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A Phonological Sketch of Lewotobi Lamaholot

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In this paper, I present a preliminary analysis of the phonology of the Lewotobi dialect of Lamaholot (Central Malayo-Polynesian, eastern Indonesia), including phonemes, allophones, phonotactics, syllable structures, stress placement, and morphophonemic processes. I also argue that the Lewotobi dialect differs from the neighboring Lamaholot dialects with regard to at least three features. First, [ʊ] appears in the positions where [w], [v], or [f] occurs in other dialects. Second, this dialect only allows open syllables, with the exception that the glottal stop can occur as a word-final coda. Third, /a/ is raised to [ə] either when nasalized or before a nasalized vowel. The description and analysis presented here are entirely based on a database of approximately 1,000 words collected through my fieldwork.

Keywords: Lamaholot, Central Malayo-Polynesian, dialect chain, phonology, phonotactics

1. Lamaholot and its dialects*

The Lamaholot language is a Central Malayo-Polynesian language of the Austronesian language family (Blust 1993, 2009a; cf. Donohue and Grimes 2008) and is spoken in the eastern part of Flores Island and neighboring islands in the Lesser Sunda Islands of Indonesia, serving as the lingua franca of the region (Grimes et al. 1997; Lewis 2009).

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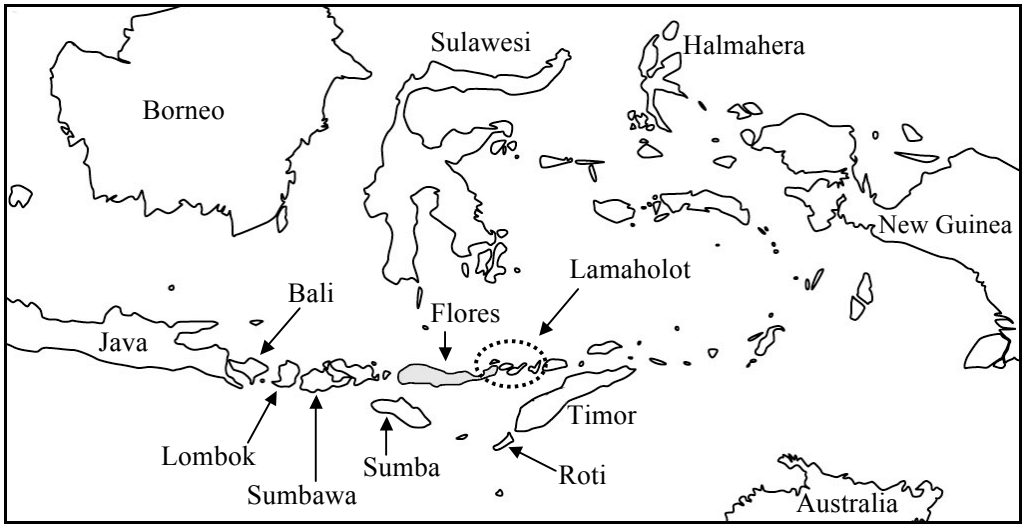
The position of Flores Island relative to the other islands of Indonesia is shown in Map 1, where the Lamaholot speaking region is indicated by a dotted circle. Within Central Malayo-Polynesian languages, it is considered to be in a subgroup with the languages of Timor and Roti rather than with those of central and western Flores (Wurm and Hattori 1983; Lewis 2009; cf. Fernandes 1996). The reported number of speakers of the entire language is somewhere between 150,000 and 200,000 (Nishiyama and Kelen 2007).

Lamaholot is spoken adjacent to Sikka to the west and Alorese (Klamer ms.), Kedang (Samely 1991), Larantuka Malay (Paauw 2009), and "Papuan" languages to the east. "Papuan" or non-Austronesian languages of this region include Abui (Kratochvíl 2007), Adang (Haan 2001), Klon (Baird 2008), and Teiwa (Klamer 2010). See also Stokhof (1975).

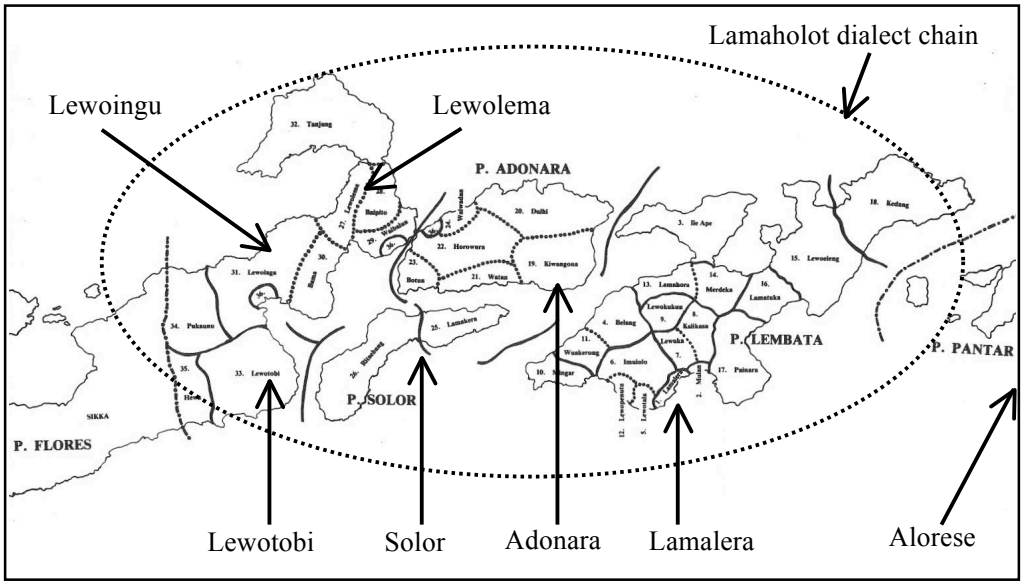
From a sociolinguistic perspective, it is noted that almost all Lamaholot speakers are bilingual or multilingual: they learn Indonesian as the official language of the Republic of Indonesia at school, and some of them also speak local languages such as Sikka and Larantuka Malay. Alternative names for Lamaholot include *Solorese* (Lewis 2009) and *Koda Kiwan* 'the language of the forest' (Pampus 1999, 2001).



Map 1: Flores Island and the islands of Indonesia

Although the speakers of Lamaholot usually think of it as a single language, it is better understood as a dialect chain with substantial enough differences between some of the dialects, making them mutually incomprehensible (Keraf 1978; Bowden 2008). By comparing Swadesh 200-word lists across Lamaholot dialects, Keraf (1978) concludes that there are 33 dialects in this language (see Map 2). The dialects studied with at least

some detail include the Solor dialect (Arndt 1937), the Lamalera dialect (Keraf 1978), the Lewolema dialect (Pampus 1999, 2001), the Lewoingu dialect (Nishiyama and Kelen 2007), and the Adonara dialect (Grangé 2009). Vatter (1932), Barnes (1996), and Kohl (1998), among others, are anthropological studies of the Lamaholot societies. Concerning the internal relationships among Lamaholot dialects, Keraf (1978) provides a hypothetical language tree by calculating lexicostatistic percentages based on Swadesh 200-word lists across dialects, although it mainly discusses the morphosyntax of the Lamalera dialect. Doyle (2010) is a comparative study of the historical relationships between Lamaholot dialects and other languages in the Flores-Lembata subgroup. Klamer (forthcoming) explores morphosyntactic similarities and differences between Lamaholot and its closest relative, Alorese. Thus, although most languages of eastern Indonesia are underdescribed (Klamer and Ewing in press), Lamaholot is perhaps "the most thoroughly documented of all the CMP languages" (Bowden and Ross 2003:143).



Map 2: Lamaholot dialects (adapted from Keraf 1978)

Despite this relatively rich literature, however, no work has focused on the Lewotobi dialect of Lamaholot, which is the most westerly dialect of the chain and is spoken by approximately 6,000 speakers in Kecamatan Ile Bura. In Grimes et al. (1997) and Lewis (2009), the Lewotobi dialect is distinguished from Lamaholot and treated as a separate language named "the Lewotobi language." A short list of Swadesh 200 words is available in Keraf (1978), but there is no substantial work beyond that, and grammatical details remain to be described.

The purpose of this paper is to present a preliminary analysis of the phonology of the Lewotobi dialect of Lamaholot on the basis of data collected through the present author's fieldwork. Various issues on Lewotobi Lamaholot phonology are addressed, including segmental phonemes, their phonetic descriptions, phonotactics, stress assignment, and morphophonological processes. I also point out that Lewotobi Lamaholot has three phonological innovations that may possibly differentiate it from other dialects. The analysis presented here is entirely based on the data that I have collected through my own fieldwork at Desa Nurri of Kecamatan Ile Bura of Kabupaten Flores Timur in Nusa Tenggara Timur of Indonesia. The database examined is composed of approximately 1,000 words.

The paper is organized as follows. In Section 2, I present the phoneme inventory and phonetic descriptions of each consonant and vowel phoneme. I go on to discuss phonotactics ranging from syllable structures to consonant clusters in Section 3. In Section 4, I briefly provide an analysis of stress assignment. In Section 5, morphophonological processes such as nasalization and assimilation are described. Finally, the paper is concluded in Section 6. At the end of the paper, the Swadesh 200-word list compiled by the present author is provided as an appendix.

2. Phoneme inventory

Lewotobi Lamaholot has 27 indigenous phonemes, namely, 16 consonants and 11 vowels (Tables 1 and 2). In addition, there are three loan phonemes shown in parentheses, /tʃ, ɲ, j/, which only appear in loan words borrowed from Indonesian and other Malay varieties in the region. This paper only discusses the native phonemes, and the three loan phonemes are excluded from the following discussions.

The inventory of consonantal phonemes for Lewotobi Lamaholot is set out in Table 1. It has a relatively simple set of consonantal contrasts and displays two characteristics to note compared to other languages in Flores. First, Lewotobi Lamaholot lacks a bilabial approximant /w/ (see Section 2.1). Second, it only makes a two-way contrast between stops, namely, voiceless and voiced stops, which does not seem typical of Flores languages. Some other Flores languages have a three- or four-way distinction. For example, the Udiworowatu Kéo phonemic inventory makes a four-way distinction between stops: voiceless, voiced, preglottalized and prenasalized (Baird 2002). Furthermore, the existence of prenasalized stop consonants is considered one of the typical features of languages in eastern Indonesia (Klamer 2002). However, Lewotobi Lamaholot does not contain them in its consonant phoneme inventory.

The inventory of vowel phonemes is laid out in Table 2. Its most noteworthy feature is the existence of contrastive vowel nasalization, which Lamaholot speakers characterize as

sengau ‘talk through the nose’ (Indonesian). Although “[p]honemically nasalized vowels are rare in AN [NN—Austronesian] languages” (Blust 2009b:654), the Lewotobi dialect has five nasalized vowels in addition to six oral vowels: /e, i, a, ə, o, u/ and /ẽ, ĩ, ə̃, õ, ũ/. The difference in number between oral and nasalized vowels is found quite widely among languages with contrastive nasalized vowels. In his typological survey on nasalized vowels, Hajek (2008) notes that “[t]he number of contrastive nasal vowels in a language is often less than that of oral vowels.”

Table 1: Consonantal phonemes

	BILABIAL	LABIO-DENTAL	DENTAL	ALVEOLAR	ALVEO-PALATAL	VELAR	GLOTTAL
Stop	p b		t̪	d		k g	ʔ
Nasal	m			n	(ɲ)	ŋ	
Fricative		v		s			h
Affricate					(tʃ) dʒ		
Lateral				l			
Trill				r			
Approximant					(j)		

Table 2: Vowel phonemes

	FRONT	CENTER	BACK
High	i ĩ		u ũ
Mid	e ẽ	ə ə̃	o õ
Low		a	

2.1. Phonetic descriptions: Consonants

This section provides a phonetic description of the consonantal phonemes by listing each one and its major allophonic variants, if any, with examples of the phonemes in words. As will be discussed in Section 4, stress regularly falls on the penultimate syllable and is not phonemic. For this reason, penultimate stress is not marked in any of the phonetic transcriptions, unless it is relevant to a particular point being discussed. Consonant clusters will be discussed separately in Section 3.3.

First, consider stops. Lewotobi Lamaholot has seven stops: three voiceless stops /p, t̪, k/ and three voiced stops /b, d, g/ in addition to the glottal stop /ʔ/ (see later discussion in this section). All stops are unaspirated. The phonemes /p, t̪, k, b, d, g/ can appear in word-initial and word-medial positions.

/p/ [p] voiceless bilabial stop
[pana] ‘walk, leave’
[lapə̃] ‘rope’

/b/	[b]	voiced bilabial stop
		[belo] ‘cut’
		[səba] ‘look for, search’
/t̪/	[t̪]	voiceless apico-dental stop
		[t̪oː] ‘hope’
		[t̪it̪oʔ] ‘touch’
/d/	[d]	voiced apico-alveolar stop
		[dai] ‘come (from the direction of the sea, etc.)’
		[lodo] ‘go down, move down’
/k/	[k]	voiceless dorso-velar stop
		[kaʊo] ‘whisper’
		[soka] ‘dance’
/g/	[g]	voiced dorso-velar stop
		[gaka] ‘cry’
		[sogaʔ] ‘lift’

Note that /t̪/ is realized as a dental stop [t̪], whereas its voiced counterpart, /d/, is pronounced as an alveolar stop [d]. The difference in place of articulation between /t̪/ and /d/ is evident from Figure 1, in which photographs of a male speaker are shown. The left photograph illustrates the position of the tongue during the consonant [t̪] in [t̪ane] ‘weave.’ It is obvious that the tongue is against the teeth. In contrast, the right photograph shows that the consonant [d] in [dai] ‘come’ is articulated with the tongue against the alveolar ridge, not the teeth.

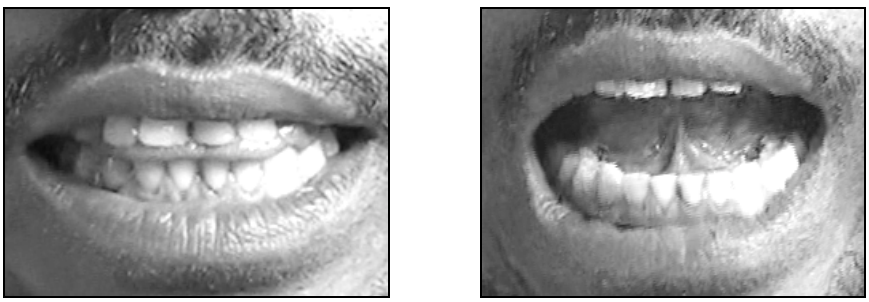


Figure 1: The position of the tongue during [t̪] in [t̪ane] ‘weave’ (left) and [d] in [dai] ‘come’ (right)

This asymmetry in place of articulation is not uncommon in Austronesian languages of Indonesia. Blust (1990:233) observes “[a] number of Western Malayo-Polynesian languages and perhaps some others contrast a dental /t/ with an alveolar /d/ and /n/.” Ross

(1992) reconstructs the contrast between a dental /t̪/ and an alveolar /d/ to Proto Austronesian (but see also Donohue 2009).

There are one voiced fricative /v/ and two voiceless fricatives /s/ and /h/. They can appear either word-initially or word-medially.

/v/	[ʋ]	voiced labiodental approximant
		/#_V or /(a)_(a)
		[ʋae] ‘aunt’
		[koʋa] ‘cloud’
	[v]	voiced labiodental fricative
		elsewhere
		[vreṭo] ‘throw off, shake off’
		[kvue] ‘crazy’
		[luvu] ‘stomach’
/s/	[s]	voiceless alveolar fricative
		[siʔa] ‘salt’
		[kəsəʔ] ‘a little’
/h/	[h]	voiceless glottal fricative
		[hama] ‘same’
		[mehaʔ] ‘alone’

The phoneme /v/ needs more description. It is realized as [ʋ] either when it occurs in the word-initial position and is directly followed by a vowel or when it appears before or after the low central vowel /a/; it is pronounced as [v] elsewhere. The waveforms and spectrograms of [ʋaʋe] ‘pig’ (left) and [luvu] ‘stomach’ (right) are given in Figure 2. On the one hand, it is clear from the spectrogram of [ʋaʋe] that there are no noticeable fricative noises that are characteristic of fricatives. On the other hand, fricative noises caused by a turbulent airstream are observed in the middle of the spectrogram of [luvu]. In both spectrograms, the relevant areas are indicated by arrows.

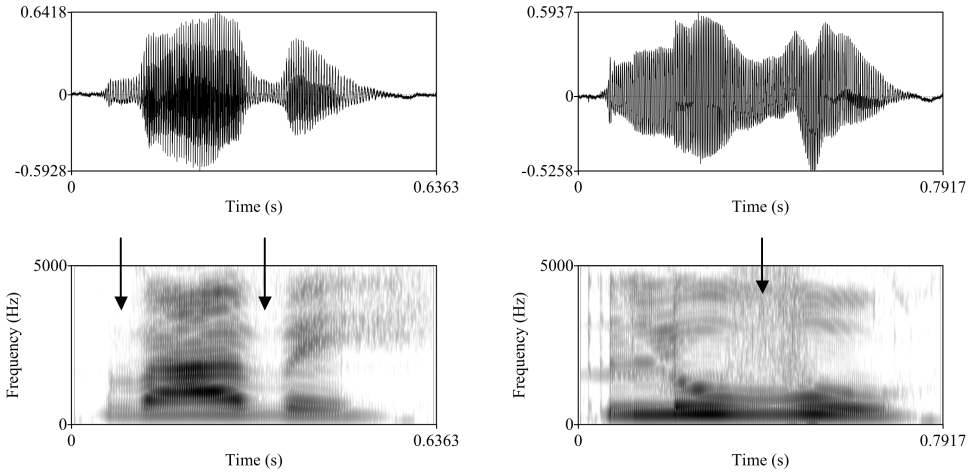


Figure 2: [ɒaʋe] ‘pig’ (left) and [luvu] ‘stomach’ (right)

Positing the fricative phoneme /v/ with an approximant allophone is chosen over the approximant phoneme /ʋ/ with a fricative allophone for two reasons (Mark Donohue, pers. comm.). First, the phonotactics of /v/ in consonant clusters indicates that /v/ behaves like a fricative (see Section 3). The fact that /v/ allows /vr/ and /vl/ clusters parallels /sr/ and /sl/; it behaves like a fricative and more like an obstruent. Second, the lower lip touches the upper front teeth even in the environments where [ʋ] appears. The photographs of two male speakers in Figure 3 illustrate the position of the lips during the word-initial consonant [ʋ] in [ʋaʋe] ‘pig.’ The lower lip touches the upper front teeth slightly, although the vocal tract is not constricted to such an extent that a noisy airstream is produced.

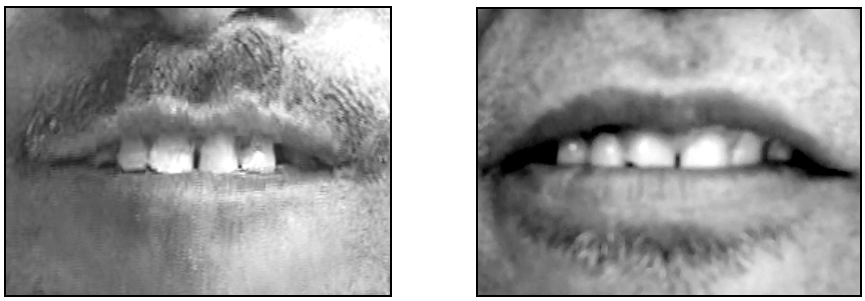


Figure 3: The position of lips during the initial consonant [ʋ] in [ʋaʋe] ‘pig’

As mentioned above, a noteworthy feature of the Lewotobi Lamaholot consonant inventory is the existence of [ʋ]: /v/ is realized as [w], [v], or [f] in the neighboring

dialects of Lamaholot and is often spelled as "*w*" in the informal orthography commonly used among Lamaholot speakers. Compare relevant words across dialects in Table 3, which shows that reflexes of PMP *b and *w are realized as [w], [v], or [f] in other dialects but as [ʋ] in the Lewotobi dialect.[1]

Table 3: Reflexes of PMP *b and *w[2]

PMP	Lewotobi	Lewoingu	Lewolema	Solor	Lamalera	Alorese
*bulan 'moon'	ʋulə̃	wulan	vulã	ˈwulɑ	fulâ	ˈfulaŋ
*batu 'stone'	ʋa̰to	wato	vato	ˈwato	fato	ˈfato
*buaq 'fruit'	ʋuə̃ʔ	wua	vuã	ˈuã	fua̰	ˈkulaŋ
*ka-wanan 'right'	ʋənə̃	wanan	vanã	ˈwana	fana	diˈkɛ̃ː
*wahiR 'water'	ʋaiʔ	waiʔ	vaiʔ	N/A	fai	fei

The phoneme /dʒ/ is the only affricate in Lewotobi Lamaholot, although its voiceless counterpart /tʃ/ appears in loan words from Malay (e.g., *baca* [batʃa] 'read'). /dʒ/ can appear either word-initially or word-medially.

/dʒ/	[dʒ]	voiced alveo-palatal affricate
		[dʒəku] 'dead'
		[kadʒoʔ] 'tree'

The liquids /l/ and /r/ appear in either word-initial or word-medial position.

/r/	[r]	voiced alveolar trill
		[ra̰taʔ] 'hair'
		[pira] 'how many'
/l/	[l]	voiced alveolar lateral
		[loʔi] 'cold'
		[həlaʔ] 'not'

Lewotobi Lamaholot has three nasals, namely, /m/, /n/, and /ŋ/, which are realized as voiced bilabial, alveolar, and velar nasals respectively. The distribution of /ŋ/ is limited: it only occurs as the word-medial onset. Other nasals can appear either word-initially or word-medially.

[1] Lewotobi Lamaholot speakers use a labiodental approximant [ʋ] rather than a bilabial approximant [w] even when they pronounce Indonesian words with /w/ such as *waktu* 'time' and *warna* 'color.'

[2] Sources are: Lewoingu (Nishiyama and Kelen 2007), Lewolema (Pampus 1999 cited in Doyle 2001), Solor (Klamer's field notes included in Klamer ms.), Lamalera (Keraf 1978), Alorese (Klamer ms.), and Proto Malayo-Polynesian (PMP) (Blust 1993:280–284).

/m/	[m]	voiced bilabial nasal stop
		[maṯa] ‘eye’
		[kame] 1PL.EXC
/n/	[n]	voiced alveolar nasal stop
		[naŋe] ‘swim’
		[pana] ‘walk’
/ŋ/	[ŋ]	voiced dorso-velar nasal stop
		[vəŋə̃] ‘rice’

The glottal stop /ʔ/ occurs either as a word-medial onset or a word-final coda. It does not occur phonologically in the word-initial position. As will be discussed in Section 3.1, Lewotobi Lamaholot displays a strong preference for open syllables, but the glottal stop is an exception to this generalization.

/ʔ/	[ʔ]	voiceless glottal stop
	[V̰]	creaky voice
		[baʔa] ‘heavy’
		[kotəʔ] ‘head’

The glottal stop phoneme may also manifest itself as creaky voice or laryngealization, in which “the vocal folds are held more tightly together than in regular voicing” (Ladefoged 2005:143). Figure 4 shows the waveforms and spectrograms of /baʔa/ ‘heavy’ pronounced by a female speaker in careful speech (left) and in casual speech (right). Those on the left side highlight that when pronounced carefully, the phoneme /ʔ/ is realized as a complete stop. The vocal folds do not vibrate due to complete closure of the glottis. In contrast, as seen in the waveform and spectrogram on the right, the casually pronounced /ʔ/ is realized as laryngealization of two adjacent vowels. Look at irregular pulses in the middle.

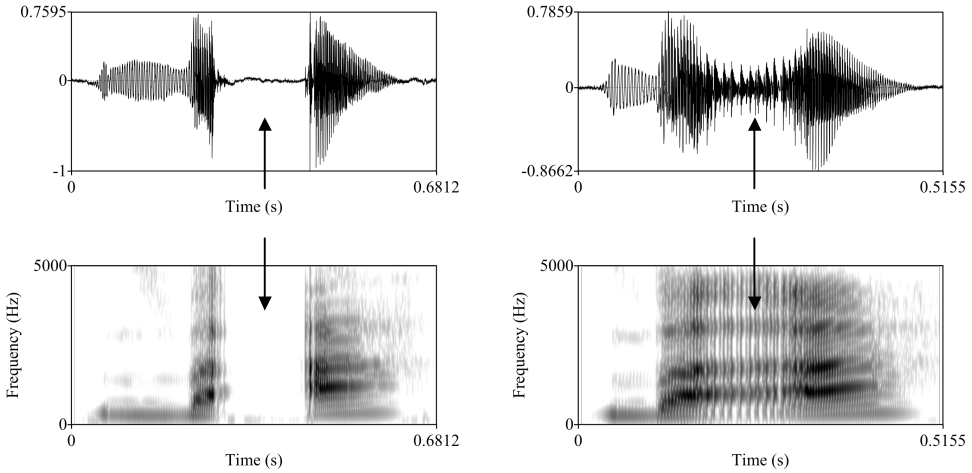


Figure 4: /baʔa/ in careful speech (left) and casual speech (right)

From a crosslinguistic perspective, this is not uncommon. “Creaky voice often occurs as the phonetic realization of a phonological glottal stop” (Ladefoged 2003:175); “[i]n the great majority of languages we have heard, glottal stops are apt to fall short of complete closure, especially in intervocalic positions. In place of a true stop, a very compressed form of creaky voice or some less extreme form of stiff phonation may be superimposed on the vocalic stream” (Ladefoged and Maddieson 1996:75).

The glottal stop may appear phonetically to indicate the beginning of a word when no other consonant is present. For example, /aʔa/ ‘gum’ can be pronounced as [ʔaʔa] with a glottal stop added to the word-initial onset. The waveform and stereogram of [ʔaʔa] in Figure 5 indicate that the same kind of burst is observed in both the word-initial and the word-medial positions. However, the glottal stop in this position is not phonemic: its existence or absence does not constitute a difference in meaning. Native speakers of Lewotobi Lamaholot do not recognize any phoneme in the onset of a vowel-initial word.

When it appears in word-medial positions, the glottal stop is treated as the onset of the following syllable rather than the coda of the preceding syllable. There are two reasons for this analysis. First, consonant clusters of the /ʔ.C/ type do not appear in any positions of words in my database. If the glottal stop could appear as the coda of a word-medial syllable, /ʔ.C/ consonant clusters would be possible. Second, when asked to slowly pronounce words with a word-medial glottal stop, speakers syllabify a glottal stop as the onset of a syllable. See Figure 6, which illustrates the waveform and spectrogram of /baʔa/ ‘heavy’ pronounced slowly by a male speaker. Observe that the vowel of the first

syllable does not show any sign of laryngealization or burst which that of the second syllable does.

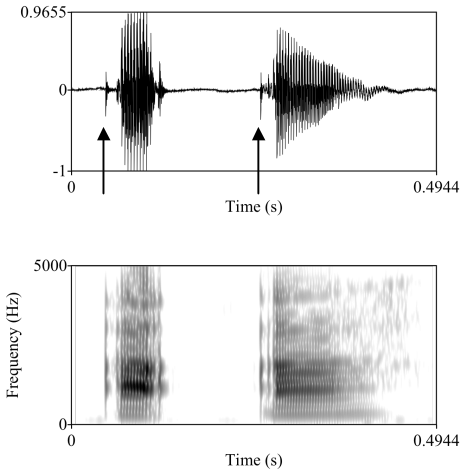


Figure 5: /aʔa/ [ʔaʔa] ‘gum’

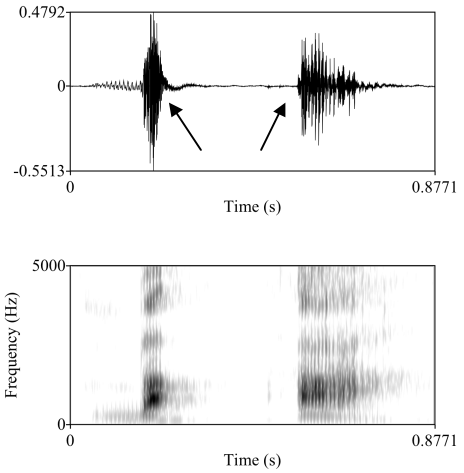


Figure 6: /baʔa/ [ba.ʔa] ‘heavy’

Contrast between various pairs of phonetically similar consonants can be established by means of the following minimal pairs. In a few cases in which no minimal pairs exist in the corpus, near-minimal pairs are shown.

/p/	vs	/b/	[pao]	‘mango’
			[bao]	‘float’
		/m/	[pao]	‘mango’
			[mao]	‘recover’
/t̪/	vs	/d/	[t̪ai]	‘(we) go’
			[dai]	‘come’
		/n/	[t̪ai]	‘(we) go’
			[nai]	‘(he or she) goes’
/k/	vs	/g/	[həkəʔ]	‘stop’
			[həgəʔ]	‘numb’
		/ŋ/	[məkə̃]	‘(you pl.) eat’
			[məgə̃]	‘a handful of’
			[mə̃ŋə̃][3]	‘play’ (verb)
/v/	vs	/s/	[ʋũ]	‘forbidden by taboo’
			[sũ]	‘year’

[3] The vowel of the initial syllable is nasalized due to the nasality spread rule discussed in Section 2.2.

		/m/	[ʋae]	‘aunt’
			[mae]	‘good’
		/b/	[ʋaha]	‘paddle’ (noun)
			[baha]	‘paddle’ (verb)
/s/	vs	/t̪/	[sũ]	‘year’
			[t̪ũ]	‘store (corn or rice)’
		/d/	[soʔo]	‘be afraid’
			[doʔo]	‘clean (bamboo)’
		/k/	[soso]	‘shuffle’
			[soko]	‘jump’
		/h/	[siʔi]	‘clean (corn)’
			[hiʔi]	‘be angry’
/dʒ/	vs	/t̪/	[odʒo]	‘wave’
			[o̪to]	‘car’
		/d/	[odʒo]	‘wave’
			[odoʔ]	‘push’
/r/	vs	/t̪/	[rae]	‘landward’
			[t̪ae]	‘excrement’
		/d/	[roʔ]	3SG.Primary Object
			[doʔ]	‘scoop (soup)’
		/l/	[rua]	‘two’
			[lua]	‘go seawards’
/h/	vs	/k/	[nahuʔ]	‘(he or she) gets water’
			[naku]	‘borrow’
		/ʔ/	[mehaʔ]	‘alone’
			[meʔa]	‘red’
		ø	[paho]	‘fart’
			[pao]	‘mango’
/ʔ/	vs	ø	[boʔə̃]	‘when’
			[boə̃]	‘bark’
			[bauʔ]	‘pour’
			[bau]	‘tomorrow’

2.2. Phonetic descriptions: Vowels

Lewotobi Lamaholot has an inventory of six oral vowels and five nasalized vowels, as shown in Table 2. Only the high and mid vowels have corresponding nasalized variants,

the low central vowel having only an oral variant. Phonetically long vowels are found only in certain monosyllabic words, but they are not phonemic (see also Section 3.1).[4]

First, consider oral vowels. They can appear in any position of a word.

/i/	[i]	high front unrounded vowel	
		[ipəʔ]	‘tooth’
		[t̪iṭoʔ]	‘touch’
		[loʔi]	‘cold’
/e/	[e]	mid front unrounded vowel	
		[ekə̃]	‘weather’
		[t̪edə̃]	‘wait’
		[pohe]	‘help’
/ə/	[ə]	mid central unrounded vowel	
		[əmũ]	‘don’t exist’
		[pəro]	‘salty’
		[kmogə]	‘feel lazy’
/a/	[a]	low central unrounded vowel	
		[ane]	‘feed chicken’
		[bali]	‘turn over’
		[koda]	‘talk; language’
/o/	[o]	mid back rounded vowel	
		[onəʔ]	‘inside’
		[plohe]	‘deadly hungry’
		[piṭo]	‘seven’
/u/	[u]	high back rounded vowel	
		[ue]	‘taro; potato’
		[t̪uba]	‘stab’
		[riʔu]	‘bone’

Contrasts between the six oral vowels in Lewotobi Lamaholot are illustrated by the following minimal and near-minimal pairs.

/i/	vs	/e/	[giʔi]	‘itchy’	[giʔe]	‘clean animal skin’
		/ə/	[ʊiṭi]	‘goat’	[ʊəṭi]	‘later’
		/a/	[gehi]	‘hate’	[gehaʔ]	‘pull’

[4] There is only one exception to this statement: [nə̃nə̃] ‘ask, request’ vs [nə̃ːnə̃] ‘(he or she) weaves’ (*n-* is an S/A-agreement prefix for third person singular).

		/o/	[loʔi]	‘cold’	[loʔo]	‘go fishing’
		/u/	[giʔi]	‘itchy’	[guʔi]	‘scoop’
/e/	vs	/ə/	[gəle]	‘roar with laughter’	[gələ]	‘tired’
		/a/	[geka]	‘laugh’	[gaka]	‘cry’
		/o/	[gile]	‘glance’	[gilo]	‘sour’
		/u/	[kaheʔ]	‘shout’	[kahuʔ]	‘(I) get water’
/ə/	vs	/a/	[məna]	‘vagina’	[mana]	‘kind of fish’
		/o/	[pəro]	‘salty’	[poro]	‘cut’
		/u/	[məkoʔ]	‘bad’	[muko]	‘banana’
/a/	vs	/o/	[mia]	‘be ashamed’	[mio]	2SG
		/u/	[haka]	‘come’	[haku]	‘mix’
/o/	vs	/u/	[mo]	2SG	[muʔ]	‘always’

Now consider contrastive nasalized vowels. The distribution of phonemic nasal vowels is limited to word-final positions (but see discussion below).[5, 6] Paauw (2009) reports that the same kind of word-final contrastive nasalization also occurs in Larantuka Malay, which is spoken in contact with Lamaholot dialects.

/ĩ/	[ĩ]	nasalized high front unrounded vowel	
		[deʔĩ]	‘stand’
/ẽ/	[ẽ]	nasalized mid front unrounded vowel	
		[hapẽ]	‘hang’
/ə̃/	[ə̃]	nasalized mid central unrounded vowel	
		[ikə̃]	‘fish’
/õ/	[õ]	nasalized mid back rounded vowel	
		[siõ]	‘kiss’
/ũ/	[ũ]	nasalized high back rounded vowel	
		[ʊuʔũ]	‘new’

Minimal and near-minimal pairs that show a contrast between the oral and the nasalized vowels are given below.

/i/	vs	/ĩ/	[miʔi]	‘urologic disease’
			[miʔĩ]	‘taboo in food’

[5] Mark Donohue (pers. comm.) commented that he is not convinced about the nasalized vowels being phonemic for this reason.

[6] Another possible analysis of nasalized vowels in Lewotobi Lamaholot is to posit an archiphoneme /N/, which is realized as nasalization on the preceding vowel, as done for Larantuka Malay (Paauw 2009). This possibility should be examined in my future research.

/e/	vs	/ẽ/	[lereʔ]	‘short; not tall’
			[lerẽ]	‘dry in the sun by hanging’
/ə/	vs	/ə̃/	[gə]	‘and then’
			[gə̃]	‘(he or she) eats’
/o/	vs	/õ/	[go]	1SG
			[gõ]	‘(you (SG)) eat’
/u/	vs	/ũ/	[bohuʔ]	‘full, satisfied’
			[bohũ]	‘wind, breeze’

Most probably, distinctive nasalization in Lewotobi Lamaholot has developed as a result of sound change VN > ṼN > Ṽ in word-final positions, which is composed of two connected steps, (a) nasalization and (b) N-deletion (cf. Hajek 1997). In some cases, deleted word-final Ns can be easily detected: (i) word-final nasals that historically existed in Proto Malayo-Polynesian and (ii) word-final nasals of loan words. See below. However, in many other cases, nasalized vowels are fully lexicalized, and it is not possible to tell what the phonetic value of deleted Ns was.

(i) PMP words (Blust 1993):

Lamaholot	PMP	English
miṯə̃	*ma-qite**m**	‘black’
ø-enũ[7]	*inu**m**	‘drink’
ʊulə̃	*bula**n**	‘moon’
urə̃	*quza**n**	‘rain’
larə̃	*zala**n**	‘road, path’

(ii) Nativization of loan words:

Lamaholot	Source	English (Source)
dagĩ	dagi**ŋ**	‘meat’ (Indonesian)
blakə̃	bəlaka**ŋ**	‘back’ (Indonesian)
noṯõ	nonto**n**	‘watch’ (Indonesian)
nipõ	nippo**n**	‘Japan’ (Japanese)

Nasalization in this language has a few important grammatical functions. One of its functions is to form the inalienable possessive construction, which indicates that someone owns something considered permanently or necessarily possessed. Observe below that inalienable possession is expressed by means of nasalization of a word-final vowel of

[7] The symbol “ø-” means that the designated verb inflects for person and number of subject (an intransitive subject S or a transitive subject A), which are marked on the verb by means of S/A-agreement prefixes. See Nagaya (2009a, b, 2010) for the details of S/A-agreement prefixes.

inalienably possessed nouns.[8] In contrast, the alienable possessive construction is marked by *=kə̃*.

Inalienable possessive construction:

Plain form		→	Possessed form	
[koṭəʔ]	'head'	→	[koṭə̃ʔ]	'his or her head'
[lei]	'leg'	→	[leĩ]	'his or her leg'
[ṭae]	'excrement'	→	[ṭəẽ]	'his or her excrement'

Although contrastive nasalization only occurs in word-final positions, phonetic nasalization may spread regressively from the word-final nasalized vowel to its preceding vowel(s) either when there is no consonant between them or when a nasal, /h/, or /ʔ/ is in between. In other words, the nasal spreading passes through these "transparent" consonants without affecting them (see Borroff 2005, 2007 for the transparency of glottal stop to nasality spreading).[9]

Nasality spread rule:

$$V \rightarrow \tilde{V} \,/\, \_\_ \left(\left\{\begin{matrix} \text{nasal} \\ /h/ \\ /ʔ/ \end{matrix}\right\}\right)\tilde{V}$$

Examples:	[mĩə̃]	'wait'	[kmə̃mũ]	'young'
	[nə̃nə̃]	'ask, request'	[kmũhũ]	'baby'
	[nə̃ʔə̃]	'and'	[ʊə̃ʔĩ]	'soup'

However, nasalization in non-word final positions is not phonemic and does not result in meaningful contrasts. Further, the spreading of nasality does not apply to all words and is optional in some. It remains to be investigated when this rule applies and when it does not.

Words that do not undergo nasality spread

[riə̃]	'village'	[loĩ]	'untie'
[əmũ]	'not exist'	[kenũ]	'(I) drink'
[briŋĩ]	'sick'	[bəhĩ]	'just now'
[deʔĩ]	'stand'	[duʔũ]	'sell'

Words that optionally undergo nasality spread

[8] Possessive relationship in Lamaholot is marked only when a possessor is third person.
[9] Note in passing that there is no nasal spreading from a nasal consonant to a vowel on its right.

[ʋə̃ũ]	~	[ʋəũ]	‘bad smell’
[ə̃mə̃]	~	[əmə̃]	‘mother’

3. Phonotactics

In this section, the phonotactics of Lewotobi Lamaholot is discussed: phenomena to be described are syllable structures (Section 3.1), vowel sequences (Section 3.2), and consonant clusters (Section 3.3).

3.1. Syllable structures

The syllable structures available in Lewotobi Lamaholot are V, CV, and CCV, but CCV only appears in the word-initial syllable. The language does not allow any word-internal or word-final codas except the glottal stop /ʔ/ can appear as a word-final coda. In word-final syllables, therefore, Vʔ and CVʔ are also possible. Thus, the following syllable structures are found in the different positions of a word:

Word-initial σ	Word-medial σ	Word-final σ
V	V	V
CV	CV	Vʔ
CCV		CV
		CVʔ

Most indigenous words are disyllabic, and only a handful of words are monosyllabic, many of which are grammatical words such as pronouns and agreement markers. Monosyllabic words are often, but not always, pronounced with the nucleus vowel lengthened. Below is a list of all the attested syllable structures with examples of each.

Monosyllabic words:	V	[aː]	‘what’
	Vʔ	[əʔ]	1SG (enclitic)
		[aʔ]	3SG (enclitic)
	CV	[dʒõ]	‘ship’
		[daː]	‘broken’
	CVʔ	[buʔ]	‘blow’
		[t̪eʔ]	‘be about to; almost’
	CCV	[pro]	‘get a permission to eat/drink’
		[kpõ]	‘whistle’
	CCVʔ	[kreʔ]	‘small’
		[kluʔ]	‘far’
Disyllabic words:	V.V	[ue]	‘taro; potato’

	[ĩũ]	‘wake up someone’
V.Vʔ	[auʔ]	‘(small) bamboo’
	[eoʔ]	‘meteor
V.CV	[aho]	‘dog’
	[ile]	‘mountain’
V.CVʔ	[aloʔ]	‘mullet’
	[anaʔ]	‘child; person’
CV.V	[lei]	‘leg’
	[hoa]	‘disappear’
CV.Vʔ	[pueʔ]	‘screw’
	[meiʔ]	‘blood’
CV.CV	[pana]	‘walk’
	[manu]	‘chicken’
CV.CVʔ	[bahaʔ]	‘wash’
	[ʊohoʔ]	‘outside’
CCV.V	[brea]	‘happy’
	[kvue]	‘crazy’
CCV.Vʔ	[kt̪aoʔ]	‘full; cannot eat any more’
	[kleaʔ]	‘light; not heavy’
CCV.CV	[kt̪əgə]	‘strong’
	[knaʊə̃]	‘sprout’
CCV.CVʔ	[kləkəʔ]	‘upper arm’
	[kpəsuʔ]	‘short; not long’

Phonetically speaking, CCCV syllables exist in two contracted words, [brvə̃ĩ] ‘woman’ and [gblakĩ] ‘man,’ which are abbreviated from the compounds [kbarə ʊə̃ĩ] ‘woman’ and [kbai lakĩ] ‘man’ respectively.

CCCV.V	[brvə̃ĩ]	‘woman’
CCCV.CV	[gblakĩ]	‘man’

There are no words of more than four syllables in my database, and words of more than two syllables are quite rare except for compounds and reduplicated words. Only two three-syllable and four four-syllable words have been attested. All the attested words are listed here.

Three syllable words:	CV.CV.CV	[ˈdʒugudʒo]	(interjection in traditional songs)

	CV.CV.CVʔ	[noˈʔoroʔ]	‘enough’
Four syllable words:	CV.V.CV.Vʔ	[ʋaoˈkoẽʔ]	‘all’
	CV.V.CV.CV	[paoˈlolõ]	‘squid’
	CV.CV.CV.V	[dəgəˈrau]	‘stair’
	CV.CV.CV.CV	[kəŋãˈŋãŋã]	‘talk in sleep’

Table 4 shows the distribution of consonants in a word. In my database of approximately 1,000 words, neither the glottal stop /ʔ/ nor the velar nasal /ŋ/ appears as a word-initial onset.[10] Other consonants can occur in either word-initial or word-medial syllable onset. The glottal stop is the only consonant that may occur in the coda of a word-final syllable. All oral vowels can appear in any position of a word, while contrastive nasalized vowels are limited to the word-final syllable.

Table 4: Distribution of consonants

	p	b	t	d	k	g	ʔ	m	n	ŋ	v	s	h	dʒ	l	r
Word-initial σ onset	+	+	+	+	+	+	*	+	+	*	+	+	+	+	+	+
Word-medial σ onset	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Word-final σ coda	*	*	*	*	*	*	+	*	*	*	*	*	*	*	*	*

The lack of codas is also characteristic of Larantuka Malay (Paauw 2009), and a preference for open syllables is counted as one of the typical features of eastern Indonesian languages (Klamer 2002). However, the preference for open syllables in Lewotobi Lamaholot is exceptionally strong even compared with other Lamaholot dialects. Other dialects allow word-final codas other than the glottal stop (see Table 5, for example). Assuming Proto Malayo-Polynesian allows word-final codas (e.g., ***iju*ŋ** ‘nose’, ***ŋaja*n** ‘name’, and ***pere*q** ‘squeeze;’ Blust 1993), the preference for open syllables in the Lewotobi dialect can be considered an innovation.

Table 5: Word-final consonants across Lamaholot dialects (in IPA)

	Lewotobi	Lewoingu	Lewolema	Solor	Lamalera	Alorese
‘bone’	riʔu	riʔu**k**	riʔu**k**	riʔu**k**	riu**k**	ruˈʔi**ŋ**
‘nose’	iru	iru**n**	iru	irũ	niru**ŋ**	ˈiːu**ŋ**
‘tongue’	ʋeʋe	wewe**l**	vɛvɛ(**r**)	wɛwɛ**l**	efe**l**	ˈfefe**l**
‘name’	narə̃	nara**n**	nara**n**	narã	nara**ŋ**	ˈnara**ŋ**
‘squeeze’	piʔu	peʔu**k**	piʔu**k**	N/A	piu**k**	N/A

[10] The constraint that the word-initial /ŋ/ is prohibited comes into play in at least two morphophonological processes: nasal substitution and assimilation. See Sections 5.2 and 5.3 respectively. I thank Kazuya Inagaki (pers. comm.) and Laura C. Robinson (pers. comm.) for drawing my attention to this.

‘other’	gehə̃	geha	geha**k**	ikər	gea**k**	ˈhama laˈhɛ

Interestingly, since codas other than the glottal stop are prohibited, the name of this language, [lamaholot], is phonologically ungrammatical in Lewotobi Lamaholot. Instead of [lamaholot], therefore, speakers of this dialect pronounce the name of the language without the word-final coda, as in [lamaholo], or more often simply use other names, such as *Koda Kiwan* [koda kiʋə̃] (or simply [kiʋə̃]) ‘the language of the forest’ and [koda titẽʔ] ‘our language.’

3.2. Vowel sequences

All the attested vowel sequences in the corpus are given in Table 6. There are two important constraints to note regarding the combinations of vowels. First, geminate vowels are prohibited. Vowel sequences cannot be composed of two of the same vowel (e.g., */aa/). Second, /ə/ cannot constitute a vowel sequence. There is only one word exceptional to this generalization: [uə] ‘buttocks.’ Interestingly, these two generalizations are also observed in Kéo (Baird 2002): in Kéo, “there are no geminate vowels, and only five of the six vowels occur in adjacent pairs—all vowels [NN—/i, e, a, o, u/] other than the mid-central schwa /ə/.”

Table 6: Vowel sequences

Second V		/i/	/e/	/ə/	/a/	/o/	/u/
First V	/i/		+	*	+	+	+
	/e/	+		*	+	+	+
	/ə/	*	*		*	*	*
	/a/	+	+	*		+	+
	/o/	+	+	*	+		+
	/u/	+	+	(+)	+	+	

ie	hie	‘open’ (curtain, etc.)
ia	via	‘yesterday’
io	krio	‘clothing’
iu	niu	‘bark, woof’ (dog, etc.)
ei	ei	‘cut something while holding it’
ea	t̪ea	‘where’
eo	reo	‘kind of tree’
eu	geu	‘mix using feet’
ai	ai	‘get’
ae	kvae	‘wife’

ao	sao	‘anchor’
au	hau	‘sew’
oi	doi	‘money’
oe	groe	‘fast’
oa	boa	‘throw away’
ou	t̪ou	‘pull’
ui	gui	‘chip away’
ue	gue	‘turn around’
uə	uə	‘buttocks’
ua	rua	‘two’
uo	guo	‘shout’

Importantly, Lewotobi Lamaholot does not have diphthongs. The vowel sequences listed above are not diphthongs but belong to separate syllables. Evidence comes from stress placement patterns discussed in Section 4.

3.3. Consonant clusters

Consonant clusters are strictly limited to word-initial positions and can be either homorganic or heterorganic. Here, a complete listing of all the word-initial consonant clusters found among the words in my database and examples of each are provided. The patterns of consonant clusters found in Lewotobi Lamaholot words are largely consistent with the sonority hierarchy.

<u>Stop + stop</u>[11]		
kp	kpəsuʔ	‘short; not long’
kt	kt̪əgə	‘strong’
kb	kbora	‘burp’
kd	kdaso	‘slip’
gb	gbula	‘open one’s eyes wide’
gd	gdə	The first element of the compound [gdəː gbaː] ‘jobless’
<u>Stop + fricative</u>		
ks	ksiː	‘fart without making a sound’
kv	kvaŋaʔ	‘listen’

[11] Many consonant clusters in Lewotobi Lamaholot begin with /k/. This is I think because *k-* is the fossilized prefix for (i) a stative event, (ii) a non-volitional action, (iii) insects, and (iv) furniture.

gv	gvali	‘return’

Stop + nasal

pn	pnoa	‘yawn’
km	kmihe	‘ant’
kn	knave	‘door’
gm	gmesuʔ	‘play around with something with one’s toe’
gn	gnato	‘deliver’ (verb)

Stop + liquid

pr	pro	‘get a permission to eat/drink’
pl	plaʔe	‘run’
tr	t̪riɬi	‘intestine’
kr	kreʔ	‘small’
kl	klami	‘sweet, delicious’
br	brea	‘be happy’
bl	blahaʔ	‘long’
gr	groe	‘fast, quick’
gl	glərə	‘tickle’

Fricative + fricative

sv	sva	‘almost dry’

Fricative + nasal

sm	səmkoʔ	‘(sexually) promiscuous man or woman’
sn	snəpə̃	‘fisher’

Fricative + liquid

sr	sri	‘droplet’
sl	slia	‘spread wings’
vr	vre̪to	‘throw off, shake off’
vl	vlelõ	‘throw away, dump’

Nasal + nasal

mn	mnera	‘delicious’

4. Stress placement

Stress in Lewotobi Lamaholot regularly falls on the penultimate syllable of a word, unless the word is monosyllabic, in which case it falls on the only syllable of the word. Vowels in stressed syllables seem to have higher pitch, longer duration, and greater intensity than those in unstressed syllables, but this has not been measured acoustically.

Stress assignment patterns can be affected when a word is followed by an enclitic. Lewotobi Lamaholot has two sets of enclitics: (i) the nominalization enclitic *=kə̃* (or *=nə̃* after a nasalized vowel; see also Section 5.3) and (ii) S-agreement enclitics (see also Section 5.3).[12] These enclitics form a phonological word together with the word to which they are attached and attract the position of stress from the penultimate syllable to the ultimate syllable of each word (i.e., the penultimate syllable of a phonological word). Thus:

(i) Nominalization enclitic:

[ˈknipu]	‘narrow’	→	[kniˈpu kə̃]	‘that narrow one’
[ˈbelə̃ʔ]	‘big’	→	[beˈlə̃ʔ nə̃]	‘that big one’

(ii) S-agreement enclitics:

[ˈkoda]	‘talk’	→	[koˈda əʔ]	‘I talk’
[ˈkenũ]	‘I drink’	→	[keˈnũ nəʔ]	‘I drink’

Stress placement patterns provide evidence that vowel sequences discussed in Section 3.2 are not diphthongs but rather two vowels that belong to different syllables. Words with vowel sequences behave like disyllabic words above in terms of stress assignment: the second vowel is counted as a separate syllable.

S-agreement enclitics and verbs with vowel sequences:

[ˈniu]	‘bark’	→	[niˈu aʔ]	‘(a dog) barks’
[ˈgei]	‘shave’	→	[geˈi əʔ]	‘I shave’

5. Morphophonological processes

There are a few morphophonological processes that need to be mentioned: /a/ to [ə] vowel raising (Section 5.1), nasal substitution (Section 5.2), assimilation (Section 5.3), and reduplication (Section 5.4).

5.1. /a/ to [ə] vowel raising

[12] S-agreement enclitics mark person and number of an intransitive subject (S) on the verb, while S/A-agreement prefixes inflect for person and number of either a transitive or an intransitive subject (S or A). See Nagaya (2009a, b, 2010) for more on these agreement markers.

The low central vowel /a/ is raised to [ə] being conditioned by nasalization. As has been mentioned in Section 2.2, nasalization of a word-final vowel is used to form an inalienable possessive construction. It is also employed to produce nominalized forms of some types of adjectives, which work as referential expressions.

Inalienable possessive construction:

[lei]	'leg'	→	[lə̃i]	'his or her leg'
[t̪ae]	'excrement'	→	[t̪əə̃]	'his or her excrement'
[uə]	'buttocks'	→	[uə̃]	'his or her buttocks'
[luvu]	'stomach'	→	[luvũ]	'his or her stomach'
[keko]	'back'	→	[kekõ]	'his or her back'

Nominalization of adjectives:

[kʊaʔi]	'wet'	→	[kʊaʔi]	'a wet one'
[lereʔ]	'short'	→	[lerə̃ʔ]	'a short one'
[belәʔ]	'big'	→	[belə̃ʔ]	'a big one'
[məkoʔ]	'bad'	→	[məkõʔ]	'a bad one'
[kpəsuʔ]	'short'	→	[kpəsũʔ]	'a short one'

In either case, when it is nasalized, the low central vowel /a/ is raised to [ə]. In Section 2, it was demonstrated that the number of contrastive nasalized vowels is fewer than that of oral vowels in Lewotobi Lamaholot. The reason for this is /a/ to [ə] vowel raising.

Inalienable possessive construction:

[lima]	'hand'	→	[limə̃]	'his or her hand'
[məna]	'vagina'	→	[mənə̃]	'her vagina'

Nominalization of adjectives:

[blahaʔ]	'long'	→	[bləhə̃ʔ]	'a long one'
[kleaʔ]	'light'	→	[kleə̃ʔ]	'a light one'
[mara]	'dry'	→	[marə̃]	'a dry one'
[buraʔ]	'white'	→	[burə̃ʔ]	'a white one'
[meʔa]	'red'	→	[meʔə̃]	'a red one'

In addition, /a/ may be raised to [ə] when it precedes a nasalized vowel, although this does not happen to all words. As in the spreading of nasality discussed in Section 2.2, nasals, /h/, and /ʔ/ are transparent to this raising.

/a/ to [ə] vowel raising:

$$/a/ \rightarrow [ə] / \_\_ (\left\{\begin{matrix} \text{nasal} \\ /h/ \\ /ʔ/ \end{matrix}\right\})\tilde{V}$$

Examples:	[t̪ae]	‘excrement’			
			→	[t̪əẽ]	‘his or her excrement’
	[manu]	‘chicken’	→	[aʔ mənũʔ]	‘bird’ (compound)
	[kame]	1PL.EXC			
			→	[kəmẽʔ]	1PL.EXC.POSS
	[blahaʔ]	‘long’	→	[bləhãʔ]	‘long’ (nominalized)
	[na]	3SG	→	[nəʔẽ]	3SG.POSS
	[ra]	3PL	→	[rəʔẽ]	3PL.POSS
	[rae]	‘landward’			
			→	[rəẽʔ]	landward.POSS
But:	[baʔa]	‘heavy’	→	[baʔã]	‘a heavy one’
	[t̪aʔa]	‘hard’	→	[t̪aʔã]	‘a hard one’
	[kʊaʔi]	‘wet’	→	[kʊaʔĩ]	‘a wet one’

Descriptions of other dialects of Lamaholot do not report on this kind of the /a/ to [ə] raising. Therefore, this morphophonemic process is most likely an innovation of the Lewotobi dialect.

5.2. Nasal substitution

Nasal substitution “replaces a base-initial obstruent with the homorganic nasal under prefixation” (Blust 2004:73). It is known as “arguably the most prominent morphonological process seen in Austronesian languages” (*ibid.*). Pampus (1999:30ff) points out that the Lamalera dialect of Lamaholot has nasal substitution, which is, however, considered as “a historically independent development” by Blust (2004:81), as it has different functions from the types found in other Austronesian languages. Nishiyama and Kelen (2007:48-55) report that Lewoingu Lamaholot also shows a similar type of nasal substitution.

The Lewotobi dialect, too, has nasal substitution of the kind found in Lamalera Lamaholot and Lewoingu Lamaholot. However, nasal substitution in this language is highly lexicalized, and only a few words display the alternation. Here, I only show all the attested examples according to the functions of nasal substitution, leaving a detailed analysis for future investigation. Observe that nasal substitution is sometimes followed by another irregular phonological change; for example, *mniku* ‘a tool for clipping the flower of the *tuak* tree (a species of palm tree) to extract the sap to produce palm wine’ is derived from *piku* ‘to clip the flower of the *tuak* tree’ by means of nasal substitution of /p/ with

/m/, but it is also accompanied by *n*-insertion. At this stage, it is not possible to present a full phonological analysis of these irregularities due to the paucity of relevant historical and dialectological data.

(i) Action verb (oral) vs instrument noun (nasal):

pət̪ə	'cut'	mət̪ə	'cutting board'
pət̪uʔ	'hit with *mətuʔ*'	mət̪uʔ	'short wood to hit someone'
piku	'clip tuak tree'	mniku	'tool for clipping tuak tree'
polẽ	'go across'	kmolẽ	'long wood'
bit̪u	'do fishing with a fishing rod'	mnit̪u	'fishing rod'
boge	'wrap with cloth'	mnoge	'bandage'
t̪obo	'sit down'	noboʔ	'seat'
t̪uhu	'spear'	knuhu	'spear to bundle straw'
t̪ugoʔ	'skew'	nugoʔ	'skewer'
dira	'use a fan'	mnira	'fan'
gaha	'grind'	mnaha	'sharp stick for grinding'
gurũ	'comb to remove lice'	knurũ	'louse-removing comb'
giʔa	'scratch'	kniʔa	'match' (noun)
sakoʔ	'hoe' (verb)	nakoʔ	'hoe' (noun)
valẽ	'throw a long wood'	mnalẽ	'long wood to throw'
həreʔ	'slice (tuak tree)'	məreʔ	'knife for slicing tuak tree'
huro	'spoon' (verb)	nuro	'spoon' (instrumental noun)
hoʔe	'ladle, scoop' (verb)	noʔe	'dipper, ladle'
hapẽ	'hang' (verb)	napẽ	'hook'
namo	'sweep'	mnamoʔ	'broom'

(ii) Action verb (oral) vs result noun (nasal):

pakə̃	'name'	makə̃	'name'
t̪akə	'build a ceiling'	nakə	'ceiling'
hau	'sew'	nau	'seam'

(iii) Action verb (oral) vs classifier (nasal):

bəwĩ	'bundle (wood)'	mnəwĩ	'bundle' (classifier)
pala	'cut, slice'	mala	'slice' (classifier)
pəgə̃	'grasp'	məgə̃	'handful' (classifier)

(iv) Action verb (oral) vs profession noun (nasal):

həreʔ	‘slice (tuak tree)’	nəreʔ	‘person who slices tuak tree’
səko	‘have sex’	səmakõʔ	‘promiscuous man or woman’
səpə̃	‘go fishing’	snəpə̃	‘fisher’

5.3. Assimilation

The two sets of enclitics that were mentioned in Section 4, the nominalization enclitic and S-agreement enclitics, show assimilation according to whether or not they are preceded by a nasalized vowel: an alveolar nasal stop is either replaced with the consonant of a consonant-initial enclitic or added to the onset of a vowel-initial enclitic. On the one hand, the nominalization enclitic *=kə̃* becomes *=nə̃* after a nasalized vowel. Importantly, the word-final glottal stop of an adjective is transparent relative to this assimilation process, too. Nasality spreads progressively whether or not a glottal stop is in between. Thus, the following nominalizations are found:

Nominalization enclitic:

	gə̃	‘sharp’	→	gə̃=nə̃
	milə̃	‘dirty’	→	milə̃=nə̃
	sənə̃	‘beautiful’	→	sənə̃=nə̃
	briŋ̃i	‘sick’	→	briŋ̃i=nə̃
	belə̃ʔ	‘big’	→	belə̃ʔ=nə̃
cf.	blega	‘wide’	→	blega=kə̃
	krubu	‘dull’	→	krubu=kə̃

On the other hand, S-agreement enclitics change their form, assimilating to the preceding nasalized vowel as in Table 7. When they are preceded by a nasalized vowel, Set 2 is employed; otherwise, Set 1 is used.

Table 7: S-agreement enclitics

	Set 1	
	SG	PL
1	=əʔ	=kə
2	=ko	=kə
3	=aʔ	=ka

Set 2	
SG	PL
=nəʔ	=nə
=no	=nə
=naʔ	=na

Examples of Set 1 *lega* ‘walk, hang around’:

go lega=əʔ	‘I walk’	t̪it̪e lega=kə	‘we (INC) walk’
		kame lega=kə	‘we (EXC) walk’
mo lega=ko	‘you (SG) walk’	mio lega=kə	‘you (PL) walk’
na lega=aʔ	‘he or she walks’	ra lega=ka	‘they walk’

Examples of Set 2 *ø-enũ* 'drink':

go k-enũ=nəʔ	'I drink'	t̪it̪e t̪-enũ=nə	'we (INC) drink'
		kame m-enũ=nə	'we (EXC) drink'
mo m-enũ=no	'you drink'	mio m-enũ=nə	'you (PL) drink'
na n-enũ=naʔ	'he or she drinks'	ra r-enũ=na	'they drink'

Note that in either case, the velar stop /k/ becomes the alveolar nasal /n/ rather than the velar nasal /ŋ/. This may be because the word-initial /ŋ/ is not allowed in this language (see Table 4 again).

5.4. Reduplication

Reduplication is not a productive morphophonological process in Lewotobi Lamaholot: only a small number of words are formed with reduplication. Full reduplication is the only type of reduplication observed in my data. Examples are given below:

Full reduplication:

adʒaʔ adʒaʔ	'many'	cf. adʒaʔ 'many'
dahe dahe	'very near'	cf. dahe 'near'
kəsəʔ kəsəʔ	'little by little'	cf. kəsəʔ 'a little'
nakə̃ nakə̃	'eat/drink little by little'	cf. *nakə̃
pəĩ pəĩ	'eat/drink little by little'	cf. *pəĩ
pəũ pəũ	'slowly'	cf. *pəũ

6. Final remarks

In this paper, I have provided an analysis of the phonology of the Lewotobi dialect of Lamaholot on the basis of firsthand data collected through fieldwork. I have pointed out that Lewotobi Lamaholot has three phonological characteristics that may possibly differentiate it from other dialects. First, a labiodental approximant [ʋ] appears in the positions where a bilabial approximant [w], a voiceless labiodental fricative [f], or a voiced labiodental fricative [v] occurs in other dialects. Second, Lewotobi Lamaholot does not allow closed syllables, with the exception that the glottal stop /ʔ/ can appear as a word-final coda. Third, /a/ is raised to [ə] when nasalized or before a nasalized vowel. However, because this study is based on a relatively small corpus of about 1,000 words, the description and analysis presented here remain at a preliminary stage. More data are necessary to prove (or disprove) them. There are also issues that I have not touched here: historical phonology, dialectology, loan phonology, orthography, and prosody/intonation. These issues will be addressed in my future studies.

Abbreviations

The following abbreviations are used in the paper: EXC-exclusive, INC-inclusive, PL-plural, POSS-possessive, SG-singular, 1-first person, 2-second person, and 3-third person.

Data

Here, a sample wordlist of Lewotobi Lamaholot is provided. This list is based on the modified Swadesh 200-word list that appears in Keraf (1978:262–297). Keraf's (*ibid*.) word list of the Lewotobi dialect is also presented for comparison with my list. The word number (#) and Indonesian words are cited from Keraf (1978) and are followed by English translations of the sample words. "Keraf (1978)" refers to his Lewotobi Lamaholot data, and "Nagaya (2008–2010)," to my own data.

There are three major differences between Keraf's Lewotobi data and mine. First, his data contains [w] instead of [ʊ]. Second, all the consonant clusters are broken by [ə] in his word list. No consonant cluster is found in his data. Third, /a/ to [ə] raising is not observed: [ã] also appears in his data.

There are several possible interpretations of the differences. One interpretation is that Keraf's data reflect an earlier stage of the Lewotobi dialect. Another is that Keraf (1978) and Nagaya (2008–2010) deal with different dialects of Lewotobi Lamaholot. At this stage, it is not possible to decide which interpretation is correct because Keraf (1978) provides no information on his data gathering procedure. He only notes that the name of his consultant is Ignatius Puka (*ibid*. XIII), who obviously comes from the same clan as my consultant, Hugo Puka.

#	Indonesian	English	Keraf (1978)	Nagaya (2008–2010)
1	tangan	hand	lima	lima
2	kiri	left	makĩ	mekĩ
3	kanan	right	wana	ʊənə̃
4	kaki	foot	lei	lei
5	kaki	footprint	maka	maka
6	berjalan	walk	pana	pana
7	jalan	road	larã	larə̃
8	datang	come	səga	səga
9	balik	return	gəwali	gʊali
10	berenang	swim	naŋe	naŋe
11	mencuci	wash	baha	bahaʔ
12	hapus	wipe	hamu	həmu

#	Indonesian	English	Keraf (1978)	Nagaya (2008–2010)
13	gosok	rub	doru	doruʔ
14	kotor	dirty	milã	milə̃
15	debu	dust	əwu	kəvu
16	kulit	skin	kuli	kuli
17	punggung	back	keko	keko
18	perut	belly	luwu	luvu
19	tulang	bone	riʔu	riʔu
20	isi perut	stomach	tãI kənaluŋ	tai knalũ
21	hati	liver	atẽ	a̤tẽ
22	jantung	heart	puhũ	puhũ
23	tahu	know	koi, moi	k-oi ‘I know’ m-oi ‘you (SG) know’ ‘we (EXC) know’ ‘you (PL) know’ n-oi ‘he or she knows’ t̤-oi ‘we (INC) know’ r-oi ‘they know’
24	pikir	think	hu	huː
25	takut	scared	takuʔ	t̤aku
26	darah	blood	mei	meiʔ
27	kepala	head	kotə	koṭəʔ
28	leher	neck	wuli	ʊuli
29	rambut	hair	rata	rata
30	hidung	nose	irũ	iru
31	bernapas	breathe	hari nãi	hari nə̃ĩ
32	membaui	smell	siõ	siõ
33	mulut	mouth	wəwa	ʊəʊa
34	gigi	tooth	ipə	ipəʔ
35	lidah	tongue	wewe	ʊeʊe
36	tertawa	laugh	geka	geka
37	menangis	cry	gaka	gaka
38	muntah	vomit	muta	muṭa
39	meludah	spit	pino	pino
40	makan	eat	təkã	kə̃ ‘I eat’

#	Indonesian	English	Keraf (1978)	Nagaya (2008–2010)
				gõ ‘you (SG) eat’ gə̃ ‘he or she eats’ t̪əkə̃ ‘we (INC) eat’ məkə̃ ‘we (EXC) eat’ gẽ ‘you (PL) eat’ rəkə̃ ‘they eat’
41	masak	cook	biho	biho
42	minum	drink	tenu	k-enũ ‘I drink’ m-enũ ‘you (SG) drink’ ‘we (EXC) drink’ ‘you (SG) drink’ n-enũ ‘he or she drinks’ t̪-enũ ‘we (INC) drink’ r-enũ ‘they drink’
43	gigit	bite	gori	bakaʔ ‘bite’ gori ‘munch’
44	menetek	suck	tuho	t̪uho
45	telinga	ear	tilu	t̪ilu
46	dengar	listen	bãi	bə̃ĩ
47	mata	eye	mata	mata
48	melihat	see	notõ	notõ
49	tidur	sleep	turu	t̪uru
50	rebah	lie down	ledãnə	hoba
51	duduk	sit	tobo	t̪obo
52	berdiri	stand	deʔi	deʔĩ
53	orang	person	atadikã	at̪adikə̃
54	laki-laki	man	bailaki	kbai lakĩ
55	wanita	woman	kəbarawãi	kbarə ʋə̃ĩ
56	anak	child	anaʔ	anaʔ
57	suami	husband	kəlake	klake
58	isteri	wife	kəwae	kʋae
59	ibu	mother	əma	əmə̃ʔ
60	bapak	father	bapa	baʔ
61	kakak	older sibling	kaka	kaka

#	Indonesian	English	Keraf (1978)	Nagaya (2008–2010)
62	adik	younger sibling	ari	ari
63	nama	name	narã	narə
64	bilang	say	mari	marĩ
65	tali	rope	tale	ṭaleʔ
66	mengikat	tie	pũi	pũĩ
67	menjahit	sew	hau	hau
68	pakaian	clothing	pakaian	krio
69	berburu	hunt	lərakə	ləraʔ
70	menembak	shoot	pasa	pasa
71	menikam	stab	tuba	ṭuba
72	bertinju	fist	tubuk	ṭubu, sado
73	berkelahi	fight	kəwuno	pluku ‘fight physically’ kvuno ‘fight verbally’
74	membunuh	kill	belo	nəʔə mata ‘make dead’
75	mati	dead	mata	maṭa
76	hidup	alive	mori	mori
77	menggaruk	scratch	ragu	raguʔ
78	memotong	cut	belo	belo
79	batang	stem	pukã	pukə
80	membelah	split	ləga	lagaʔ
81	tajam	sharp	gã	gə
82	tumpul	blunt	gəbohu	krubu, gbohu
83	bekerja	work	kəriã	kriə
84	bermain	play	məŋə	mə̃ŋə
85	menyanyi	sing	ñañi	ɲaɲi (Indonesian)
86	menari	dance	soka	soka
87	bengkak	swollen	baʔa	baʔa
88	memeras	squeeze	piʔu	piʔu
89	memegang	hold	pehẽ	pehẽ
90	menggali	dig	guʔi	guʔi
91	memberi	give	sorõ	sorõ, neĩ
92	menarik	pull	gehaʔ	gehaʔ, ṭubo
93	mendorong	push	odo	odoʔ, sogõ

#	Indonesian	English	Keraf (1978)	Nagaya (2008–2010)
94	melempar	throw	geba	gebaʔ
95	jatuh	fall	goka	ləŋa, goka, gora
96	anjing	dog	aho	aho
97	burung	bird	kəpã	aʔ mənũʔ
98	telur	egg	təlũ	ṯelu
99	bulu	feather	rawu	raʋũʔ
100	sayap	wing	kəpiʔ	kəpĩʔ
101	terbang	fly	bəka	bəka
102	binatang	animal	binataŋ	binatə̃ (Indnesian)
103	daging	meat	mətã	dagĩ
104	lemak	fat	worã	ʋorə̃
105	ekor	tale	kiku	kukuʔ
106	ular	snake	ulaʔ	ulaʔ
107	cacing	worm	kəbeŋə̃	ulə̃
108	kutu	louse	kuto	kuṯo
109	ikan	fish	ikã	ikə̃
110	pohon	tree	kadʒopukã	kadʒoʔ pukə̃
111	busuk	rotten	wuhu	ʋə̃ũ
112	daun	leaf	ləpã	ləpə̃ʔ
113	kulit kayu	bark	kadʒokəloka	kadʒoʔ kloka
114	akar	root	ramu	ramu
115	biji	seed	kulu	kulũʔ
116	bunga	flower	buŋa	puhũ
117	buah	fruit	wuã	ʋuə̃ʔ
118	rumput	grass	luʔo	krəmə cf. luʔo ‘rumput alang-alang’
119	tanah	earth	tana	ṯana
120	batu	stone	wato	ʋaṯo
121	pasir	sand	wəra	ʋəra
122	air	water	waiʔ	ʋaiʔ
123	membeku	freeze	N/A	ṯaʔa
124	es	ice	N/A	es (Indonesian)
125	mengalir	flow	ba	baʔ

#	Indonesian	English	Keraf (1978)	Nagaya (2008–2010)
126	terapung	float	bao	bao
127	laut	sea	tahi	t̪ahi
128	garam	salt	siʔa	siʔa
129	danau	lake	walã	N/A cf. ʋalə̃ ‘lumpur’
130	sungai	river	luŋu	suŋe
131	gunung	mountain	ile	ile
132	hutan	forest	kərawo	kraʋoʔ
133	langit	sky	kəlã	kələ̃
134	matahari	sun	ləra	ləra
135	bintang	star	bəlia	blia
136	awan	cloud	kowa	koʋa
137	embun	dew	apũ	apũ
138	hujan	rain	urã	urə̃
139	salju	snow	N/A	N/A
140	angin	wind	aŋi	əŋ̃i
141	bertiup	blow	bu	buʔ
142	panas	hot	pəlate	plat̪e
143	dingin	cold	loʔi	loʔi
144	kering	dry	marã	mara, marə̃
145	basah	wet	kəwaʔi	kʋaʔi
146	rata	flat, smooth	rata	rat̪a
147	berat	heavy	baʔa	baʔa
148	api	fire	ape	ape
149	membakar	burn	tuno	t̪uno, ora
150	asap	smoke	rihũ	rihũ
151	abu	dust	kəwu	kəvu
152	hitam	black	mitã	mit̪ə̃
153	putih	white	burã	buraʔ, burə̃ʔ
154	merah	red	meʔã	meʔa, meʔə̃
155	kuning	yellow	kumã	kumə̃
156	hijau	green	idʒo	idʒõ
157	kecil	small	kərẽ	kreʔ, krẽʔ

#	Indonesian	English	Keraf (1978)	Nagaya (2008–2010)
158	besar	big	belã	belaʔ, belãʔ
159	pendek	short	pəsu	kpəsuʔ, kpəsũʔ
160	panjang	long	bəlahã	blahaʔ, bləhãʔ
161	tipis	thin	mənipi	mnipi
162	tebal	thick	kəwəra	kvərə̃, kvərẽʔ
163	sempit	narrow	kətəkə	knipu
164	luas	wide	luas	blega
165	lurus	straight	kəlodo	klodo
166	tua	old	tua	okĩ, t̪ua (Indonesian)
167	baru	new	wuʔũ	ʊuʔũ
168	baik	good	sarẽ	sareʔ, sarẽʔ
169	jelek	bad	məko	məkoʔ, məkõʔ
170	betul	right, correct	nãdikã	nə̃ʔə̃ dikə̃ʔ
171	malam	night	nokõ	nokõʔ
172	tahun	year	sũ	sũ
173	hari	day	lərõ	lərõ
174	bilamana	when	boʔã	boʔə̃
175	di	in	lau, rae	ia
176	dalam	inside	onã	onə̃ʔ
177	di sini	here	pi	piː, pihi t̪eː, t̪ehe
178	di situ	there	pehe	peː, pehe
179	ini	this	teʔẽ	piʔi, teʔẽ
180	itu	that	teʔẽ	peʔẽ
181	dekat	near	dãhe	dahe
182	jauh	far	dõe	doẽʔ
183	di mana	where	tea	t̪ea
184	saya	1SG	go	go
185	engkau/kamu	2SG; 2PL	mo/mio	mo/mio
186	dia	3SG	na	na
187	kita	1PL.INC	tite	t̪it̪e
188	kami	1PL.EXC	kame	kame
189	mereka	3PL	ra	ra

#	Indonesian	English	Keraf (1978)	Nagaya (2008–2010)
190	apa	what	a	aː
191	siapa	who	hege	hege
192	lain	other	gehã	gehə̃
193	beberapa	some	bopirã	pira
194	banyak	many	ajã	adʒaʔ, adʒə̃ʔ
195	sedikit	few	kəsə	kəsəʔ
196	semua	all	waokãe	ʊaokoẽʔ
197	dan	and	noʔõ	nə̃ʔə̃
198	dengan	with	noʔõ	nə̃ʔə̃
199	sebab	because	pukã	pukə̃
200	jikalau	if	kalu	nə̃ʔə̃ peː

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