

## Rhythm in Bidayuh\*

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*The approximately 25 dialects of Bidayuh (Land Dayak) spoken in Sarawak, Malaysia, can be grouped into four clusters of generally intelligible dialects: Eastern, Central, Highland and Western. Although there is considerable variation among the clusters, the phonological patterns are very similar*

*In both the ultima and penult there are differences of vowel duration. The ultima vowels can occur as normal or as lengthened. In most dialects there are two types of penult vowel, full and reduced. A full penult vowel is sustained and has consistent quality. A reduced vowel frequently is brief, has lax articulation and lengthens a following consonant. In certain environments it is deleted entirely.*

*The lengthened vowels in the ultima have at least two historical sources: 1) loss of a Proto Bidayuh medial \*h; 2) Proto Bidayuh lengthened vowels that developed from loss of an Austronesian medial laryngeal.*

*The full vs. reduced vowel contrast seems to be related to differences in accentual pattern in some other AN languages and apparently developed from early accentual differences.*

### 1. Introduction

Bidayuh, a Land Dayak language, is a network of dialects spoken in the inland sections of the Kuching and Samarahan Divisions in southwestern Sarawak. The approximately 25 dialects can be grouped into four clusters of generally intelligible dialects: Eastern Bidayuh (Bukar-Sadung), Central (Biatah-Penrissen-Lower Padawan), Highland (Tringgus-Sembaan-Upper Padawan) and Western (Singai-Jagoi).<sup>1</sup>

In addition to Bidayuh the Land Dayak family of languages includes both the rather closely-related Bakati' group and a number of other languages spoken farther south in West Kalimantan.

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<sup>1</sup> The dialect groups correspond roughly to political districts (Eastern to Serian District, Central to Kuching District and Western to Bau District), but the Highland dialects are spoken in highland areas of both Kuching and Bau Districts.

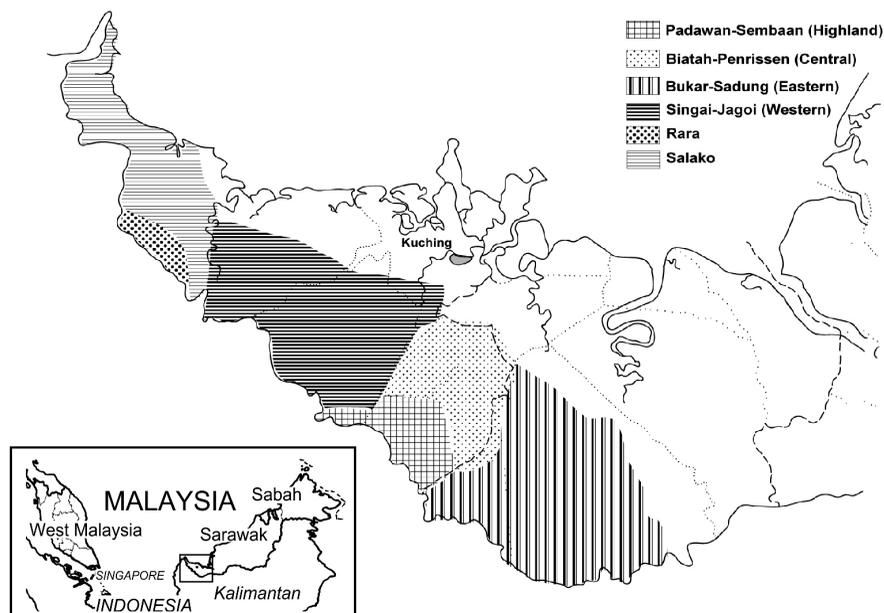


Figure 1. Location of Bidayuh dialect clusters with Rara and Salako (inset shows location of Bidayuh regions within Malaysia and Borneo)

## 2. Rhythm differences

Bidayuh stems are typically disyllabic. Stress falls on the ultima of the Bidayuh word, at least in isolation.

In both the ultima and the penult there are differences of vowel duration that create contrasting rhythm patterns. The longer (L) and shorter (S) vowels in both ultima and penult occur in all four possible combinations: S-S, L-S, S-L, L-L. Consider the following examples from the Tringgus Bireng (Highland) and Tebakang (Eastern) dialects:

Tringgus Bireng	<i>sūkun</i> <sup>2</sup> ‘elbow’	<i>pūkut</i> ‘punch (someone)’
	<i>būko:ʔ</i> ‘parang, bush knife’	<i>sūka:n</i> ‘hide’
Tebakang	<i>kābəs</i> ‘dead’	<i>kābət</i> ‘tie (impv.)’
	<i>mābə:r</i> ‘fly (verb)’	<i>tābi:r</i> ‘wall’

### 2.1 Vowels of the ultima

In the ultima there are six vowel qualities: high *i*, *u*; central *ə*; mid *e*, *o*; low *a*. In nearly half the dialects the mid vowels are pronounced as centralizing diphthongs, [iə/iə] and [ua/uə]; elsewhere they are pronounced as [e/ɛ] and [o/ɔ]. The central

<sup>2</sup> The consonants of Bidayuh are voiceless stops *p*, *t*, *c* (contrastive in Eastern dialects only), *k*; voiced stops *b*, *d*, *g*; nasals *m*, *n*, *ŋ*; liquids *r*, *l* (contrastive in Eastern dialects only); semivowels *w*, *y*; fricative *s*; laryngeals *ʔ*, *h*.

vowel is pronounced as [i] except in the Jagoi, Penrissen and Lower Padawan dialects, where it has a more retracted pronunciation, [ɤ].

Each of the six vowels in the ultima can occur as normal (V) or as lengthened (V:)<sup>3</sup> although the mid and low vowels are lengthened more commonly than the others. In some dialects it is difficult to be sure whether the contrast occurs with all the vowels. Curiously, it appears that the Tringgus Raya (Highland) dialect has no length contrast in final syllables even though the other Highland dialects do.<sup>4</sup>

Bunan (Eastern) *tuʔa:n*, Biatah (Central) *tuʔa:n*, Sembaan (Highland) *tuʔa:n*, [Serambu (Western) *tuʔan*] ‘primary forest’.

Tebakang (Eastern) *sibo:ŋ*, Biatah (Central) *sibo:ŋ*, Tringgus Bireng (Highland) *sibo:ŋ*, [Singai (Western) *siboŋ*] ‘sheath for a bush knife’.

## 2.2 Vowels of the penult

In the penult there are four vowel qualities: high i, u;<sup>5</sup> central ə;<sup>6</sup> low a. The mid vowels e and o do not occur contrastively in the penult.

It is worth noting in passing that the antepenult in Bidayuh has just one vowel i,<sup>7</sup> which does not seem to exhibit either the lengthening found in the ultima or the full/reduced difference found in the penult.

In Eastern, Central and Highland (but not Western) dialects there are two types of penult vowels, full (V̄) and reduced (V̆). Note the following contrasts in selected varieties:

Biatah (Central)	<i>bāʔuh</i> ‘new’, <i>băʔuh</i> ‘eagle’
	<i>dāya:ʔ</i> ‘person’, <i>dăya:ʔ</i> ‘blood’
Bukar (Eastern)	<i>āsuh</i> ‘smoke’, <i>ăsih</i> ‘who’
Anah Rais (Highland)	<i>bīsaʔ</i> ‘can, be able’, <i>bīsaʔ</i> ‘wet’
Biya (Highland)	<i>tūroh</i> ‘egg’, <i>tūrəŋ</i> ‘bone’
Tringgus Bireng (Highland)	<i>sūka:n</i> ‘hide’, <i>sūkuh</i> ‘elbow’

<sup>3</sup> In Western Bidayuh vowels may be rearticulated, i.e., there are sequences of identical (or diverse) vowels with the onset of the second vowel marked by an articulatory pulse coinciding with the onset of stress. For example, Gumbang (Western) [ta.'as] ‘ironwood’, [ti.'iʔ] ‘itchy’. These are sequences of vowels that form the nucleus of successive syllables. Western Bidayuh does not have lengthened vowels in the usual sense.

<sup>4</sup> For a discussion of long consonants as well as long vowels in the ultima of Long Terawan Berawan, a Lower Baram language of northern Borneo, see Jürgen Burkardt, “Long Terawan Berawan phonology: Questions on diphthongs and syllabicity” in this same volume.

<sup>5</sup> As penult vowels i and u can vary in some dialects to e and o, respectively, especially when the vowel of the ultima is e or o.

<sup>6</sup> The mid vowel ə (in non-Western dialects) is more restricted than the other vowels in its occurrence in that it may occur in the penult only if the vowel of the ultima is also a mid vowel, e.g., Bukar (Eastern), Biatah (Central) *təʔəp*, Tringgus Raya (Highland) *təʔəp* ‘deep’; Bukar (Eastern), Biatah (Central) *bəʔəŋ*, Tringgus Bireng *bəʔəŋ* (Highland) ‘round’.

<sup>7</sup> The other Land Dayak languages also have just one vowel that occurs in the antepenult, but in the Bakati’ languages and some others farther south it is a low vowel, a, rather than i.

The following examples show that the same type of penult vowel is often found in the equivalent forms in various dialect areas:

- Tebakang (Eastern) *bāuh*,<sup>8</sup> Biatah (Central) *bāʔuh*, Tringgus Raya (Highland) *bāʔuh*, [Serambu (Western) *baʔuh*] ‘new’  
 Tebakang (Eastern) *bǎʔuh*, Biatah (Central) *bǎʔuh*, Tringgus Raya (Highland) *bǎʔuh*, [Singai (Western) *bəʔuh*] ‘eagle’  
 Tebakang (Eastern) *mūkut*, Benuk (Central) *mūkut*, Sembaan (Highland) *mūkut*, [Singai (Western) *bukut*] ‘punch (vb.)’  
 Tebakang (Eastern) *būko:ʔ*, Benuk (Central) *būko:ʔ*, Tringgus Bireng (Highland) *būko:ʔ*, [Singai (Western) *bukoʔ*] ‘bush knife’

A full penult vowel has normal duration and is sustainable, with consistent vowel quality. Although there is no single phonetic feature that is present in every instance of a reduced penult vowel, the following features most commonly characterize this type of vowel:

- quick articulation that is not sustainable
- lengthening of a following consonant; cf. Tringgus Bireng /*sūkuh*/ [suk:uh] ‘elbow’
- devoicing before a voiceless stop; cf. Biya /*prǎkis*/ [prahkis] ‘boil, infection’, /*ǎtək*/ [ʔatik] ‘brain’
- deletion, in at least some utterances, especially between a stop and a liquid or between *s* and a stop or nasal; cf. /*tūraŋ*/ > Benuk /*traŋ*/ [tra<sup>h</sup>ŋ] ‘bone’; /*sīpo:t*/ > Sembaan /*spo:t*/ [spo:t] ‘blowpipe’, /*sīno:d*/ > Benuk /*sno:d*/ [snu:<sup>h</sup>d] ‘comb’
- lax vowel quality; e.g., *i* > *ɪ*, *u* > *ʊ*, *a* > *ə*; cf. Bukar /*sīkuh*/ [sɪk:uh] ‘elbow’, Bukar /*būda:ʔ*/ [bʊd:a:ʔ] ‘white’, Biatah /*dārəd*/ [dərɪd] ‘mountain’
- lowering of high vowels; e.g., *i* > *e*, *u* > *o*, cf. Tebakang /*jīleh*/ [jɛl:ɛh] ‘tongue’, Tebakang /*tūlo:ʔ*/ [tol:o:ʔ] ‘egg’
- exchange of vowel quality, especially among high vowels; e.g., *i* > *u*, *u* > *i*, *u* > *ə*, cf. /*sīkuh*/ > Anah Rais /*sīkuh*/, /*sūkuh*/ ‘elbow’, /*sūdeʔ*/ > Tringgus Raya /*sīdeʔ*/ ‘younger sibling’, /*mūrib*/ > Tringgus Raya /*mārib*/ ‘to fly’

The predominant canonical pattern in Bidayuh stems is CVNCVC.<sup>9</sup> Each of the consonant positions is optional. That is, the penult may have no initial consonant, and there may be no medial consonant. If the penult is closed by N, it must be followed by an initial consonant in the ultima. The ultima may have no closing consonant.

The contrast between full and reduced penult vowels is neutralized in the patterns CVVC and CVhVC.<sup>10</sup>

<sup>8</sup> A medial ʔ is regularly deleted in Tebakang following a full vowel (but not a reduced vowel) in sequences of diverse vowels.

<sup>9</sup> C = consonant, V = vowel, N = nasal of the same place of articulation as the following consonant.

<sup>10</sup> Although a similar neutralization might be expected in CVʔVC sequences, the contrast between full and reduced vowels does in fact operate in that environment. For example, Biatah (Central), Tringgus Raya (Highland) and Bukar (Eastern) *bāʔuh* ‘new’, Biatah (Central), Tringgus Raya (Highland) and Bukar (Eastern) *bǎʔuh* ‘eagle’.

When the pattern is CVVC, i.e., when there is no following consonant, the penult vowel is full, as in the following examples:

Anah Rais and Biya (Highland) *nīap* ‘count’  
 Biya (Highland), Tebakang (Eastern) *ūi* ‘rattan’  
 Biatah (Central), Tringgus Raya (Highland), Sadong (Eastern) *māin* ‘play’  
 Tebakang (Eastern) *kāi?* ‘negative’

When the pattern is CVhVC, i.e., when the medial consonant is h, the penult vowel is reduced, as in the following examples:

Tringgus Bireng (Highland) *dīhen*, Tebakang (Eastern) *dīhan* ‘durian’  
 Tringgus Raya (Highland) *bāhit*, Tebakang (Eastern) *ku māhit* ‘left (hand)’  
 Tringgus Raya (Highland), Bukar (Eastern) *tīhi?* ‘itchy’  
 Tringgus Raya (Highland), Bukar (Eastern), Tebakang (Eastern) *māhi* ‘eight’

<b>Pattern A:</b> complete set of full and reduced vowels	high	ī, ĩ	ū, ũ
all Highland dialects	central	ē, ě	
Tebakang (Eastern)	low	ā, ǎ	
<b>Pattern B:</b> contrast in all but central vowel	high	ī, ĩ	ū, ũ
Benuk (Central)	central	ə	
	low	ā, ǎ	
<b>Pattern C:</b> contrast in only the low vowel	high	i	u
Biatah (Central)	central	ə	
some Penrissen (Central)	low	ā, ǎ	
most Eastern dialects			
<b>Pattern D:</b> no contrast	high	i	u
all Western dialects	central	ə	
Lower Padawan (Central)	low	a	
Bunan (Eastern)			

Not all dialects exhibit the same system of full and reduced vowels in the penult. In some groups the contrast occurs with only certain vowel qualities, and in one group the contrast does not operate at all.

### 3. Sources of Bidayuh rhythmic differences

One may wonder how these rhythmic differences in the Bidayuh ultima and penult have developed. Apparently the differences in the ultima and the penult have different sources.

### 3.1 Sources of lengthened vowels in the ultima

The lengthened vowels in the ultima seem to have had at least two sources: (a) vowels brought together by the loss of a Proto Bidayuh medial \*h and (b) retention of a Proto Bidayuh lengthened vowel, which developed when a medial laryngeal at an earlier stage dropped out.

#### 3.1.1 Loss of Proto Bidayuh medial \*h

Some lengthened vowels in Central Bidayuh and the rearticulated vowels in Western Bidayuh, which are not lengthened vowels, have developed where a medial \*h of Proto Bidayuh has dropped out.

- Proto Bidayuh \**tāhas* > Bukar (Eastern) *tāhas*, Tringgus Raya (Highland) *tāhas*, Biatah (Central) *ta:s*, Serambu (Western) *taas* ‘ironwood’  
 Proto Bidayuh \**muhun* > Bukar (Eastern) *muhun*, Sembaan (Highland) *muhun*, Biatah (Central) *mu:n*, Serambu (Western) *muun* ‘descend’  
 Proto Bidayuh \**tihī?* > Bukar (Eastern) *tihī?*, Tringgus Raya (Highland) *tīhī?*, Biatah *ti:?*, Serambu (Western) *tii?* ‘itchy’  
 Proto Bidayuh \**bāhə(h)* > Sangking (Eastern) *bāhə*, Tringgus Raya (Highland) *bāhə*, Biatah (Central) *əbə:*, Serambu (Western) *bəəh* ‘charcoal’

#### 3.1.2 Loss of Austronesian medial laryngeal

Nearly all non-Western dialects have lengthened vowels that have developed from Proto Bidayuh lengthened vowels, which in turn have developed where an Austronesian (or PMP) medial laryngeal has dropped out.

- PAN \**buSek* > Proto Bidayuh \*(V)*bo:k* > Sembaan (Highland) *bo:k*, Biatah (Central) *ubo:k*, [Serambu (Western) *bok*] ‘hair (of the head)’  
 PMP \**bə[n]ti?is* > Proto Bidayuh \**bīte:s* > Tebakang (Eastern) *bīte:s*, Anah Rais (Highland) *bāte:s*, Bistaang (Central) *bāte(:)s*, [Serambu (Western) *bites*] ‘calf (of leg)’

Another Proto Bidayuh form with a lengthened vowel may reflect an earlier form with a medial laryngeal: Proto Bidayuh \**ma:n*, \**maʔan* > Sembaan (Highland) *ma:n*, Biatah *ma:n*, [Singai *man*]; Bukar (Eastern) *maʔan* ‘eat’. The consonant m of the Proto Hesperonesian reconstruction \**amaq* fits well with these forms, but the Proto Austronesian reconstruction \**kaʔən*, also glossed ‘eat’, with a medial laryngeal may offer a source for the reconstructed long vowel of Proto Bidayuh. (Note the long vowel in the Maloh form in the following section.)

The proposal that the lengthened vowels of Proto Bidayuh developed where an Austronesian medial laryngeal dropped out is supported by evidence from some other language groupings in Borneo.

Note, for example, the following examples from Maloh/Embaloh (Tamanic) in which long vowels have developed through the loss of a medial \*h, \*q or \*y:

- PAN *\*buSek* > Maloh *bu:k* ‘hair (of the head)’  
 PMP *\*daqan* > Maloh *da:n* ‘branch’  
 PMP *\*taqu* > Maloh *kato:* ‘right (hand)’  
 PMP *\*kaʔen* > Maloh *aŋ|ka:n* ‘eat’  
 PHN *\*sayap* > Maloh *sa:p* ‘wing’ (Adelaar 1994)

In Salako a medial \*l is often lost, e.g., PMP *\*bulan* > Salako *buatn* ‘moon’, PMP *\*kulit* > Salako *kuit* ‘skin’. When the same vowel occurs before and after the liquid, a rearticulated vowel results, which is similar to those of Western Bidayuh and in some contexts is pronounced as a long vowel.

- PAN *\*Zalan* > Salako *bajaatn* ‘walk’  
 PMP *\*laləj* > Salako *aat* ‘(house)fly’  
 PAN *\*tələn* > Salako *taatn* ‘swallow’  
 PAN *dəm* > Salako *maam*, cf. Malay *malam* ‘night’

### 3.2 Source of full and reduced vowels in the penult

Some scholars, e.g., Zorc (1978, 1983) and Ross (1994:62), suggest that PAN had differences in placement of the accent. The contrast between full and reduced vowels in the Bidayuh penult seems to be related to differences in accentual pattern in some other Austronesian (especially Philippine) languages and apparently has developed from accentual differences in Proto Austronesian.

Specifically, a Bidayuh form with a full vowel has developed from an earlier form with final stress while a Bidayuh form with a reduced vowel has developed from an earlier form with penultimate stress.

Note the following examples of Bidayuh full and reduced vowels that have developed from earlier forms with final and pre-final stress patterns, respectively.<sup>11</sup>

#### Forms with PAN final stress

- PAN *\*batú* > Proto Bidayuh *\*bātuh* ‘stone’  
 PMP *\*manúk* > Proto Bidayuh *\*mānuk* ‘bird’  
 PAN *\*limáH* > Proto Bidayuh *\*rīməh* ‘five’  
 PAN *\*bi + bíR* > Proto Bidayuh *\*bībih* ‘lip’  
 PMP *\*luZáq* > Proto Bidayuh *\*ŋ-ir-ūja?* ‘spit’  
 PHN *\*buká?* ‘open’ > Proto Bidayuh *\*būka?* ‘wide’  
 PAN *\*telúR* > Proto Bidayuh *\*tūloh* ‘egg’  
 PAN *\*belí* > Proto Bidayuh *\*mīrih, \*bīrih*, ‘buy’

<sup>11</sup> A form from Proto Austronesian (PAN) is provided when available. However, a form from Proto Malayo-Polynesian (PMP) is provided when that is the earliest horizon from which a reconstructed source is available. For a fuller set of examples of this contrast see Rensch et al. (2006), pp. 318–322.

**Forms with PAN penultimate stress**

PAN \**káyuH* > Proto Bidayuh \**kǎyuh* ‘tree, wood’

PAN \**láyit* > Proto Bidayuh \**rǎñit* ‘sky’

PAN \**d<sub>2</sub>áya* ‘inland’ > PLD \**dǎyǎh* ‘(up)land’

PAN \**búlan* > Proto Bidayuh \**bǔran* ‘moon’

PAN \**búluq* > Proto Bidayuh \**bǔru?* ‘bamboo’

PMP \**hútek*, \**qútek* > PBB \**ǎntək* ‘brain’

PMP \**ípen* > Proto Bidayuh \**jǐpən* ‘teeth’

PAN \**sí + kuH* > Proto Bidayuh \**sǐkuh*, etc. ‘elbow’

**4. Conclusion**

Most varieties of Bidayuh exhibit rhythmic features not shared by many of their Austronesian neighbors. In the ultima there are lengthened vowels that contrast with the considerably more common normal-length vowels. In the penult the full and reduced vowels are distinguished from each other not only through differences in sustainability but through tense vs. lax articulation and even the potential for complete deletion.

These differences in phonetic realization of the two types of contrast are paralleled by differences in historic sources of the contrasts. The lengthened vowels in the ultima derive primarily from lost medial consonants whereas the full-reduced vowel contrast in the penult relates to accentual differences of an earlier period.

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