

# Brao Ombaa Writing System

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## 1. Introduction

The writing system presented in this paper was developed for the Brao speech variety spoken in the province of Ratanakiri in northeastern Cambodia. Members of this speech group usually refer to themselves as Brao, but in order to distinguish themselves from the other Brao groups, they also call themselves Brao-Ombaa. The river Ombaa is a tributary to the Sesan river. There are five different dialects of Brao in Cambodia, the Brao-Tanaap (or lowland Brao) and the Brao-Krung are situated South of the Sesan river, the Brao-Lun, are situated on the banks of major rivers, and the Brao-Kavet and the Brao-Ombaa lived in the past North along tributaries of the Sesan river, but the Brao-Ombaa have settled since the late 60s along the Sesan river, on both side. Today they live mostly in villages of Taveng district in Ratanakiri. And in some villages in Voeng Sai district, just down river from Taveng district. “The generic form Brao thus designates several very closely related speech varieties“ (Keller, 1999). The Brao language varieties, have been classified part of the Mon-Khmer language family, specifically of the Western Bahnaric sub-group by Thomas and Headley (1970, p. 399).

## 2. History of the writing system development

The writing system developed for the Brao Ombaa is based on the phonological analysis of Brao-Krung (Keller, 1999) the orthography developed for Brao-Krung by Chuck and Sally Keller, and the Brao dialectal survey (Keller et al., 2008). A trial orthography was developed in 2000, and used in the literacy classes since January 2002. In late 2002, the government set up an orthography committee with representatives from the Ministry of Education Youth and Sports (MoEYS) under the then Secretary of State H.E. Im Sothy, the Royal Academy of Cambodia, as well as ICC staff and community members. In March 2003, the revised orthography was approved by all parties and publicly promulgated in an official ceremony in August 2003. Since then a few adjustments according to input from representatives of the MoEYS have been made and approved.

### 3. The Brao Ombaa Consonants

Brao Ombaa has 25 consonantal phonemes as shown in the table below.

	Labial		Dental-Alveolar		Palatal		Velar		Glottal	
<b>Stops: voiceless unaspirated</b>	p	ប្រ, ព	t	ត, ទ	c	ច, ជ	k	ក, គ	ʔ	អ, អី
<b>Stops: voiceless aspirated</b>	p <sup>h</sup>	ផ, ភ	t <sup>h</sup>	ថ, ធ			k <sup>h</sup>	ខ, យ		
<b>Stops: voiced</b>	b	ប, ប៊	d	ដ, ឌ	ʃ	ស, ល	g	ក្រ, គ		
<b>Stops: glottalised</b>	ʔb	ផ, ផ៊	ʔd	ថ, ធ	ʔʃ	អ្ស, អ៊្ស				
<b>Fricatives</b>					ç	ស, ស៊			h	ហ, ហ៊
<b>Nasals</b>	m	ម, ម៊	n	ណ, ន	ɲ	ញ, ញ	ŋ	ង, ង		
<b>Liquids</b>			l r	ឡ, ល រ, រ						
<b>Approximants</b>	w	វ, វ៊			j	យ, យ				

Table 1

The alphabetical khmer-based letter symbolising each phoneme is shown with its corresponding IPA symbol. When writing Brao-Ombaa, we have observed the Khmer orthography rule having two series of consonants for each phoneme, since the series of the main consonant is essential to how the vowel is read.

Out of twenty five consonants shown in table one, only fourteen can be found in word final position. These are show in the Table below:

Final Consonants:

	Labial		Dental-Alveolar		Palatal		Velar		Glottal	
<b>Stops</b>	p	ប	t	ត	c	ច	k	ក	ʔ	គ*
<b>Nasals</b>	m	ម	n	ន	ɲ	ញ	ŋ	ង		
<b>Continuant</b>			l r	ល រ					h	៖
<b>Approximants</b>	w	វ			j	យ				

Table 2

\* After a short vowel, the final glottal stop is not marked if the vowel symbol represents both the vowel and the final glottal stop.<sup>1</sup>

Example with a long vowel: mother ‘mεε?’ មែត

Example with a short vowel: mother (old) ‘me?’ មី

The khmer symbol for a final ‘h’ is treated (by khmer convention) as a vowel and not a consonant. (See Table 4)

#### 4. The Brao Ombaa vowels

Brao Ombaa has 19 vowel phonemes, eight short, eight long and three diphthongs, as shown in the table below. The Brao vowels, following the Khmer writing convention have a specific set place within a syllable as can be seen in tables 2 and 3.

	Front				Central				Back			
	Short		Long		Short		Long		Short		Long	
High - Plain	i	<b>គិ</b>	ii	គី	i	<b>គី</b>	ii	គី	u	<b>តុ</b>	uu	តូ
- Diphthong			ie	គឿ			ie	គឿ			ue	តួ
Mid	ε	<b>កិ</b>	εε	តៃ	ə	<b>កិ</b>	əə	កើ	o	<b>តុ</b>	oo	តូ
Low					a	កាត់	aa	កា	ɔ	កត់	ɔɔ	ក

Table 3

As seen in the table above when writing the vowels in Brao with the consonant “k“, for some vowel symbols, the sound will depend on which series of consonant it is associated with. (See the vowels in bold).

There are some more vowel symbols used in Brao as shown below, but they don't represent new phonemes compared to the ones above but rather combine a vowel and a consonant:

Phonemic	Vowel	Phonemic	Vowel	Phonemic	Vowel
<b>V + j</b>		<b>V + h</b>		<b>V + N</b>	
aj	តៃ	ah	កះ	am	កាំ
ij	គី	ɔh, uəh	គោះ, គោះ	aŋ	កាំង*
				ɔm	កំ គំ
				om, um	កុំ គុំ

Table 4

\* Here the vowel sound is influenced by the consonant coming directly after.

1 Compare the two short vowels “ i “ and “ a “ in table 3

## 5. Brao Ombaa phonological word and phrases

The phonological word in Brao Ombaa can be monosyllabic or sesquisyllabic. The main syllable being strongly stressed. There are a few plurisyllabic words, but all are loan words, mainly from Lao or Khmer.

### 5.1 The Main Syllable

The structure of the main syllable is C<sub>i</sub> (L) V (A) (C<sub>f</sub>)

C<sub>i</sub> = can be any of the 25 consonants shown in table 1 if it is a CVC sequence.  
If it is a CCV or CCVC sequence C<sub>i</sub> can be any of the following  
11 consonants: / p t c k ʔ b d ʃ g ʔb ʔj ʃ /

L = /l r/

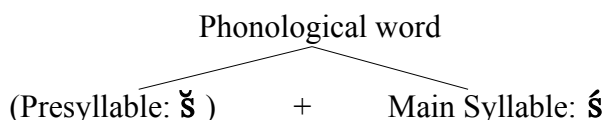
V = can be any vowel or diphthong represented in table 3 or 4.

A = /j w/

C<sub>f</sub> = /p t c k ʔ m n ɲ ŋ l r h w j / as shown in table 2

### 5.2 Sesquisyllabic words

Sesquisyllabic words are a syllable and a half; the strongly stressed main syllable is preceded by a weakly stressed presyllable as shown below (Keller, 1999):



There are two main types of presyllables : C $\check{v}$  or C $\check{v}$ C. The presyllable is always initiated by a consonant (C) followed by an extra short vowel (  $\check{v}$  ). Whatever the type of presyllable, the vowel is always an extra short neutral vowel, its sound depending on the phonological environment / ə, ǎ or ǝ/.

In a C $\check{v}$  presyllable the onset consonant can be any of the following: /p t c k ʔ p<sup>h</sup> t<sup>h</sup> k<sup>h</sup> b d ʃ g ʔb ʔd ʃ h m n ɲ ŋ l r w j/<sup>2</sup>

Some examples:

pǎdiw	‘belly or stomach’
cǎnaa	‘food’
thǎləem	‘if only’
gǎlɔh	‘door way’
mǎmaan	‘to speak’

In a C $\check{v}$ C presyllable, the onset consonant can be any of the following 17: / p t c k ʔ p<sup>h</sup> t<sup>h</sup> k<sup>h</sup> b d ʃ g s h m ɲ ŋ l r w / , while the final consonant is usually a liquids or nasals: / k m n ɲ r / .<sup>3</sup>

Some examples:

hǎmbaan	‘a traditional scarf’
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<sup>2</sup> It is to be noted that the aspirated stops are rare in presyllables, and probably all come from loan words.

<sup>3</sup> /k/ in this position is very rare and only found in animal names. It could probably be analysed as a compound of two words CVC CVC, which now has been merged into one: C $\check{v}$ C-CVC or that they are loan words.

pǎnduuŋ	‘to scare somebody’
kǎŋkεεw	‘a bottle’
bǎrmaanŋ	‘a word, a language’
ʔǎmbuʔ	‘a location’

In CǎC presyllables starting with a glottal stop as in the last example above, there is a tendency by some speakers to reduce the presyllable to a syllabic nasal.

ʔǎN	→	ʔN̩
ʔǎmbuʔ		ʔm̩buʔ

In CǎC presyllables if the final consonant is / r /, a few speakers follow the Khmer phonology as shown below:

Cǎr	→	Crǎ
bǎrmaanŋ		brǎmaanŋ

### 5.3 Phonological phrases

In Brao Omba, as in most Brao dialects, there is a tendency to a right merge resulting in grammaticalization (Keller, Jordi, Gregerson, 2009). In Brao Ombaa this is very common in the verbal phrase, resulting sometimes in a main syllable being preceded with two pre-posed syllables as shown in the chart below:

Pronoun	Tense	Verb Root	
haj	(ma)	pǎnduuŋ	you(2 <sup>nd</sup> -sg) (Fut) scare somebody
	hǎ - (m) -	pǎnduuŋ	you (will) scare

This process results in the following types:

Cǎ(C) + Cǎ(C) + Main Syllable

The first of these pre-posed syllables can either be Cǎ or CǎC. They are always initiated by a consonant (C) which can be any of the following: /ʔ b h m ŋ l w/ and is followed by an extra short vowel

( ǎ ) / ǎ /. If that pre-posed syllable is CǎC, then the final consonant in a CǎC will be /N/ (except / ŋ /)

Some examples:

Cǎ	mǎkǎcεεt	‘they kill’
	ʔǎpǎgǎj	‘I dream’

CǎC	ŋǎmpǎnduuŋ	‘we will scare’
	hǎncǎndraa	‘you will talk (somebody) into’

ʔǎŋəʔut ‘I will wipe’  
 lǎŋkǎloow ‘he will call’

#### 5.4 Plurisyllabic words

Plurisyllabic words differentiate themselves from the sesquisyllabic words in the fact that the stress is always and only on the last syllable, and there are other vowels than / ə / in the first and/or second syllable. The plurisyllabic words are either disyllabic or trisyllabic. There are two types of syllables found in the examples below: CV and CVC, but depending on the loan word, it might be possible to find other types of syllables.

Some examples:

Disyllabic words:

CV CV	saalaa	‘school’
	kap <sup>h</sup> εε	‘coffee’
CVC CVC	namtaan	‘sugar’

Trisyllabic words:

CV CV CVC	tuurootuəh	‘television’
	paasaason	‘population’
CVC CV CVC	sokkhǎphaap	‘health’

As stated above those are usually loan words, but it is to be noted that some borrowed words have been adjusted to the sesquisyllabic form.

Some examples:

tǎhaan	‘soldier’
hǎniən	‘lesson’

## 6. Spelling

In developing this writing system, the following principles have guided decisions:

1. The orthography should be as phonemic as possible and easy to teach.
2. The transition between the national language and Brao Ombaa should be as simple as possible.
3. Acceptability to the community.
4. Acceptability to the government.

### Brao phonological word

#### a. Words with one syllable

There are four types of monosyllabic words in Brao Ombaa

- CV            mεε (មែម) ‘they’, laa (ឡា) ‘request’, ʔbɔɔ (ប) ‘bamboo’

- CVC            mεεʔ (មែមត) ‘mother’, maanj (ម៉ាង) ‘to speak’, par (ប៉ារ) ‘to fly’

- CCV        krɛɛ (ក្រែ) ‘sky’, klɨ (ក្លី) ‘tiger’, trɔɔ (ត្រ) ‘right’
- CCVC      truun (ត្រួង) ‘road’, blɔɔk (ប្លក) ‘tusk’, gliim (ក្លឹម) ‘cold’

As can be noted above the letter representing / r l / in the L sequence of a CC is different from the one shown in table 1. In such a position the Brao alphabet uses a foot<sup>4</sup> representation of the consonant, / r / being represented as ( ្រ- ), and / l / represented as ( ្ល- ). No other consonant can occur in that second consonant position.

In general the initial consonant is central and vowels as well as cluster-forming consonants are arrayed around that central position.

The vowel signs can occur as above, below, preceding and following a consonant. It can also have one part preceding while the other above or following. (See table 3)

### b.        Sesquisyllabic Words

There are two types of presyllables: C<sup>̣</sup>v and C<sup>̣</sup>vC. In Brao Ombaa the extra short vowel is not written, but inherent in the initial consonant.

- C<sup>̣</sup>v        + CV    hǎlaa (ហឡា) ‘leaf’,
- + CVC   pǎdɛh (ពឌី) ‘earth’,
- + CCV   pǎgraa (ព្រឌី) ‘help somebody in need’,
- + CCVC kǎkraŋ (ក្រកាំង) ‘respect a taboo’

- C<sup>̣</sup>vC        If the second consonant is / k n ŋ /:
- + CV    tǎkkɛɛ (តក់តៃ) ‘gecko’,
- + CVC   pǎŋhiəŋ (ពងហៀន) ‘teach’, təŋbaar (តងបារ) ‘middle or half’
- + CCV   cǎndraa (ចន់ជ្រា) ‘talk somebody into’
- + CCVC cǎndriəŋ (ចន់ជ្រៀង) ‘song’,

If the final consonant of the presyllable is / m /, then the following superscript symbol / ° / is used to represent it as shown below and in table 4:

- + CV    kǎmbuu (កំបូ) ‘pigeon’
- + CVC   hǎmbaan (ហាំបាន) ‘scarf’
- + CCV   ʔǎmbraa (អាំប្រា) ‘3<sup>rd</sup> dual’
- + CCVC hǎmbruʔ (ហាំប្រឹ) ‘at that moment’

4 Khmer writing conventions employ a partially or completely subscript (called ‘foot’) positioning of the second member of, for example, consonant clusters like pr, kl, etc.

If the second consonant is / r /, the foot of the consonant is used and this occurs only with two types of main syllables:

- + CV     dǎrmaa (ជ្រម៉ា) ‘ennemi’, ,
- + CVC    cǎrlaat (ច្រឡាត) ‘piece of meat’
- CCV or CCVC are not possible

**c. Phonological phrases**

In phonological phrases, one presyllable is added to a sesquisyllabic word. In this case the first presyllable follows the same writing rules as a presyllable in the section above, except the presyllable CǎR or CǎK doesn't occur in that position.

- |     |                       |   |
|-----|-----------------------|---|
| Cǎ  | + Cǎ + Main Syllable  | hǎkǎloow (ហកឡូវ) ‘you call’,              |
|     | + CǎC + Main Syllable | វ៉័ច័ញ័hi័ញ (អចង់ហៀង) ‘I listen’          |
| CǎC | + Cǎ + Main Syllable  | hǎŋkǎloow (ហង់កឡូវ) ‘you will call’,      |
|     | + CǎC + Main Syllable | វ៉័ញ័ច័ញ័hi័ញ (អង់ចង់ហៀង) ‘I will listen’ |

**d. Plurisyllabic words**

Plurisyllabic loan words follow the same main spelling convention, but each syllable may have a written vowel.

Disyllabic words:

- |         |                            |          |
|---------|----------------------------|----------|
| CV CV   | saalaa (សាលា)              | ‘school’ |
|         | kap <sup>h</sup> εε (កាតៃ) | ‘coffee’ |
| CVC CVC | namtaan (ណាំតាន)           | ‘sugar’  |

Trisyllabic words:

- |            |                       |              |
|------------|-----------------------|--------------|
| CV CV CVC  | tuurootuəh (ទូរូទៅ)   | ‘television’ |
| CV CV CVC  | paasaason (ប៉ាសាសុន)  | ‘population’ |
| CVC CV CVC | sokkhǎphaap (សុកខជាប) | ‘health’     |

Other conventions:

1. Brao uses a secondary foot for building the consonant phoneme ‘ ʔj ’ which Khmer doesn't have. This phoneme is mostly used in expressive adverbs, and as such is very rare and occurs mostly as a CǎR-CVC sequence. (For the normal use of a foot see 6.a)

- |          |                    |                 |                       |
|----------|--------------------|-----------------|-----------------------|
| Example: | វ៉័រវ៉័jiip        | (វ្រឡីប)        | ‘very black’          |
|          | វ៉័រវ៉័juəŋ វ៉័jut | (វ្រឡួង វ្រឡុត) | ‘totally ripe (rice)’ |
|          | វ៉័រវ៉័jiin        | (វ្រឡីង)        | ‘very many’           |



2. The “bantoc“ sign is used to shorten a vowel and is written as a superscript above the immediately following consonant, for example Vk is written as ‘ ក់ ’, that is, -k with a superscript; it can be used only for the vowel sound / aa / and / ɔɔ /.

Examples:	par	( ប៉ាវ់ )	‘fly’
	kat	( កាត់ )	‘cut’
	lɔŋ	( ឡូង់ )	‘older (child)’
	cɔŋ	( ចង់ )	‘eat (rice)’

3. As shown in table 4, some VC sequence are written only with a vowel:

1. V + j: The short vowel / a / followed by the consonant / j / is represented by a vowel with a superscript: ( ៉- )

Examples:

taj	( ៉ត )	‘to see’
?əraj	( អ៉រ៉ៃ )	‘pestle’

The short vowel / ɛ / followed by the consonant / j / is represented by a vowel with a superscript: ( ើ- )

Examples:

kɛj	( ើក )	‘laying down’
pəkɛj	( ពើក )	‘to dream’

2. V + h: The consonant / h / in a final position is represented as part of a vowel symbol in khmer.

a + h is written with an inherent (no mark) vowel + h mark.

yah	( យ៉ាះ )	‘although’
trah	( ត្រ៉ាះ )	‘clear sky’

uə + h is written with a bipartite vowel + h mark

ruəh	( រេរ៉ាះ )	‘elephant’
muəh	( មេរ៉ាះ )	‘moskito’
bəh	( បេរ៉ាះ )	‘salt’
?əh	( អេរ៉ាះ )	‘younger brother or sister’

other vowels + h

maah	( ម៉ាះ )	‘good hunter (dog or cat)’
keh	( កើះ )	‘needle’

3. V + m      The final consonant /m/ after a short vowel  
 written with a vowel + superscript nasal diacritic:  
 kam          (កាំ)          ‘to remember’  
 dum          (ដុំ)          ‘ripe’
- written with an inherent (no mark) vowel + superscript diacritic  
 nɔm          (នំ)          ‘cake’  
 həmbaan    (ហាំបាណ)    ‘scarf’
4. The “bantoc“, can not be used with the final consonant / ɲ /, after the vowel / aa / so there is a special convention for the sound / -aɲ /  
 Example:    maɲ          (មាំង)          ‘night’
5. The diacritic “plus“ symbol is used to lengthen the vowel in the following sequence: / ɔh /  
 Example:    rǎɔh         (រ៉េរ៉ាះ)         ‘to forge’
6. The diacritic “atachan“ is used on the first consonant to signal that the second consonant is read with an inherent vowel:  
 Examples:    kətɔɔ         (កិត)          ‘slave’  
                   həkɔɔ         (ហឹក)          ‘white (hair)’
7. In contrast to Khmer, there is a space between the words in Brao.

## 7. Spelling Inconsistencies

There are two main reasons for spelling inconsistencies encountered by people who have learned how to read and write Brao. The most common one comes from the discrepancies in pronouncing loan words, and the other might come from dialectal differences.

### a. Loan words

Loan words, being often plurisyllabic don't fit in the traditional Brao phonological word, and khmer having more vowel sounds than Brao leads people to pronounce them in different ways. For example the sound / e / can become either / i / or / ɛ /,

Example:    leek ‘number’                  lɛɛk ( លើក ) or liik ( លឹក )

Here are commonly used changes:

Khmer vowel		Brao vowel
/e/ /ee/	becomes	/ɛ/ /ɛɛ/
/aə/	becomes	/əə/
/aɛ/	becomes	/ɛɛ/
/ej/	becomes	/ii/

The other inconsistency comes from the tendency in Brao to merge right, with the first and

even the second syllables losing vowel length to the extent of becoming extra short neutral vowels seen in the presyllables.

Example: paasaason could be spelled as /pǎsǎson/

The spelling conventions for all loan words are usually decided by the Brao language committee and entered in the dictionary.

### b. Dialectal differences

The spelling of Brao words has been chosen by the language committee according to the most common Brao Ombaa variety, but as language standardization has not been a formal process so far, some some villages pronounce some words differently, and this may show in a person's spelling. This issue as more literature is produced, may need to be addressed more explicitly by the whole community.

Example: Brao Ombaa Brao Tabook  
 / bɪŋ / / baŋ / from

With some short vowels the sounds can be interpreted differently; this is less a dialectal difference than a personal perception of what a person thinks he hears.

This occurs most commonly with the following short vowels :

/ ε /	~	/ a /	/ mǎɾɛc /	~	/ mǎɾac /	pepper
			/ bɾɛc /	~	/ brac /	chili pepper
			/ tɛc /	~	/ tac /	sell

/ ə /	~	/ o /	~	/ ɔ /	/ mət /	~	/ mot /	~	/ mət /	only
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