/guon/	[gü.ʔv]	‘name of tree’
/gemang/	[gəʔm ɸ ŋ]	‘to exist there’

/gum/	[gum]	‘fog’
/gamung/	[ˈga.muŋ]	‘to call together’
/git/	[git]	‘to sharpen’

/ŋ/ Velar nasal

Occurs syllable initially and finally

/ŋoy/	[ŋ□ψ]	‘brideprice beads’
/ŋe. ŋam /	[ˈŋe.ŋ ʔ m]	‘to live in peace’
/ŋuok/	[ŋũ. □κ]	‘to teach’
/ŋap/	[ŋ ʔ p]	‘to shine’
/ŋit/	[ŋit]	‘dizzy’
/keŋ/	[keŋ]	‘to follow’
/kiŋ/	[kiŋ]	‘to fill’

1.2. Vowels

1.2.1. Chart

	front	central	back
high	ɪ		ʊ
mid	ε		o
low		α	

1.2.2. Evidence

/i/ Front high vowel

[ü] High front rounded vowel

Occurs syllable nucleus following a rounded vowel.

/udui/	[ʊ.ˈd̥ü]	‘banana’
/ului/	[u.ˈl̥ü]	‘to prepare pepeda’
/unuik/	[u.ˈn̥ük]	‘to fold’
/unuim/	[u.ˈn̥üm]	‘spirit/zest’

Compare [ũi] syllable initial:

/wisi/	[ũi.ˈsi]	‘to stand’
/dewi/	[ˈd̥e.wi]	‘prayer’

Compare also [ũi] with [u] :

/usi/	[ũˈsi]	‘to call, ask’
/wisi/	[ũi.ˈsi]	‘to stand’
/imuik/	[i.ˈm̥ük]	‘raspberry’
/ibui/	[i.ˈb̥ü]	‘to stiffen/ blind’
/alui/	[ˈa.l̥ü]	‘wave’
/suiŋ/	[s̥ũŋ]	‘to sit’

Compare:

/siŋ/	[siŋ]	‘seedling/to take out’
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/suŋ/	[suŋ]	‘ashes, trash’
/puit/	[püt]	‘to burn’
/buit/	[büit]	‘pain’
/nuik/	[nüik]	‘tree trunk’
/kui/	[kü]	‘animal droppings’

[ɪ] High front lower rounded vowel

Occurs in unstressed closed syllables.

/banim/	[ˈba.nɪ m]	‘old’
/demeniŋ/	[ðəˈmɛ.nʰɪ ŋ]	‘new’

[i] High front upper unrounded vowel

Occurs in all other contexts

/besik/	[bə.ˈsik]	‘drooping’
/ip/	[ip]	‘to stand’
/iti/	[i.ˈti]	‘to take, to get’

/e/ Front mid vowel

Occurs only rarely, word finally following /l/ .

/ple/	[ple]	‘bow’
/damle/	[ˈd ʔ m.le]	‘name of tree’
/daley/	[ˈda.ley]	‘rank of soldiers’
/ikle/	[i.ˈkle]	‘gossip’

Consider also:

/ide/	[i.ˈde]	‘heavy’
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[ɛ] Lower mid front vowel (see the main discussion on stress pattern)

Occurs occasionally in word finally, unstressed syllables, with [a] or [ɛ] in the preceding stressed syllable.

/gabe/	[ˈga.bɛ]	‘exist here’
/yense/	[ˈyɛn.sɛ]	‘kind of vegetable’
/nase/	[ˈna.sɛ]	‘must’

Occurs also occasionally, word initial in stressed position.

/yense/	[ˈyɛn.sɛ]	‘kind of vegetable’
/keli/	[ˈkɛ.li]	‘kind of fruit/rose apple’
/kelui/	[ˈkɛ.lui]	‘juicy’
/mekui/	[ˈmɛ.kü]	‘to fold’
/belui/	[ˈbɛ.lü]	‘panick’

[ö] Mid front rounded vowel

Occurs following a rounded high back vowel

/blue/	[blö]	‘magic’
/nue/	[nö]	‘leave it’
/pluep/	[plöp]	‘gather’
/pue/	[pö]	‘untie’

/ulue/	[u.'lō]	‘to empty’
/tuep/	[tũ.'ɛp]	‘stump of tree’
/tuen/	[tũ.'ɛn]	‘to slant’
/tuet/	[tũ.'ɛt]	‘to dig’

Compare contrast with [e] [u] and [ui] in same positions:

/ble/	[ble]	‘name of woman’
/plet/	[plet]	‘to dislocate’
/pu/	[pu]	‘to talk’
/pui/	[pui]	‘to fall’
/tup/	[tup]	‘to hear’

/a/ Central low vowel

[ɤ] Upper low short central vowel

Occurs in closed syllables

/mlap/	[ml ɤ p]	‘name of language’
/sat/	[s ɤ t]	‘tail’
/sak/	[s ɤ k]	‘dry’
/nan/	[n ɤ n]	‘earth’
/kay/	[k ɤ y]	‘to forget’
/kuat/	[kũ.' ɤ t]	‘frog’

Compare:

/yatap/	[ʼya.t ɤ p]	‘door’
/bauk/	[ʼba.uk]	‘porch’

[æ] Front low long vowel

Occurs following [l] and preceding [y] or following [ũ] [i] and [e].

/naklay/	[na.kl'æy]	‘all’
/klaya/	[ʼklæ.ya]	‘one’
/blay/	[blæy]	‘diarroeā’
/mlay/	[mlæy]	‘oil’
/pīam/	[pi.'æm]	‘wrong’
/teguan/	[tə'gũæn]	‘stomach’

Compare:

/dlang/	[dr ɤ ŋ]	‘wealth/bride price’
/bla/	[bla]	‘hut/cottage’
/semlea/	[sə'mlɛa]	‘pepeda’
/mea/	[mɛa]	‘will’

[a] Lower long vowel

Occurs in stressed syllables

/mla/	[mla]	‘rest’
/banom/	[ʼba.n□μ]	‘self’
/kadiŋ/	[ʼka.dɪ ŋ]	‘behind’

/u/ Back high vowel

[ũ] High centralized and compressed rounded vowel

/tuep/	[tũ.'ɛp]	‘stump of tree’
/tuen/	[tũ.'ɛn]	‘slant’
/tuet/	[tũ.'ɛt]	‘dig’
/utep/	[ũ.'tɛp]	‘tomorrow’
/usi/	[ũ.'sɪ]	‘ask’

Compare: [ũ'e] and [ö]

/suey/	[sũ'ey]	‘good’
/ulue/	[u.'löö]	‘empty’

[u] Back high rounded vowel

Occurs elsewhere

/babu/	['ba.bu]	‘grandfather/mother/ swollen’
/napu/	['na.pu]	‘day after tomorrow’
/banu/	['ba.nu]	‘moon/month’
/yangu/	['ya.ŋu]	‘yellow’
/wosu/	['w□.σv]	ἄρρε κανγαροοῶ
/su/	[su]	‘worm’
/mu/	[mu]	‘hole’
/ku/	[ku]	‘day/time/earth’
/ulue/	[u.'löö]	‘empty’
/u/	[u]	‘to sing’
/kabuŋ/	['ka.buŋ]	‘woman’

/o/ Back mid vowel

[o] Upper mid rounded vowel

Occurs very rarely and only in an open syllable, following [r] and [ɾ.l]

/kaysruo/	['k ʔ y.srũo]	‘eel’
/sruo/	[srũo]	‘earthenware crock’
/boglui/	[bo.glü]	‘to unset’
/rlo/	[ɾ.lo]	‘to move’

[□] Lower mid rounded vowel

Occurs in all other positions.

/so/	[s□]	‘intention/inessive’
/sok/	[σ□κ]	‘take off’
/klong	[κλ□ŋ]	‘to go’
/koy	[k□ψ]	‘fire’
/wosu/	['w□.σv]	‘tree kangaroo’
/blo/	[bl□]	‘above’
/sluakuon/	[sru.'a.kũ□v]	‘name of tribe’

1.3. Word structure and stress

The phonological word (PW) provides a useful construction for specifying underlying stress and syllable patterns. PW's are of two general contrastive classes: ultimate stress and penultimate stress and are basically constructed of 1 to 3 syllables. As follows:

Ultimate stress PW > CVC . 'CCVC

Penultimate stress PW > 'CCVC . CVC

Stress is predictable and is not written. De 'shewa' [ə] is interpreted as /e/. Consider the following examples:

LOW VOCOID [a] [ɔ] [ɛ] [ɔ̃] Stressed penultimate syllable (CV). 'CV(C). CV(C) No centralization	HIGH VOCOID [i] [e] [u] [ɔ̃] Stressed ultimate syllable CV(C). 'CV(C) Centralization [ə]	English gloss	HIGH VOCOID Stressed ultimate syllable V. 'CVC No centralization	English gloss
/damoy/ ['dā.mɔy]		full	/use/ [u.'se]	afternoon
/banim/ ['bā.nim]		old	/udui/ [u.'dū]	banana
/gabe/ ['gā.be]		exist here	/utep/ [u.'tɛp]	tomorrow
/katui/ ['ká.tü]		axe	/iseng/ [i.'sɛng]	pain
/kama/ ['ká.ma]		ear		
/kemtuik/ ['kɛm.tük]		name of tribe		
/kebali/ [kə.'ba.li]		work		
/demening/ [de.'mɛ.ning]		new		
/betodop/ [be.'tɔ.dɔp]		again		
/betedon/ [be.'tɛ.dɔn]		younger sibling		
/demanon/ ['de.'ma.nɔn]		older sibling		
	/meduim/ [mə.'dūm]	hill		
	/nebo/ [nəm.'bɔ]	pig		
	/nebut/ [nəm.'but]	story		
	/gemang/ [gə.'mɔ̃ng]	exist there		
	/nebit/ [nəm.'bit]	wind		
	/kebet/ [kə.'bet]	finish		

1.4. The Syllable

The syllable (S) functions in the PW in accordance with the existing stress patterns as described above. A vowel (V) functions as obligatory nucleus of the syllable, preceded by one or more non-obligatory consonants (C). Syllables in Kemtuik have the *basic* shape:

CVC . 'CVC. CVC

The underlined *basic* CV combination is obligatory. There are a few words existing of a single vowel. The following words are illustrative:

1 syllable	[bu]	‘water’
	[tɛn]	‘food’
	[u]	‘song’
	[i]	‘count’
2 syllables	[mə.'nɪ]	‘other’
	['wa.lɪp]	‘feast’
	['da.bü]	‘heart’
	[i.'ti]	‘give, take’
3 syllables	[tʃən.'da.li]	‘again’
	[kə'ba.li]	‘to work’
	[wɛŋ.'ka.bü]	‘head’
	[wʃə.'la.ka]	‘lobster’
	[ku.'na.la]	‘thinking’

1.5. Consonant distribution

The following numbering of the basic CV- string will help us to specify the set of consonant members in a numbered class, as follows:

C V C . 'C C V C. C V C (underlined CV pattern is obligatory)
 1 2 3 4 5 6 7

C1 > Includes all consonants

C2 > Includes all nasal consonants

C3 > Includes all consonants

C4 > Includes only /l/

C5 > Includes voiceless plosives, nasals, and semivowels

C6 > Includes all consonants

C7 > Includes voiceless plosives, nasals, and semivowels

The co-occurrence may be stated in the following set of conditions:

Condition 1: Only one consonant cluster can be formed: C + /l/

Condition 2: In the case of C1 being a nasal, and C3 is a voiced plosive, there will be assimilation to the point of articulation of the following C3.

Consider these examples:

/nebut/	[nəm.'but]	'story'
/nebo/	[nəm.'bɔ]	'pig'
/meduim/	[mən.'düm]	'mountain'

Condition 3: Syllabic consonants are interpreted as CV sequences. They consist of continuant consonants (r, s, m, n, ŋ) and occur in a pre-stressed syllable position.

Consider these examples:

/ndop/	[n̩.'dɔp]	'grasshopper'
/nson/	[n̩.'sɔn]	'to cough'
/ngga/	[ŋ̩.'ga]	'there'
/rlam/	[r̩.'lam]	'play'
/ntaton/	[n̩.'taton]	'brother'
/mtam/	[m̩.'tam]	'sago trail'
/semlea/	[s̩.'mlea]	'sago porridge'

Condition 4: If C2 is a syllabic nasal, the point of articulation of C2 will be predicted by the following C3.

1.6. Vowel distribution

Two PW-types were described in 1.3 based on stress and contrast. Observing those PW-types, vowel occurrences are stated below in terms of monosyllabic, disyllabic and occasionally trisyllabic PW's.

- Monosyllabic PW Vowels : C C 'V C includes all vowels or diphthongs

- Disyllabic PW Vowels: C V C . C C 'V C

1 2

V1 > obligatory unstressed centralized vowel /e/ [ə]

V2 > obligatory stressed vowel; includes all vowels or diphthongs.

- Trisyllabic PW Vowels: V. C C 'V C. C V C

1.7. Vowel centralization

There is an interesting contrast between HIGH centralized [ə] vocoid and the LOW vocoids [a] [ɛ]. They form two contrasting PW-classes.

For example: /damoy/ ['da.moy] 'full' versus /demu/ [də.'mu] 'stone'

In two and three syllable PW's, a vocoid in stressed position is preceded by a neutralized vocoid: CV(C). 'CV(C). It is neutralized towards the vocoid [ə], with a slight 'coloring' of the vocoid in the following stressed syllable.

Consider the following examples:

/ne.'but/ [nəm.'but] 'story'
/ge.'mang/ [gə.'mɔŋ] 'being there'

If that syllable string (occasionally) occurs as: V. 'CV, the vocoid in unstressed position is not centralized.

Consider the following example:

/i.'seng/ [i.'sɛŋ] 'pain'

LOW vocoids (mainly [a], sometimes [ɛ] or [ə]) in stressed position require NOT centralized vocoids in the following not stressed syllables.

Consider the following examples:

/'da.moy/ ['da.moy] 'full'

1.8. Diphtongs

Diphtongs: /ui/ [üi] [ü]
/ue/ [üe] [ö]
/uo/ [uɔ]
/ua/ [ua]
/ea/ [ea]
/ia/ [ia]

	Example (verb)	English gloss
[ü]	<i>duing</i>	think
[üi]	<i>wim</i>	swell
[ü]	<i>truik</i>	chase
[üe]	<i>suey</i>	good
[syö]	<i>sue</i>	swim
[uɔ]	<i>nguok</i>	teach
	<i>bluot</i>	mix
[u-ɔ]	<i>suang</i>	long
	<i>suali</i>	afraid

[i-æ]	<i>miam</i>	plenty
[ɛ-æ]	<i>mean</i>	chip
	<i>meam</i>	disappear

1.10. Reduplication

All word initial consonants and vowels can be reduplicated to indicate continuing action.

suang - susuang	[su.'sũ ʃɔŋ]	‘long – longing’
klong - koklong	[kɔ.'kλɔŋ]	‘go – going’
iti - iiti	[i.i.'ti]	‘give – giving’
suing - susuing	[sũ.'sũŋ]	‘sit – sitting’

1.9. Alphabet

The Kemtuik alphabet contains 19 symbols, 14 consonants and 5 vowels:

- Consonants: t, k, p, d, g, b, s, n, ng, m, l, r, w, y,
- Semi-consonants: y, w

The following pairs contrast an initial approximant with initial full vowels:

yay	‘care’	iyay	‘caring’
wet	‘seek’	uwet	‘seeking’

- Vowels: i, e, a, u, o
- In borrowed words: /c/ --- [tʃ]; /j/ --- [dʒ] ; /h/ --- [h]
-

Examples from the national language: *coklat*, *baca*, *bayam*, *Jayapura*, *huruf*. Dialectal influence from the Gresi (Klesi) language causes the use of [h] in a few cases. E.g. Kemtuik *sogo sogo so* ‘why’ is also being expressed with a different stress pattern as: [sɔgɔ.'hɔgɔσ]. There are a few other isolated examples where [h] is used in stead of /s/.