

## A Phonemic Description of the Tobilung Language

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This paper describes the phonemics of Tobilung, one of the Dusun subgroup of Bornean languages. Tobilung shares many of the characteristics of Austronesian languages, having a relatively small inventory of consonants and vowels, a predominance of disyllabic words and also of consonant-vowel sequences. Features of interest include the relatively uncommon bilabial and alveolar implosives and the juxtaposition of voiced and voiceless bilabial and alveolar plosives in adjacent syllables. Vowel-final words are rare and are only found in minor lexical categories.

There is some preliminary consideration of morphophonemics in this paper. In common with other Dusunic languages, Tobilung exhibits vowel harmony, in which morphophonemic processes trigger the change of the 'neutral' 'o' vowel to the low 'a', but this process is blocked by geminate vowel clusters within roots. Conversely, there is also 'neutralisation' where at times the morphophonemic processes trigger the change of 'a' vowels to neutral 'o.'

**Key words:** implosives, vowel harmony, neutralization, geminate vowels

### 1. Introduction

The Tobilung people number between 5,000 and 10,000.<sup>1</sup> Traditionally, they lived along the northwest coast of Sabah, Malaysia, in the Kota Belud and Kota Marudu districts. However, today many live in Kota Kinabalu, in Tamparuli, Kudat and parts of West Malaysia where they have moved in search of work. Tobilung is a Dusunic language. The data represented here reflects Tobilung as it is spoken in the village of Toburon and neighbouring villages in the Kota Belud district. It was collected between November 2000 and February 2001.<sup>2</sup>

### 2. Phonemes in Tobilung<sup>3</sup>

Tobilung has 16 consonant phonemes and 5 vowel phonemes as shown below:

**Table 1. Consonant Phonemes**

	Labial	Coronal	Velar	Glottal
<b>Vl plosive</b>	p	t	k	ʔ
<b>Vd plosive</b>	b	d	g	
<b>Nasal</b>	m	n	ŋ	
<b>Fricative</b>		s		
<b>Affricate</b>		ɖʒ		
<b>Trill</b>		r		
<b>Lateral</b>		l		
<b>Semivowel</b>	w	j		

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<sup>1</sup> Estimates of population are from the Kota Belud and Kota Marudu local councils and from the Persatuan Tobilung Bersatu Sabah, also known as TOBISA.

<sup>2</sup> There may be a dialect distinction between the Kota Belud and Kota Marudu branches of the group, but this needs further research.

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<sup>3</sup> An earlier phonemic analysis of Tobilung was done by John and Gail Hutchinson. They have graciously given me access to their analysis and all the associated Tobilung materials. I am indebted to them for providing me with a foundation for this analysis.

Table 2. Vowel Phonemes

	Front	Central	Back
High	i		u
Mid	e		o
Low		a	

## 2.1 Description of phonemes

### 2.1.1 Consonants

/p/ [p<sup>ˀ</sup>] Voiceless unreleased bilabial plosive; occurs word-finally:

/taap/ [ʔa.ap<sup>ˀ</sup>] 'roof'

[p] Voiceless bilabial plosive; occurs elsewhere:

/palad/ [pa.ʔad<sup>ˀ</sup>] 'palm of hand'

/nipon/ [ni.pɔn] 'tooth'

/simpon/ [ʔsim.pɔn] 'short trousers'

/b/ [b<sup>ˀ</sup>] Voiced unreleased bilabial plosive; occurs word-finally and at a syllable boundary before a voiceless bilabial plosive:

/kajab/ [ka.ʔab<sup>ˀ</sup>] 'shoulder'

/tobpineeʔ/ [ʔɔb<sup>ˀ</sup>.pi.nɛ.ɛʔ] 'sibling'

[b] Voiced bilabial plosive; occurs as the second member of a consonant cluster following a homorganic nasal:

/tambaŋ/ [ʔtam.baŋ-] 'deer'

[β] Voiced bilabial implosive; occurs elsewhere:

/badiʔ/ [βa.ʔdiʔ] 'market'

/kabaŋ/ [ka.βaŋ-] 'mouth'

/t/ [t<sup>ˀ</sup>] Voiceless unreleased dental plosive; occurs word-finally:

/gonit/ [g-ɔ.nit<sup>ˀ</sup>] 'lightning'

[t] Voiceless dental plosive; occurs elsewhere:

/togis/ [ʔɔ.g-is] 'sand'

/watuʔ/ [wa.ʔtuʔ] 'stone'

/tantob/ [ʔtan.ʔɔb<sup>ˀ</sup>] 'fence'

/d/ [d<sup>ˀ</sup>] Voiced unreleased alveolar plosive; occurs word-finally and at a syllable boundary before a voiceless dental plosive:

/totud/ [ʔɔ.ʔud<sup>ˀ</sup>] 'knee'

/potudtur/ [pɔ.ʔud<sup>ˀ</sup>.ʔtur] 'to push'

[d] Voiced alveolar plosive; occurs word-medially as the second member of a consonant cluster following a homorganic nasal:

/tandus/ [ʔtan.ʔdus] 'spear'

[ɖ] Voiced alveolar implosive; occurs elsewhere:

/darun/ [ɖa.ʔrun] 'rain'

/toduŋ/ [ʔɔ.ʔduŋ-] 'nose'

/k/ [k<sup>ˀ</sup>] Voiceless unreleased postvelar plosive; occurs word-finally after a non-front vowel:

/manuk/ [ma.nuk<sup>ˀ</sup>] 'chicken'

[k<sup>ˀ</sup>] Voiceless unreleased velar plosive; occurs word-finally after a front vowel:

/tobik/ [ʔɔ.βik<sup>ˀ</sup>] 'side'

[k] Voiceless velar plosive; occurs where preceded and followed by a front vowel (or if in word-initial position, where followed by a front vowel):

/kirop/ [ki.rɔp<sup>ˀ</sup>] 'eyelash'

/tikiw/ [ti.kiw] 'tail'

[k̠] Voiceless postvelar plosive; occurs elsewhere:

/kajab/ [ka.ʔab<sup>ˀ</sup>] 'shoulder'

/lukap/ [lu.ʔkap<sup>ˀ</sup>] 'sole of foot'

/kaŋkab/ [ʔkaŋ-kaβ<sup>ˀ</sup>] 'chest'

/g/ [g<sup>-ˀ</sup>] Voiced unreleased postvelar plosive<sup>4</sup>; occurs word-finally and at the syllable boundary before a voiceless velar plosive after a non-front vowel:

/solug/ [ʔsɔ.lug<sup>-ˀ</sup>] 'trail'

/lagkaw/ [ʔlag<sup>-ˀ</sup>.kaw] 'rice store'

[g<sup>ˀ</sup>] Voiced unreleased velar plosive; occurs word-finally and at the syllable boundary before a voiceless velar plosive after a front vowel:

/weeg/ [ʔwɛ.ɛg<sup>ˀ</sup>] 'water'

/tolig/ [ʔɔ.ʔlig<sup>ˀ</sup>] 'wall'

/ʔoligkaŋ/ [ʔɔ.lig<sup>ˀ</sup>.kaŋ-] 'interesting'

<sup>4</sup> The diacritic is shown after the phonetic symbol for clarity.

- [g] Voiced velar plosive; occurs where preceded and followed by a front vowel:  
/torigiʔ/ [tɔ.ri.'gɪʔ] 'house post'
- [g-] Voiced postvelar plosive; occurs elsewhere:  
/gontod/ [¹g-ɔn.'tɔd] 'heel'  
/gamut/ [g-a.'muʔ] 'root'  
/ragaʔ/ [ra.'g-aʔ] 'kind of basket'
- /ʔ/ [ʔ] Glottal plosive; occurs in all positions. Word-medially it marks a morpheme boundary, It is frequently found between a prefix and a root, but can also occur between a root and a suffix:  
/ʔopod/ [ʔɔ.'pɔd] 'ten'  
/watuʔ/ [wa.'tʊʔ] 'stone'  
/taʔasok/ [¹ta.'ʔa.'sɔk] 'dibble stick'  
/ʔandaaʔon/ [ʔan.'da.a.'ʔɔn] 'visit'
- /m/ [m] Voiced bilabial nasal:  
/manuk/ [ma.'nuʔ] 'chicken'  
/gamut/ [g-a.'muʔ] 'root'  
/simpon/ [¹sim.'pɔn] 'short trousers'  
/karam/ [ka.'ram] 'toe'
- /n/ [n] Voiced alveolar nasal:  
/nipon/ [ni.'pɔn] 'tooth'  
/munuŋ/ [mu.'nuŋ-] 'lips'  
/tandus/ [¹tan.'dus] 'spear'  
/loŋon/ [lɔ.'ŋ-ɔn] 'arm and hand'
- /ŋ/ [ŋ] Voiced velar nasal where preceded and followed by a front vowel (or if in word-initial position, where followed by a front vowel)  
/ŋiŋil/ [ŋi.'ŋil] 'food left on face'
- [ŋ-] Voiced postvelar nasal elsewhere:  
/ŋaran/ [ŋ-a.'ran] 'name'  
/tambaŋ/ [¹tam.'baŋ-] 'deer'
- /l/ [l] Voiced alveolar lateral:  
/laŋaw/ [la.'ŋ-aw] 'fly'  
/palad/ [pa.'lad] 'palm of hand'  
/tapol/ [ta.'pɔl] 'husk of rice'
- /r/ [r] Voiced alveolar trill; occurs word-initially and word-finally:  
/ratuʔ/ [ra.'tʊʔ] 'durian'  
/saŋkir/ [¹saŋ-.'kɪr] 'cup'
- [ɾ] Voiced alveolar flap; occurs intervocalically:  
/sarup/ [sa.'rup] 'wind'
- /s/ [s] Voiceless alveolar grooved fricative:  
/sarup/ [sa.'rup] 'wind'  
/tosuŋ/ [tɔ.'suŋ-] 'mortar'  
/sansag/ [¹san.'sag-] 'bark of tree'  
/topos/ [tɔ.'pɔs] 'lungs'
- /d͡ʒ/ [d͡ʒ] Voiced palatal affricate; only occurs word-medially in syllable initial position<sup>5</sup>:  
/land͡ʒaŋ/ [¹lan.'d͡ʒaŋ-] 'rice pot'
- /w/ [w] Voiced labial-velar semivowel:  
/wotis/ [wɔ.'tɪs] 'calf of leg'  
/tawan/ [ta.'wan] 'sky'  
/tapow/ [ta.'pɔw] 'lime'
- /j/ [j] Voiced palatal semivowel:  
/kajab/ [ka.'jab] 'shoulder'  
/tanaj/ [ta.'naj] 'termite'  
/joposon/ [jɔ.pɔ.'sɔn] 'to be wet'<sup>6</sup>

### 2.1.2 Vowels

/i/ [i] High front unrounded vowel; occurs in open syllables:

/tinan/ [ti.'nan] 'body'

[ɪ] Near high front unrounded vowel; occurs elsewhere:

/togis/ [tɔ.'g-ɪs] 'sand'

/simpon/ [¹sim.'pɔn] 'short trousers'

/u/ [u] High back rounded vowel; occurs in open syllables:

/tutok/ [tu.'tɔk] 'brain'

/ʔoku/ [¹ʔɔ.ku] 'r'

[ʊ] Near high back rounded vowel; occurs elsewhere:

<sup>5</sup> The phoneme /d͡ʒ/ is quite common in personal names and occurs in loan words word-initially.

<sup>6</sup> Initial 'j' is extremely uncommon.

/tandus/	[ʔan.'dus]	'spear'	V_V /ʔapat/	[ʔa.'paʔ]	'four'
/dunsul/	[ʔun.'sul]	'hammer'	/kaban/	[ka.'ʔan]	'container'
/o/ [ə] Mid central unrounded vowel; occasionally used in unstressed syllables in free variation with [ɔ]:			Vm_V /simpon/	[ʔim.'pən]	'short trousers'
			/kombos/	[kəm.'bəs]	'rice wine'
/ɔ/ Near open back rounded vowel; occurs elsewhere:			<b>/b/ vs. /m/</b>		
			#_ /badiʔ/	[ʔa.'diʔ]	'market'
/momoros/	[mə.mə.'rəs]	'speak'	/manuk/	[ma.'nuk]	'chicken'
/sorunding/	[sə.run.'dun-]	'cloth headcover'	_# /tantob/	[ʔan.'ʔəb]	'fence'
/ə/ [ə] Mid central unrounded vowel; occasionally used in unstressed syllables in free variation with [a]:			/tontom/	[ʔən.'ʔəm]	'floor joist'
			V_V /rabas/	[ra.'ʔas]	'forehead'
/togis/	[ʔə.'g-is]	'sand'	/ramat/	[ra.'maʔ]	'ring'
/matoʔ/	[ma.'ʔəʔ]	'eye'	<b>/b/ vs. /w/</b>		
/tapow/	[ʔa.'pəw]	'lime for chewing'	_# /kaŋkab/	[kəŋ-'kab]	'chest'
/a/ [ə] Mid central unrounded vowel; occasionally used in unstressed syllables in free variation with [a]:			/wakaw/	[wa.'kəw]	'rattan'
			#_ /badiʔ/	[ʔa.'diʔ]	'market'
/mangagamit/	[mə.ŋ-a.g-a.'mɪʔ]	'catch animal'	/watuʔ/	[wa.'tuʔ]	'stone'
/tikagaŋ/	[ti.kə.'g-aŋ-]	'rib'	V_V /tobuʔ/	[ʔə.'bʊʔ]	'sugarcane'
[a] Low central unrounded vowel; occurs elsewhere:			/tawuʔ/	[ʔa.'wuʔ]	'ashes'
			#_ /paraj/	[pa.'raj]	'unhusked rice'
/tanaʔ/	[ʔa.'naʔ]	'ground'	/walaj/	[wa.'ləj]	'house'
/raat/	[ra.'aʔ]	'sea'	_# /kirop/	[ki.'rəp]	'eyelash'
/e/ [ɛ] Near low front unrounded vowel: <sup>7</sup>			/kudow/	[ku.'dəw]	'eyebrow'
			V_V /kapuk/	[ka.'puk]	'kapok tree'
/deen/	[dɛ.'ɛŋ]	'betel leaf'	/tawuʔ/	[ʔa.'wuʔ]	'ashes'
/seera/	[sɛ.'ɛraʔ]	'when'	<b>/p/ vs. /m/</b>		

## 2.2 Phoneme Contrast

### 2.2.1 Consonants

#### /p/ vs. /b/

#_ /paraj/	[pa.'raj]	'unhusked rice'
/badiʔ/	[ʔa.'diʔ]	'market'
_# /sakup/	[sa.'kup]	'spade'
/sokub/	[sə.'kub]	'eyelid'

V_V /sopuk/	[sə.'puk]	'blow pipe'
/romus/	[rə.'mus]	'kind of rattan'

#### /m/ vs. /w/

#_ /matoʔ/	[ma.'ʔəʔ]	'eye'
/watuʔ/	[wa.'tuʔ]	'stone'
_# /karam/	[ka.'ram]	'toe'
/tadaw/	[ʔa.'daw]	'day'
V_V /ʔaman/	[ʔa.'man]	'uncle'
/tawan/	[ʔa.'wan]	'sky'

#### /d/ vs. /t/

#_ /darun/	[da.'run]	'rain'
/talum/	[ʔa.'lum]	'mat'

<sup>7</sup> Most words containing this phoneme are cognate with Central Dusun where the /e/ is represented by /oi/ where it occurs in affixes, and /ai/, /ahi/ or /ohi/ where it occurs in roots.

<i>Tobilung</i>	<i>Central Dusun</i>	<i>English</i>
/peenijon/	/poinijon/	'to be living'
/deen/	/daing/	'betel leaf'
/maleen/	/molothing/	'adult'

There are also cognates with Malay:

<i>Tobilung</i>	<i>Malay</i>	<i>English</i>
/teeʔ/	/tahi/	'dung'

#	/surud/	[su.'rudʷ]	'comb'	<b>/l/ vs. /n/</b>			
	/susut/	[su.'suʔ]	'below house'	#	/lanas/	[la.nas]	'original'
V_V	/raduʔ/	[ra.'dʊʔ]	'plough'		/natad/	[na.'tadʷ]	'area near house'
	/watuʔ/	[wa.'tʊʔ]	'stone'	#	/boŋol/	[bɔ.'ŋ-ɔl]	'otter'
Vn_V	/tundunduʔ/	[tʊn.dʊn.'dʊʔ]	'heart'		/loŋon/	[lɔ.'ŋ-ɔn]	'arm and hand'
	/tunturuʔ/	[tʊn.tʊ.'ruʔ]	'finger'	V_V	/waluʔ/	[wa.'luʔ]	'eight'
					/manuk/	[ma.'nuʔ]	'chicken'
				<b>/d/ vs. /l/</b>			
#	/duluʔ/	[dʊ.'luʔ]	'living room'	#	/darun/	[dɑ.'run]	'rain'
	/nuluw/	[nu.'luw]	'mountain'		/lasuʔ/	[la.'suʔ]	'sweat'
#	/surud/	[su.'rudʷ]	'comb'	#	/ʔopod/	[ʔɔ.'pɔdʷ]	'ten'
	/darun/	[dɑ.'run]	'rain'		/tapol/	[tɑ.'pɔl]	'husk of rice'
V_V	/ladoʔ/	[la.'dɔʔ]	'chili'	V_V	/toduŋ-/	[tɔ.'dʊŋ-]	'nose'
	/tanoʔ/	[tɑ.nɔʔ]	'let us'		/solug/	[sɔ.'luʔ]	'trail'
				<b>/d/ vs. /r/</b>			
#	/sarup/	[sa.'rupʷ]	'wind'	#	/darun/	[dɑ.'run]	'rain'
	/darun/	[dɑ.'run]	'rain'		/raduʔ/	[ra.'dʊʔ]	'plough'
#	/topos/	[tɔ.'pɔs]	'lungs'	#	/baŋkad/	[bɑŋ-'kɑdʷ]	'shirt'
	/ʔopod/	[ʔɔ.'pɔdʷ]	'ten'		/paŋkar/	[paŋ-'kɑr]	'raft'
V_V	/tosuŋ/	[tɔ.'suŋ-]	'mortar'	V_V	/ladoʔ/	[la.'dɔʔ]	'chili'
	/toduŋ/	[tɔ.'dʊŋ-]	'nose'		/parok/	[pa.'rɔkʷ]	'husk of rice' <sup>8</sup>
Vn_V	/sansut/	[sɑn.'suʔ]	'loin cloth'				
	/tandus/	[tɑn.'dʊs]	'spear'				
				<b>/n/ vs. /r/</b>			
#	/nuluw/	[nu.'luw]	'mountain'	#	/natad/	[na.'tadʷ]	'area near house'
	/tuluʔ/	[tʊ.'luʔ]	'head'		/ralan/	[ra.'lan]	'road'
#	/tinan/	[ti.'nan]	'body'	#	/darun/	[dɑ.'run]	'rain'
	/balat/	[ba.'laʔʷ]	'sea cucumber'		/sadur/	[sa.'dʊr]	'water melon'
V_V	/manuk/	[ma.'nuʔ]	'chicken'	V_V	/tanaj/	[tɑ.'naj]	'termite'
	/watuʔ/	[wa.'tʊʔ]	'stone'		/paraj/	[pa.'raʔ]	'unhusked rice'
				<b>/r/ vs. /s/</b>			
#	/nuluw/	[nu.'luw]	'mountain'	#	/raduʔ/	[ra.'dʊʔ]	'plough'
	/susut/	[su.'suʔ]	'below house'		/sadaʔ/	[sa.'dɑʔ]	'fish'
#	/tinan/	[ti.'nan]	'body'	#	/sadur/	[sa.'dʊr]	'water melon'
	/kanas/	[kɑ.'nas]	'wild pig'		/natus/	[na.'tʊs]	'hundreds'
V_V	/tanud/	[tɑ.'nʊdʷ]	'go with'	V_V	/surud/	[su.'rudʷ]	'comb'
	/tasuʔ/	[tɑ.sʊʔ]	'dog'		/susut/	[su.'suʔ]	'below house'
				<b>/l/ vs. /r/</b>			
#	/sarup/	[sa.'rupʷ]	'wind'	#	/loŋon/	[lɔ.'ŋ-ɔn]	'arm and hand'
	/lasuʔ/	[la.'suʔ]	'sweat'		/rogon/	[rɔ.'g-ɔn]	'spirit'
#	/topos/	[tɔ.'pɔs]	'lungs'	#	/badul/	[ba.'dʊl]	'pith'
	/tapol/	[tɑ.'pɔl]	'husk of rice'		/sadur/	[sa.'dʊr]	'water melon'
V_V	/tasuʔ/	[tɑ.sʊʔ]	'dog'				
	/talam/	[tɑ.'lum]	'mat'				

<sup>8</sup> Same meaning as /tapol/

V_V /palad/	[pa.'ladʔ]	'palm of hand'	_# /weeg/	[ʔwɛ.ɛŋʔ]	'water'
/paraj/	[pa.'raj]	'unhusked rice'	/deen/	[ʔdɛ.ɛŋ]	'betel leaf'
			V_V /rogon/	[rɔ.'g-ɔŋ]	'spirit'
<b>/t/ vs. /r/</b>			/loŋon/	[lɔ.'ŋ-ɔŋ]	'arm and hand'
#_ /tuluʔ/	[ʔu.'luʔ]	'head'			
/rumun/	[ru.'mun]	'nest'	<b>/k/ vs. /ʔ/</b>		
_# /riŋkat/	[ʔriŋ.'kətʔ]	'small pot'	#_ /kaban/	[k̄a.'ʔan]	'container'
/paŋkar/	[paŋ-'kar]	'raft'	/ʔapat/	[ʔa.'paʔʔ]	'four'
V_V /daton/	[d̄a.'tɔŋ]	'we'	_# /guluk/	[g-u.'lɔkʔ]	'chopper'
/darun/	[d̄a.'ruŋ]	'rain'	/tuluʔ/	[ʔu.'luʔ]	'head'
<b>/t/ vs. /l/</b>			<b>/g/ vs. /ʔ/</b>		
#_ /tasuʔ/	[ʔa.'suʔ]	'dog'	#_ /gapas/	[g-a.'pas]	'cotton fibre'
/lasuʔ/	[la.'suʔ]	'sweat'	/ʔapat/	[ʔa.'paʔʔ]	'four'
_# /sansut/	[ʔsan.'sɔʔʔ]	'loincloth'	_# /solug/	[ʔsɔ.'lɔg-ʔ]	'trail'
/dunsul/	[ʔd̄uŋ.'sul]	'hammer'	/toluʔ/	[ʔɔ.'luʔ]	'thrice'
V_V /watuʔ/	[wa.'ʔuʔ]	'stone'	<b>/ʔ/ vs. /ŋ/</b>		
/waluʔ/	[wa.'luʔ]	'eight'	#_ /ʔatus/	[ʔa.'ʔus]	'a hundred'
<b>/d̄ʒ/ vs. /d/</b>			/ŋaran/	[ŋ-a.'ran]	'name'
Vn_V /land̄ʒan/	[ʔlan.'d̄ʒan-]	'rice pot'	_# /teeʔ/	[ʔtɛ.ɛʔ]	'dung'
/ʔandan/	[ʔan.'dan-]	'of course'	/deen/	[ʔdɛ.ɛŋ]	'betel leaf'
<b>/d̄ʒ/ vs. /s/</b>			<b>/m/ vs. /n/</b>		
V_V /pond̄ʒuʔ/	[pɔŋ.'d̄ʒuʔ]	'turtle'	#_ /matoʔ/	[ma.'ʔɔʔ]	'eye'
/sansut/	[ʔsan.'sɔʔʔ]	'loincloth'	/natok/	[na.'ʔɔkʔ]	'sago'
<b>/g/ vs. /k/</b>			_# /karam/	[k̄a.'ram]	'toe'
#_ /gawis/	[g-a.'wis]	'machete'	/ŋaran/	[ŋ-a.'ran]	'name'
/karis/	[k̄a.'ris]	'dagger'	V_V /gamut/	[g-a.'muʔʔ]	'root'
_# /solug/	[ʔsɔ.'lɔg-ʔ]	'trail'	/manuk/	[ma.'nuʔkʔ]	'chicken'
/guluk/	[g-u.'lɔkʔ]	'chopper'	<b>/n/ vs. /ŋ/</b>		
V_V /luguʔ/	[lu.'g-uʔ]	'heartwood'	#_ /natok/	[na.'ʔɔkʔ]	'sago'
/dukuʔ/	[d̄u.'kɔʔ]	'puppy'	/ŋaran/	[ŋ-a.'ran]	'name'
Vŋ_V /tingaton/	[ʔŋŋ-g-a.'ʔɔŋ]	'areca nut'	_# /tawan/	[ʔa.'wan]	'sky'
/tiŋkolob/	[ʔŋŋ-kɔ.'lɔbʔ]	'wrap round skirt'	/bawan/	[ʔa.'wan-]	'river'
<b>/k/ vs. /ŋ/</b>			V_V /tanaj/	[ʔa.'naj]	'termite'
#_ /karam/	[k̄a.'ram]	'toe'	/sanaj/	[sa.'ŋ-aj]	'shadow'
/ŋaran/	[ŋ-a.'ran]	'name'	<b>/m/ vs. /ŋ/</b>		
_# /manuk/	[ma.'nuʔkʔ]	'chicken'	#_ /matoʔ/	[ma.'ʔɔʔ]	'eye'
/munuŋ/	[mu.'nuŋ-]	'lips'	/ŋasuʔ/	[ŋ-a.'suʔʔ]	'eyetooth'
V_V /wakaw/	[wa.'k̄aw]	'rattan'	_# /talum/	[ʔa.'lɔm]	'mat'
/sanjaw/	[sa.'ŋ-aw]	'animal horn'	/koluŋ/	[k̄ɔ.'lɔŋ-]	'ankle'
<b>/g/ vs. /ŋ/</b>			V_V /lamaj/	[la.'maj]	'talisman'
#_ /gataʔ/	[g-a.'ʔaʔ]	'frog'	/lanjaw/	[la.'ŋ-aw]	'fly'
/ŋaran/	[ŋ-a.'ran]	'name'			

<b>/j/ vs. /w/</b>			
_# /saŋaj/	[sa.ŋ-aj]	'shadow'	
/laŋaw/	[la.ŋ-aw]	'fly'	
V_V /lajoʔ/	[la.jɔʔ]	'ginger'	
/kawoʔ/	[ka.ʔwɔʔ]	'wing'	

C__C /pooʔ/	[pɔ.ɔʔ]	'thigh'
/puun/	[pu.ʊn]	'tree'
<b>/e/ vs. /a/</b>		
C__C /ʔaleed/	[ʔa.ʔe.ɛd]	'long, of time'
/ʔalaab/	[ʔa.ʔa.ab]	'wide'

**2.2.2 Vowels**

<b>/i/ vs. /a/</b>		
C_CV /pilat/	[pi.ʔaɪ]	'scar'
/palad/	[pa.ʔad]	'palm of hand'
C_C# /gonit/	[g-ɔ.ŋɪt]	'lightning'
/galat/	[g-a.ʔaɪ]	'pocket knife'

<b>/e/ vs. /i/</b>		
C__C /pees/	[pe.es]	'knife'
/biis/	[bi.is]	'saliva'

<b>/o/ vs. /a/</b>		
C_CV /loŋon/	[lɔ.ŋ-ɔn]	'arm and hand'
/laŋod/	[la.ŋ-ɔd]	'between nodes'
C_C# /natok/	[na.ɲɔk]	'sago'
/batak/	[ba.ʔak]	'creature'
CV_C /guol/	[g-u.ɔl]	'yam'
/luak/	[lu.ʔak]	'back of knee'
C__C /rooʔ/	[rɔ.ɔʔ]	'chin'
/raaʔ/	[ra.aʔ]	'blood'

<b>/e/ vs. /o/</b>		
C__C /teeʔ/	[te.ɛʔ]	'dung'
/toon/	[tɔ.ɔn]	'kind of trap'

<b>/u/ vs. /a/</b>		
C_CV /kulat/	[ku.ʔaɪ]	'mushroom'
/galat/	[g-a.ʔaɪ]	'pocket knife'
C_C# /munuŋ/	[mu.ɲuŋ-]	'lips'
/tulaŋ/	[tu.ʔaŋ-]	'bone'

<b>/e/ vs. /u/</b>		
C__C /pees/	[pe.es]	'knife'
/puun/	[pu.ʊn]	'tree'

**3. Syllables**

**3.1 Syllable Types**

All Tobilung syllables have a vowel nucleus. There are no vowel-initial words and hence no contrast between vowel and glottal-initial words. Vowel-final words are extremely uncommon and have only been observed in minor lexical categories such as pronouns and focus markers. The many apparent vowel final words in major lexical categories actually have a final glottal stop.

The vast majority of root forms have 2 syllables CV(C).(C)V(C), but there are nouns with at least 4 syllables, which sometimes contain fossilized affixes.

**Table 3. Distribution of syllable types**

Syllable type	initial syllable	medial syllables	final syllable
V		/bi.tu.a.non/	
CV	/ta.suʔ/	/ko.su.laʔ/	/o.ku/
VC		/ko.on.sok/	/ra.at/
CVC	/sim.pon/	/bu.lun.tuŋ/	/su.sut/

<b>/i/ vs. /u/</b>		
C_CV /tinan/	[ti.ʔan]	'body'
/tulaŋ/	[tu.ʔaŋ-]	'bone'
C_C# /tolig/	[tɔ.ʔiŋ]	'wall'
/solug/	[sɔ.ʔuŋ-]	'trail'
C_VC /lias/	[li.ʔas]	'plant variety'
/luak/	[lu.ʔak]	'back of knee'

<b>/i/ vs. /o/</b>		
C_CV /nipon/	[ni.ʔɔn]	'tooth'
/topos/	[tɔ.ʔɔs]	'lungs'
C_C# /togis/	[tɔ.ʔg-is]	'sand'
/lokos/	[lɔ.ʔkɔs]	'stream'

/bi.tu.a.non/	[bi.tu.ʔa.nɔn]	'widow'
/tasuʔ/	[tɔ.suʔ]	'dog'
/ko.su.laʔ/	[kɔ.su.ʔlaʔ]	'loofah'
/ʔo.ku/	[ʔɔ.ku]	'I'
/ko.on.sok/	[kɔ.ɔn.sɔk]	'to cook'
/ra.at/	[ra.aɪ]	'sea'

<b>/o/ vs. /u/</b>		
C_CV /solug/	[sɔ.ʔuŋ-]	'trail'
/suruk/	[su.ʔuɔk]	'nape of neck'
C_C# /kawoʔ/	[ka.ʔwɔʔ]	'wing'
/tawuʔ/	[ta.ʔwɔʔ]	'ashes'

/sim.pon/	['sim.'pɔn]	'short trousers'
/bu.lun.tuŋ/	[ʃu.lun.tuŋ]	'rainbow'
/su.sut/	[su.'sɯʔ]	'below house'

### 3.2 Monosyllabic words

Single-syllable words have only been found within the minor lexical categories such as pronouns, connectors and focus markers. (These classes also include words with more than one syllable). No single-syllable nouns (even loan words) have so far been found.

CVC	/ʔom/	[ʔɔm]	'and, so that'
CVC	/dot/	[dɔʔ]	'focus marker'

### 3.3 Disyllabic words

As mentioned above, disyllabic roots predominate in Tobilung. The most common syllable pattern is CV.CVC. Others include CV.VC, CV.CV and CVC.CVC:

CV.CV	/ʔo.ku/	[ʔɔ.ku]	'I'
CV.CVC	/surud/	[su.'rɯdʔ]	'comb'
CV.VC	/raat/	[ra.aʔ]	'sea'
CVC.CVC	/tantob/	[ʔan.'tɔbʔ]	'fence'

### 3.4 Three-syllable words

There are a number of syllable patterns that can occur in three-syllable words:

CV.CV.CVC	/takanoʔ/	[ʔa.kə.nɔʔ]	'cooked rice'
CV.CV.VC	/galaap/	[g-a.'la.apʔ]	'wanderer'
CVC.CV.CVC	/tiŋgaton/	[tiŋ.g-a.'tɔn]	'areca nut'
CV.CVC.CVC	/buluntuŋ/	[ʃu.lun.'tuŋ-]	'rainbow'

### 3.5 Words of four syllables or more

There are correspondingly more patterns that can occur with four-syllable words, or more, but these words are relatively rare in occurrence:

CVC.CV.CV.CVC	/bambajaŋan/	[ʃam.ba.ja.'ŋ-an]	'butterfly'
CV.CV.CVC.CVC	/tanansad/	[ʔa.na.nan.'sədʔ]	'leopard'
CV.CV.CV.CVC	/sirurukut/	[si.ru.ru.'kɯʔ]	'kind of monkey'
CV.CVC.CV.CVC	/bolinsakog/	[ʃɔ.lɪn.'sa.kɔg-ʔ]	'shoulder blade'
CVC.CV.CV.VC	/tobpineeʔ/	[ʔɔb'.pi.'ne.eʔ]	'sibling'
CVC.CV.CV.CV.CVC	/tompokikijuʔ/	[ʔɔm.pɔ.ki.ki.'juʔ]	'dragonfly'

## 4. Distribution of phonemes

All consonant phonemes occur syllable-initially and syllable-medially (though /j/ is rare in word-initial position). All consonant phonemes are found syllable-finally, except /d̥ʒ/.

### 4.1 Consonant clusters

Consonant clusters occur at syllable boundaries. They can occur inside a root or across morpheme boundaries as a result of affixation. Various kinds of consonant clusters are represented in the data:

- A nasal followed by its homorganic voiced or voiceless plosive. This type predominates in the data:

/bambajaŋan/	[ʃam.ba.ja.'ŋ-an]	'butterfly'
/gontod/	[g-ɔn.'tɔdʔ]	'heel'
/tiŋgaton/	[tiŋ.g-a.'tɔn]	'areca nut'

- An alveolar nasal followed by its homorganic fricative or affricate:

/sansag/	[san.'sag-ʔ]	'bark of tree'
/pond̥ʒuʔ/	[pɔn.'d̥ʒuʔ]	'turtle'

- A voiced plosive followed by a voiceless plosive at the same place of articulation:

/mabparaŋ/	[mab'pa.'raŋ-]	'crow'
/potudtur/	[pɔ.tud'.tʰur]	'to push'

- A voiced alveolar plosive followed by a homorganic fricative:

/monodsok/	[mɔ.nɔd'.sɔkʔ]	'to poke'
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### 4.2 Vowel clusters

Vowels only cluster across syllable boundaries. The sequence /oa/ is not possible because of the operation of 'vowel harmony'. /e/ has not been found in combination with other vowels (see 7. Vowel harmony).

Table 4. Vowel clusters

	/a/	/i/	/o/	/u/	/e/
/a/	/ta.ap/	----	----	----	----
/i/	/mi.'ak/	/'bi.ik/	/li.'os/	/mo.gi.um/	----
/o/	----	----	/'po.oʔ/	----	----
/u/	/lu.'ak/	----	/gu.'ol/	/'pu.un/	----
/e/	----	----	----	----	/'we.eg/

The lexical items mentioned above are as follows:

/taap/	[ʔa.apʔ]	'roof'
/miak/	[ʔmi.akʔ]	'kind of oil'
/biik/	[ʔbi.ikʔ]	'young rat'
/lios/	[li.ʔos]	'louse egg'
/mo.gi.um/	[mɔ.g-i.'um]	'look for'
/pooʔ/	[ʔpɔ.ʔ]	'thigh'
/luak/	[lu.'akʔ]	'back of knee'
/guol/	[g-u.'ɔl]	'yam'
/puun/	[ʔpu.un]	'tree'
/weeg/	[ʔwe.egʔ]	'water'

It should be noted that for most of these vowel clusters, there is fair contrast (and sometimes minimal pairs) with the same vowels separated by a semi-vowel. These contrasts are clearly recognized by local speakers.

[lu.'akʔ]	'back of knee'	[lu.'waŋ-]	'hole'
[ʔmi.akʔ]	'kind of oil'	[pi.'jakʔ]	'chick'
[li.ʔos]	'louse egg'	[ti.'jɔs]	'a boil'
[g-u.'ɔl]	'yam'	[g-u.'wɔl]	'mix'
[mɔ.g-i.'um]	'look for'	[gi.'yukʔ]	'worm' <sup>9</sup>

## 5. Interpretation

### 5.1 Consonant or vowel interpretation

#### 5.1.1 Syllable-final off-glides

Syllable-final off-glides such as the examples given below have been interpreted as semivowels. These words are the same length as unambiguous two-syllable words and the off-glides serve as syllable margins. If the off-glide is interpreted as a vowel, this requires either the introduction of a new syllable type with a complex vowel nucleus, or that the off-glide becomes the nucleus of an additional syllable.

<i>Interpreted</i>	<i>Uninterpreted</i>	
[laŋaw]	[la.'ŋ-a <sup>u</sup> ]	'fly'
[tanaj]	[ta.'na <sup>i</sup> ]	'termite'

<sup>9</sup> These two words are not particularly close. In fact /mo.gi.um/ is the only example found of the sequence 'iu'. Not a single example of 'ui' is represented in data collected.

Off-glides consisting of phonemically geminate high vowel clusters have also been interpreted as ending in a semivowel. These words are extremely rare, but again have the same duration as unambiguous two-syllable words. Interpreting the final vowel as a vowel nucleus would imply an additional syllable.

<i>Interpreted</i>	<i>Uninterpreted</i>	
[nuluw]	[nu.'lu <sup>u</sup> ]	'mountain'

#### 5.1.2 Word-medial vowel clusters

Only one example of a word-medial vowel cluster (with two high vowels) has been found. The second vowel can clearly not be interpreted as a consonant. Either this would result in a syllable without a vowel or a new syllable pattern CVCC.

<i>Interpreted</i>	<i>Uninterpreted</i>	
[mogium]	[mɔ.g-i.'um]	'look for'

In words such as the examples below, interpreting the semivowel as a vowel would imply a third syllable.

However such words have the same duration as unambiguous two-syllable words. Thus the semi-vowel functions as a syllable margin and is followed by the vowel nucleus.

<i>Interpreted</i>	<i>Uninterpreted</i>	
[kajuʔ]	[ka.'juʔ]	'wood'
[tawuʔ]	[ta.'wuʔ]	'ashes' <sup>10</sup>

### 5.2 Vowel interpretation: Unit or sequence

#### 5.2.1 'Long' vowels in roots

Sometimes a long vowel occurs within a root word and it would be possible to interpret such words either as CV.VC or as CV.C. Words such as those below have the same duration as unambiguous two-syllable words. They are fairly uncommon and it is unnecessary to introduce a new syllable type to account for the data.

<sup>10</sup> Note from the above vowel cluster chart that the sequences 'ou' and 'au' do not occur in the data, but there are many examples of words where the sequence 'owu' and 'awu' are found.

CV.VC	/weeg/	['wɛ.ɛg']	'water'
CV.VC	/raat/	['ra.aʔ']	'sea'
CV.VC	/pooʔ/	['pɔ.ɔʔ']	'thigh'

When the sequence consists of two similar high vowel phonemes, the two different allophones of the same phoneme can clearly be heard, each being the nucleus of a syllable. The presence of two clear sounds is additional evidence for interpreting the 'long' vowel as CV.VC.

CV.VC	/puun/	['pu.ʊn]	'tree'
CV.VC	/biik/	['bi.i.k']	'young rat'

Kroeger (1993) says that in Kimaragang 'the glottal plosive can never be inserted between elements of a vowel cluster in words such as /tooluʔ/ 'pestle' and the vowel sequence is scarcely longer than a simple /V/ in normal speech'. However, in Tobilung, the two vowels are sometimes separated by a glottal and in such cases these vowel sequences cannot be analysed as long vowels. Such words always consist of a prefix and verb root.

/toʔoluʔ/	[tɔ.'ʔɔ.luʔ]	'pestle'
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Glottals separating geminate vowels do not occur in roots or between verb roots and following affixes in Tobilung.

### 5.2.2 Contiguous dissimilar vowels in roots

Similar arguments apply to non-geminate vowel clusters. In words such as those below, the two vowels have similar weight and should therefore be interpreted as nuclei of adjoining syllables rather than one syllable with a glide:

/luak/	[lu.'ak']	'back of knee'
/guol/	[g-u.'ɔl]	'yam'

### 5.2.3 Contiguous 'shortened' vowels

Affixation gives rise to sequences of 'shortened' vowels in Tobilung. These have all been interpreted as vowel sequences for the following reasons:

- They occur only in the context of affixation and can therefore be distinguished from the 'long' vowels

that occur in word roots.

- Using two 'shortened' vowels clearly delineates the boundary between the morphemes and except in the case of verb roots with initial 'i' or 'u' preserves the initial vowel of the word root.
- Using a lengthened vowel would create a new syllable pattern.

CV.VC.CVC	/ʔoonsom/	[ʔɔ.ʊn.'sɔm]	'to be sour'
CV.VC.CVC	/noonsok/	['nɔ.ʊn.'sɔk']	'to be already ripe'
CV.CV.V.CVC	/naawiʔ/	['na.a.wiʔ]	'to be finished'
CV.VC.CVC	/keentɔŋ/	['kɛ.ɛn.'tɔŋ]	'to be able to see'

### 5.3 Consonant cluster or unit interpretation

Consonant clusters always constitute an ambiguous homorganic sequence. However, consonant clusters are not found word-initially, so they have been interpreted as sequences.

/gontod/	['g-ɔn.'tɔd']	'heel'
/tingaton/	[tɪŋ-g-a.'tɔn]	'areca nut'
/sansag/	['san.'sag-']	'bark of tree'
/mabparan/	[mab'.pa.'raŋ-]	'crow'

### 5.4 Syllable interpretation

If the two consonants either side of the syllable boundary in the words below were included before the syllable break this would contravene the syllable onset rule and create a new syllable type CVCC. If the two consonants were included after the syllable break, a new syllable type CCVC would be created and as consonant clusters never occur word-initially, the word-initial onset rule would also be broken.

/sansag/	['san.'sag-']	'bark of tree'
/simpon/	['sm.'pɔn]	'short trousers'
/mogkukut/	[mɔg-'ku.'kɔt']	'to scratch'

## 6. Morphophonemics

This section gives some preliminary comments about morphophonemic processes seen in verbs.

Vowel harmony and neutralization are also operative as a bi-product of affixation and are described in the next section. The

prefixes /moN/ and /ko/ have been examined. The data is phonemic.

**6.1 The /moN/ prefix**

The ‘N’ symbolizing the nasal consonant in the prefix /moN/ assimilates to the point of articulation of the root, creating allomorphs. Note that in some cases a further adjustment is necessary.

**Table 5. The /moN/ prefix**

nasal		initial root consonant		allomorph of N	other adjustments
N	+	k	→	ŋ	
N	+	ʔ	→	ŋ	
N	+	b, p, m, w	→	m	
N	+	s, t, n	→	n	
N	+	g, d, l, r	→	ŋ	+ o + C

In most cases the nasal absorbs the original initial root consonant. However, in the case of /g/, /d/, /l/ and /r/, an epenthetic vowel follows the nasal /ŋ/ and the initial consonant is retained. In the table above, ‘o’ represents the epenthetic vowel and ‘C’ the initial root consonant. The underlying form of the vowel is /o/ but with vowel harmony the /o/ may become /a/. The verb examples

below show the application of these rules. (See 7. Vowel Harmony.)

**Table 6. Formation of verbs with the /moN/ prefix**

Verb root	Meaning	Formula	Final form
kogos	'to tie'	moNkogos	/mo.ŋo.gos/
ʔirak	'to laugh'	moNirak	/mo.ŋi.rak/
wonsoj	'to make'	moNwonsoj	/mo.mon.soj/
pataj	'to kill'	moNpataj	/ma.ma.taj/
sigup	'to smoke'	moNsigup	/mo.ni.gup/
tolon	'to swallow'	moNtolon	/mo.no.lon/
gamit	'to catch'	moNgamit	/ma.ŋa.ga.mit/
rubaʔ	'to meet'	moNruba	/mo.ŋo.ru.baʔ/

N.B.: It is not only the epenthetic vowel which can be affected by vowel harmony as can be seen from the examples of /pataj/ and /gamit/. (See 7. Vowel harmony.)

**6.2 The /ko/ prefix**

When the /ko/ prefix meets an initial consonant (except a glottal) in the following verb root, there is no change to the root. However, when the initial root consonant is /ʔ/ changes are triggered as shown in the following table.

**Table 7. The /ko/ prefix**

Prefix		Initial root phoneme		Final form	Changes in prefix and verb root
/ko/	+	any consonant except glottal	→	/ko/	No change
/ko/	+	/ʔo/	→	/ko.o/	The initial glottal of verb root is lost. The /o/ in the prefix and the /o/ in the verb root are both shorter than normal.
/ko/	+	/ʔa/	→	/ka.a/	The initial glottal of the verb root is lost. The /o/ in the prefix becomes /a/ because of the operation of vowel harmony (See 7. Vowel Harmony). Both the prefix vowel and the initial vowel in the root are shorter than normal.
/ko/	+	/ʔi/	→	/ke.e/	The initial glottal of the verb root is lost. The /o/ in the prefix becomes /e/. It seems that the front vowel in the verb root pulls the back vowel in the prefix forward. In addition the /i/ becomes more open. Both vowels are shorter than normal.
/ko/	+	/ʔu/	→	/ko.o/	The initial glottal of the verb root is lost. The /u/ in the verb root becomes /o/. In this case it seems that the verb root vowel assimilates to the prefix vowel. Both vowels are shorter than normal.

Examples of each type follow:

**Table 8. Formation of verbs with the /ko/ prefix**

Verb root	Meaning	Final form
/kitoʔ/	'can see'	/ko.ki.toʔ/
/ʔolos/	'can borrow'	/ko.o.los/
/ʔakan/	'can eat'	/ka.a.kan/
/ʔinum/	'can drink'	/ke.e.num/
/ʔuliʔ/	'can return'	/ko.o.liʔ/

The final form is basically phonemic data with the addition of syllable breaks. There are also two other prefixes, /o/ for the stative verb, and /noko/ (the past form of /ko/), which behave in the same way.

Some affixation in Tobilung involves prefixes and affixes. 'The place where something takes place' is formed by a prefix /po/ and a suffix /an/. The prefix behaves as the /ko/ prefix just discussed, whilst the /an/ suffix can trigger vowel harmony and neutralization which are discussed in the next section.

Finally there are many forms of the verb that combine affixation with reduplication such as:

/koririkot/ [kɔ̃.ri.ri.kɔ̃ʔ] 'has just come'  
 ko - ri - rikot  
 ko - REDUP - 'come'<sup>11</sup>

/mibooboros/ [mi.ʔo.ʔ.ʔo.rɔ̃s] 'talk to each other'  
 mi - boo - boros  
 mi - REDUP - 'talk'

/dudumagaŋ/ [du.du.ma.g-aŋ] 'seller'  
 du - du - ma - gaŋ<sup>12</sup>  
 REDUP - um - 'sell'

## 7. Vowel harmony

### 7.1 Vowel /o/ changes to /a/

Vowel harmony causes the 'neutral vowel' /o/ to change to the low vowel /a/ in

this language. (See 8. Neutralization for comments on the term 'neutral vowel'). The following examples show that when the /an/ suffix is added to the root verb, then preceding /o/ vowels are changed to /a/. (Other changes caused by the addition of the suffix are not discussed in this section.)

/kokot/ + /an/ → /ka.ka.tan/ 'to bite'  
 /ʔolos/ + /an/ → /ʔa.la.san/ 'to borrow'

This explains why the vowel sequence /oa/ does not occur, nor the sequence /oCa/, (where 'C' represents any consonant).

### 7.2 High vowels do not change to /a/

High vowels are not affected by vowel harmony, as can be seen from the following examples:

/pigis/ + /an/ → /pi.gi.san/ 'to cut'  
 /sunsub/ + /an/ → /sun.su.ban/ 'to chase'

### 7.3 High vowels block the spread of vowel harmony

High vowels also block the spread of vowel harmony. In the following examples, although there is an /o/ to the left of the /a/ vowel, the intervening high vowel prevents the spreading of the /a/ vowel from right to left.

/olin/ + /an/ → /ʔo.li.ŋan/ 'to forget'  
 /ʔowit/ + /an/ → /ʔo.wi.tan/ 'to carry'

### 7.4 /a/ vowels do not change to /o/ by a process of vowel harmony

It can be seen from the following examples with the suffix /on/ that the /o/ vowel cannot spread from right to left through vowel harmony. /a/ vowels do however change to /o/ by another mechanism. (See 8. Neutralization.)

/ʔakan/ + /on/ → /ʔa.ka.non/ 'to eat'  
 /sakaj/ + /on/ → /sa.ka.jon/ 'to go up'

### 7.5 The effect of morphophonemics on vowel harmony

In section 6.2 morphophonemic changes resulting from the addition of the /ko/ prefix were considered. Although with affixation the initial vowel of the root is shortened, it nevertheless triggers vowel harmony in the

<sup>11</sup> REDUP: Here means reduplication of the first root syllable. Often there is also lengthening of the vowel as in the second example.

<sup>12</sup> The root is 'dagang' and there is an infix 'um'. The reduplication then consists of the first letter of the root plus the 'u' from the infix.

prefix as can be seen from the following examples:

/ko/ + /ʔakan/ → /ka.a.kan/ 'to be able to eat'

/noko/ + /ʔakan/ → /na.ka.a.kan/ 'to have eaten'

/noko/ + /ʔanuʔ/ → /na.ka.a.nuʔ/ 'to have taken'

### 7.6 The effect of geminate vowel clusters on vowel harmony

Geminate vowel clusters in the root are not affected by vowel harmony as can be seen by the following example.

/woog/ + /an/ → /wo.o.'gan/ 'to wash'

However, when geminate vowel clusters are found across morpheme boundaries as a result of affixation, vowel harmony does operate:

/ko/ + /omot/ + /an/ → /ka.a.ma.tan/ 'harvest festival'

In an unpublished paper (1994) regarding vowel harmony and neutralization in Kimaragang and Murut, Kroeger says, 'It appears to be quite uncommon for rules of Vowel Harmony to exhibit Geminate Inalterability effects.' He further makes the point that 'this Geminate Inalterability effect holds only for "true geminates", i.e. morpheme-internal geminates. It does not hold true for clusters in which a morpheme boundary separates the two.'

## 8. Neutralization

### 8.1 The neutral vowel in Tobilung

The neutral vowel (or the one which seems to be phonologically unmarked) is /o/ in Tobilung, as also in Kimaragang. Kroeger (1994) adduces various strands of evidence for this, including the fact that 'non-high prefix vowels and the epenthetic vowel are /o/ unless subject to Vowel Harmony. A third piece of evidence is simply the fact that Vowel Harmony changes /o/ to /a/ in Dusun. (As seen in the previous section /a/ cannot become /o/ by this means. This could be taken as evidence that /a/ is in some sense "stronger" than /o/ in Dusun, while the reverse holds true in Murut. However, there is a danger of circularity in this line of reasoning.)'

For the purposes of this paper /o/ will be regarded as the neutral or unmarked vowel.

### 8.2 Where neutralization does and does not occur

Although /a/ vowels cannot change to /o/ through vowel harmony, a process which Kroeger (1993) has called 'neutralization' does in special circumstances have this effect. Neutralization occurs with verb roots which have penultimate vowel /a/ and a different final vowel. In this process, the penultimate and any preceding /a/ vowels become /o/. The examples below show that this is not a spreading phenomenon and therefore is not blocked by high intervening vowels. With high vowels it can be seen in the presence of any suffix, not just /on/:

/talib/ + /an/ → /to.li.'ban/ 'to pass'

/gamit/ + /on/ → /go.mi.'ton/ 'to catch'

With final vowel /o/ the neutralization of the preceding /a/ can be observed with the /on/ suffix. However, because vowel harmony takes place after neutralization, the effect of neutralization cannot be observed once the /an/ suffix is added. The following examples demonstrate this:

/ʔindakod/ + /on/ → /ʔin.do.ko.'don/ 'to sit down'

/ʔindakod/ + /an/ → /ʔin.da.ka.'dan/ 'to sit down'

The next examples show that neutralization does not occur when the second vowel is also /a/. Hypothetically, the vowel might be neutralized, but as with the example of final /o/, vowel harmony obliterates the effect:

/sakaj/ + /on/ → /sa.ka.'jon/ 'to go up'

/pataj/ + /on/ → /pa.ta.'jon/ 'to kill'

In summary, the examples demonstrate that where the second vowel is non-low, neutralization is observed in surface forms; where it is low, no neutralization is seen.

### 8.3 Neutralization and rule-ordering

To arrive at the correct form, it is necessary to apply the rule of neutralization first and then changes arising from vowel

harmony. The example demonstrates how, hypothetically, there is an intermediate stage where neutralization has been applied, but the form is incorrect:

/ʔindakod/ + /an/ → \*ʔindokodan/

The vowel harmony changes must be added before the correct form is realized:

/ʔindakod/ + /an/ → ʔin.da.ka.'dan/ 'to sit down'

If neutralization were applied after the vowel harmony changes had been made, then the result would be incorrect:

\*ʔindokadan/

## 9. Suprasegmentals

### 9.1 Stress

The following comments on stress placement must be regarded as provisional and are descriptive rather than explanatory.

Stress is not phonemic in Tobilung. It is realized primarily by a slight lengthening of the relevant syllable and secondarily a change in pitch and volume. Words have been examined in isolation and in various frames. Sentence stress tends to flatten the word stress.

#### 9.1.1 Bisyllabic Words

In CVVC words, where the same vowel (even a different phone) is repeated, the stress is invariably on the penultimate syllable. :

/deen/	[dɛ.ɛŋ]	'beetle leaf'
/puun/	[pu.ʊn]	'tree'
/biik/	[bi.ikʰ]	'young rat'

In CVVC words where the vowels are different most words have final stress.

/lios/	[li.'os]	'louse egg'
/luak/	[lu.'akʰ]	'back of knee'

In CVCCVC words, stress is generally equal on each of the syllables.

/tantob/	[tʰan.'tɔbʰ]	'fence'
/gontod/	[g-ɔn.'tɔdʰ]	'heel'

In CVCVC words, many words have final stress, but there are a significant

number with penultimate stress. There is no obvious phonological reason for this variation.

/sarup/	[sa'rupʰ]	'wind'
/tanaj/	[tʰa.'naj]	'termite'
/raduʔ/	[ra.'dʊʔ]	'plough'
/ʔopod/	[ʔɔ.'pɔdʰ]	'ten' <sup>13</sup>

but:

/tasuʔ/	[tʰa.suʔ]	'dog'
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#### 9.1.2 Words with more than two syllables

Three syllable words exhibit less variation. In many words the main stress is on the last syllable with secondary stress on the first syllable.

/tombolog/	[tɔm.bɔ'logʰ]	'bird'
/buluntuŋ/	[bu.luŋ.'tʊŋ]	'rainbow'
/tulunan/	[tu.lu.'nan]	'pillow'
/ʔoligkan/	[ʔɔ.ligʰ.'kʌŋ]	'interesting'

Words with additional syllables also usually have primary stress on the final syllable. but secondary stress may be on the first or second syllable.

/monodulaʔ/	[mɔ.ŋ-ɔ.du.'laʔ]	'to stick out the tongue'
/sosodopon/	[sɔ.,sɔ.dɔ.'pɔn]	'afternoon'
/bambajaan/	[bʌm.ba.ja.'ŋ-an]	'butterfly'

### 9.2 Intensification

Length, pitch and loudness together are quite often used to intensify meaning. The second example in each pair shows intensification in meaning: Note that the position of stress in the word may be affected by the intensification.

/ʔoodiʔ/	[ʔɔ.ɔ.'dɪʔ]	'over there'
/ʔooodiʔ/	[ʔɔ.ɔ.ɔ.'dɪʔ]	'far over there'
/ʔanaruʔ/	[ʔa.na.'ruʔ]	'long'
/ʔanaaarʊʔ/	[ʔa.'na.a.a.ruʔ]	'extremely long'
/lalaŋkasaj/	[la.laŋ-'ka.'saj]	'be quick'
/lalaaŋkasaj/	[la.laŋ-'ka.a.saj]	'hurry up!'

<sup>13</sup> However when counting, the emphasis is often on the penultimate syllable, especially if it is the final item of a series.

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