

Brao-Krung phonology

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1. Introduction

This study is based on the Brao speech variety known as Krung spoken in the province of Ratanakiri in northeastern Cambodia. Members of this speech group sometimes refer to themselves as Krung-Brao or Brao-Krung. Three prominent varieties of Brao within Cambodia are Krung itself, Kavet (sometimes written Kravet), and a type often simply called Brao, which is spoken in most villages of Taveng District in Ratanakiri. The generic form Brao thus designates several very closely related speech varieties.¹

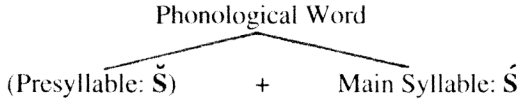
Classified by Thomas and Headley (1970:399) as a member of the Western Bahnaric group of Mon-Khmer, Brao was first documented under the ethnonym Kha Palau by Phraya Prachakij, a Thai administrator-scholar, during his travels to southern Laos and northeastern Cambodia between 1891 and 1893 (Phraya, 1919; 1995). Further identified with the Brao are the Lave, who live to the south and east of the Se Kong river where Attopeu Province in Southern Laos shares a border with Cambodia (Lebar, Hickey, and Musgrave, 1964; Matras and Ferlus, 1971). Again, more than one hundred years ago Phraya (1995:56) had located the Kha Rawe (i.e. Lave) in precisely the same locale as noted by modern researchers.

Krung, the dialect described here, is spoken in the region north, west and south of Ban Lung, the administrative and commercial center of Ratanakiri. Kavet speakers are found (see map in the Appendix) northwest of Ban Lung in Voeng Sai District of Ratanakiri and also in the northern part of Stung Treng Province which lies to the west of Ratanakiri. Both of these provinces border Laos on the north. The Brao of Taveng District have villages located along the Se San River which lies upstream and to the east of Voeng Sai District. Krung, Kavet and Brao of Taveng are mutually intelligible dialects.

¹Earlier study of the language with Krung speakers living elsewhere has been followed by two years residence in the Krung speaking area of Ratanakiri Province. Special thanks for suggestions through the paper to David Thomas and Kenneth Gregerson.

2. Words and syllables

The phonological word in Krung exhibits the familiar Mon-Khmer sesquisyllabic (Matisoff, 1989) structure, in which a strongly stressed Main Syllable (\acute{S}) is optionally preceded by a weakly stressed Presyllable (s^{++}), that is:



2.1 Presyllables

Constructionally, the presyllable in Krung may be represented as:

C \check{V} (N/R)-

That is, the presyllable is always initiated by a consonant onset (C), including glottal stop [ʔ] and consonant clusters, followed by a short syllabic nucleus as rhyme, which can include V, VN, or syllabic reductions of V, VN or VR, as detailed below. The formula above generates the following types of Krung presyllables:

Open presyllables generally take the following form:

C \check{V} --> C \acute{S}

ʔənam	'gift'	ʔəɾɛk	'carry (things) suspended from both ends of a pole'
ʔənuʔ	'age'	bəɾəŋ	'cocoon'
kətaar	'board'	dənaŋ	'river'
gəməh	'length'	həraaw	'to howl, cry out'
ʔəniʔ	'sickness'	pədəh	'ground, land'
pəʔiŋ	'to cause to stop'	təhiʔ	'bad, evil'
təkiəŋ	'lamp'	wəwak	'to exchange'

A consonant onset /ç/ becomes syllabic [ç̥] except when followed by another identical consonant /ç/ which is the initial of the main syllable, e.g. *ççər* [ç̥ç̥ər] 'to tremble', *ççəj* [ç̥ç̥əj] in *bak ççəj çj̄ir* 'to wear a long necklace', *ççj̄ir* [ç̥ç̥j̄ir] '(chicken) to scratch the ground':

C \check{V} --> Ç

çʔbiəŋ	'food stuffs'
çʔbuŋ	'to be frayed'
çʔdah	'to pull with a jerk'
çʔdoo in <i>ruəç çʔdoo</i>	'big tuskless elephant'
çj̄əəŋ	'very thin (said of a person)'
çʔuəj	'small type of mushroom'

ɕbah	'to be tired out'
ɕdaa tŋgaan-ɕrɔŋ	'to wash dishes'
ɕgaaw	'to know by acquaintance'
ɕgɨr	'drum'
ɕjɨr in <i>bak ɕɕɔɔj ɕjɨr</i>	'to wear a long necklace'
ɕkuup	'to turn (bowl shaped object) upside down'
ɕlaa	'leaf'
ɕlɛɛw	'to drift'
ɕlik	'thousand'
ɕmoop	'dusty faced'
ɕmii dii	'to be equal to'
ɕŋɔɔj in <i>kuu ɕŋɔɔj</i>	'to be angry (said of a small person)'
ɕŋɔŋ	'long reed straw (for drinking from beer jar)'
ɕniw	'leftover things'
ɕnii	'thing'
ɕjii	'a type of fruit'
ɕpaak	'uninhabited beehive'
ɕpaan in <i>nih taa ɕpaan</i>	'not yet finished'
ɕpɛɛk	'leather'
ɕpiŋ	'coil spring'
ɕpɔəm	'to lack night vision'
ɕpiŋ in <i>?ja? ɕpiŋ</i>	'to be proportionate in size'
ɕtɔr	'sound of walking on a wooden floor'
ɕtuk	'lake'
ɕtiŋ in <i>brii ?ja? ɕtiŋ</i>	'dense (of forest)'
ɕwiɛŋ ?bɔɔ	'bamboo shavings'
ɕwiiw raaj	'to turn ones head and look'
ɕrɔɔŋ in <i>muh mat ɕrɔɔŋ</i>	'a certain facial type'

Nasally closed presyllables (N) with laryngeal and glottal onsets (H, ?) reduce to syllabic nasal syllables, while nasal final presyllables with all other consonant onsets vary between a syllabic nasal and a fuller short shwa-like vowel plus nasal coda, thus:

HVN --> HN̩ = N̩N̩ (i.e., voiceless nasal + syllabic voiced nasal)

hmbaan	'cloth'
hmbɔɔk	'skin'
hmpɛt	'tongue'
hmpuət	'to sell'
hndɔəm	'new'
hŋkɔŋ	'type of ant (red, medium-sized)'
hŋkip	'sleep while sitting'
hnnaɔj dii	'as for'
hnnuuh in <i>ɕlaa hnnuuh</i>	'fallen leaves'
hntaak toon	'peanut'
hɕɔt	'to dry by dripping through strainer'

ʔVN --> ʔN

ʔmbraa	'two people (used for 3rd person reference)'
ʔmbiʔ	'late afternoon'
ʔmpæək	'to herd'
ʔmpiep	'example'
ʔŋʔaaŋ	'infant'
ʔnduu	'shortly ago'
ʔntɔɔr	'(a) top (for spinning)'
ʔntun	'afterwards'
ʔntɔək	'turtle'
ʔŋɕaʔ	'to regret'
ʔŋɕaaj	'fishing pole and line'
ʔŋciicliic	'(waves) to break'
ʔŋjəw in <i>dok</i> ʔŋjəw	'to walk about for pleasure'

CVN --> CN /CɔN

cnduu [çŋduu]/[cənduu]	'mountain'
cŋhiɛŋ [çŋhiɛŋ]/[cəŋhiɛŋ]	'to listen'
kmbiək [kŋbiək]/[kəmbiək]	'to carry on hip'
knʔduul [kŋʔduul]/[kənʔduul]	'stupid'
pŋgap [pŋgap]/[pəŋgap]	'to order, to command'
pŋhiɛn [pŋhiɛn]/[pəŋhiɛn]	'to teach'
pntroŋ [pŋtroŋ]/[pəntroŋ]	'to straighten'
rŋɕaal [rŋɕaal]/[rəŋɕaal]	'rice storage basket'

Presyllables with an R coda all reduce to the syllabic [r], that is:

CVR --> CR

ʔrjaac	'to look alike'	ʔrjaaw	'to run'
ʔrjuʔ	'to be bent over'	ʔrliɛt	'castrated animal'
brbəw	'pumpkin'	crhəəw	'young unmarried man'
çrlaap	'wing'	çrŋuuk	'to snore'
drnɔk	'journey'	gŋjəɔŋ	'shelf'
hrɕij maam	'blacksmith'	hrjɔɔl	'echo'
hrmæɛt	'yellow'	krliɓ	'lid'
krpɕi	'water buffalo'	ʔrlɛʔʔrluɔʔ	'carelessly'
prɔɔn	'to hurry (intrans.)'	prdiiw	'to compare'
prʔdok	'inheritance'	prdiŋ	'width'
prkæək	'to object'	prlaap	'to destroy'
prnɛɛŋ	'(animals) to fight (using their horns)'	prjuuʔ puer	'food (cooked)'
prŋak	'to try hard'	trnəəw	'to answer'
trɕaak	'to tear (trans.)'	trtuuq tuuɕ	'brain'

In terms of Thomas' 1992 sesquisyllabic structure typology, Krung appears, despite the phonetic predictability of some transitions, as noted above, fundamentally to constitute a type (ii) language, maintaining as it does contrast between vocalic

presyllables (Cə-L) in sesquisyllabic words vs. consonant clusters with liquids (CL) in monosyllabic forms, as shown below (see further 2.2.2):

Sesquisyllables		Monosyllables	
bəluu	'to play'	bluu	'thigh'
gəliim	'very black'	gliim	'to be cold'
kəlam	'dark'	klam	'to sink, hundred'
kəlaŋ	'large recipient to measure unhusked rice'	klaŋ	'spirit power'
kələŋ	'type of small bird'	kləŋ	'deep pool in river'
pələəp	'to flood'	plah	'to break'

In some cases these contrastive presyllable vs. initial cluster sets are lexically or grammatically motivated, e.g.:

kələɔ	'male'	klɔɔ	'husband'
kəliih	'to drop'	kliih	'to fall'
gələh	'window opening'	gləh	'doorway'

Though not as common as C+L contrasts, forms like the following with C+R also distinguish presyllables from clusters, e.g.:

çraaw [çraaw]	'the popping sound of fast burning forest'	çraaw [çraaw]	'crossbow'
çruk [çruk] in <i>trjaaw çruk hi? brii</i>	'of running swiftly into the woods'	çruk [çruk]	'village')

It is probably worth noting that this limited set results from contrasts created with oppositions involving adverb-like ideophones (in the sesquisyllabic column).

2.2 Main syllables

2.2.1 Syllable patterns

Main syllables in sesquisyllabic words as well as monosyllabic forms in general take the following shape or some subset thereof:

$$C(L/N)V(C)$$

Consonants (C) of an unrestricted set (see Figure 1) occur in the onset of the Main Syllable and a restricted list of C co-occurs in clusters with an optional liquid or nasal (L/N), followed by a rhyme with a strongly stressed vocalic peak of syllabicity (V) and optionally closed by a restricted group (see Figure 2) of final consonants (C).²

²Word final consonant clusters occur rarely. Those that have been found have a glottal stop preceding or following another consonant and often involve ideophone forms:

/wʔ kraawʔ 'sound of chewing and crunching small bones', *krɔɔwʔ* 'sound of chewing and crunching large bones', *?daawʔ* 'again'

Main Syllables in Krung are thus of the following types:

- CV:** Initial consonants of Figure 1 co-occur in open syllables with long vocalics, i.e. long vowels or diphthongs (see Figure 3 Vowels): *laa* 'to request, which, who', *hɔɔ* third person singular pronoun, *tɔɔ* 'to extend', *tii* 'hand', *wii* 'a space of time, an amount of space', *piə* 'bait', *luə* 'a shovel', *dɔk riə* 'to move quickly (said of small thing)', *çiə* 'sloping low roof over doorway and porch', *ʔoo* 'small bowl for drinking & bathing'
- CVC:** Initial consonants co-occur in closed syllables with vocalics, i.e. short or long vowels or diphthongs, which are followed by a consonant from the set of syllable final consonants: *cəŋ* 'to eat rice', *çuuɰ* 'to pierce', *dɔk* 'to walk', *taj* 'to see', *duuk* 'boat', *miiɰ* 'planting field', *puəɰ tit* 'cooked sticky rice', *ruət* 'to buy', *çiij* 'to sit back in a relaxed manner', *wiəŋ* 'wall (of city, etc.), fence', *jiɰ* 'exceedingly, excessively'; *çuəj* 'to help', *ʔuɰ* 'fire', *wan khiaɰ* 'type of large earthenware jar with small mouth'
- CCV:** Initial consonant clusters (see 2.2.2 Consonant Clusters) co-occur in open syllables with long vocalics, i.e. long vowels or diphthongs: *krɛə* 'sky', *klɛi* 'tiger', *brii* 'forest', *druu* 'two-string violin', *çraa* 'thin (said of a person)', *klɔɔ* 'husband', *çi? ʔbriə* 'to have a stinging painful spot', *bruu* 'pheasant', *proo* 'very short rice plant sprout'
- CCVC:** Initial consonant clusters also co-occur in closed syllables with vocalics, i.e. short or long vowels or diphthongs which are followed by a consonant from the set of final consonants: *bluk* 'tusk', *çɰul* 'to butt', *brɔŋ* 'box trap with dropping door (for mice and rats)', *praj* 'to make (someone) do (something)', *kloom* 'to blow (with ones mouth)', *çruk* 'village', *brɔəj* 'immediately', *brəɰ* 'to sow', *çrook* 'to take shelter', *crual* 'chain, to have a convulsion', *drɔɔk wiəŋ* 'gate of fence or wall', *glɔŋ mat* 'blind', *griəç* 'to make very short stroke marks', *çraaw* 'medicine'

2.2.2 Consonant clusters

Consonant clusters consist of a stop or affricate followed by /l/ or /ɰ/. It is to be noted that /ʔbl/, /ʔɰd/, and /ʔɰj/ are by their patterning unit phonemes. The following clusters have been found initially in monosyllabic words:

/ʔbl/	<i>ʔbleəŋ</i> 'wall-eyed', <i>ʔbliəw</i> 'very smooth'
/bl/	<i>blah</i> 'between, a certain time', <i>quɰ blɔəŋ</i> 'fire', <i>blooc</i> 'freed, to escape, be past, be gone' <i>bluk</i> 'tusk'
/gl/	<i>gləɰ</i> 'doorway', <i>gliim</i> 'to be cool', <i>glaaw</i> 'to sharpen'
/kl/	<i>klɛi</i> 'tiger', <i>kloom</i> 'to blow', <i>klam</i> 'to sink, hundred', <i>klɔɔ</i> 'husband', <i>klɔk</i> 'to peck', <i>klɔəɰ</i> 'liver', <i>kloh</i> 'to crush with mortar and pestle'

/jʔl dɔəjʔ 'to fall having had ones feet slip out in front of one', *tɔəjʔ* in *çɛɛm çriɰ tɔəjʔ* 'birds to be perched at same height', *hrkɔəjʔ* 'to be spread out evenly', *çɰɰiijʔ* 'with chest thrust out (said of a small person)', *ɰɔɔ çuuɰʔ hɔɔ* 'his uncles'

/ŋʔ huəŋʔ 'a sound of flying up', *keəŋʔ* 'a sound of iron being struck'

- /pl/ *plah* 'break', *play piir* 'fruit & flowers', *plouc* 'to hop', *plon* 'to jump', *dik ploot* 'to jump up onto (porch, etc.), to come up into someone's house without being invited'
- /ʔbr/ *duuŋ ʔbrii* 'to be extremely frightened', *ʔbriiŋ* 'to be slightly illuminated', *ʔbrook* 'sound of object breaking from being bent', *tari ʔbruəŋ* 'to break loose simultaneously from something that binds', *ʔbroh* 'breaking through'
- /ʔʃr/ *ʃruu* 'completely ripe (all the fruit on a tree or plant)', *tih dəhuəw ʃruəŋ* 'extremely big'
- /br/ *brii* 'forest', *braaj* 'thread', *brəh* 'to sow', *braak* 'peacock/ peahen'
- /çr/ *çruk* 'village', *çruu puər* 'steam rice', *çrah* 'pond', *çriip rəqet* 'quiet (not speaking)', *çraa* 'to be thin (said of a person)', *çriiŋ* 'the sound of a sick person moaning', *çraaw* 'crossbow'
- /cr/ *cruut* 'to harvest', *cruh* 'to dive, jump', *crīiw* 'to predict, suppose', *criiŋ* 'to sing', *crəew* 'a woman's close woman friend'
- /dr/ *dreh* 'fast', *drəək wiəŋ* 'gate of fence or wall', *kuu droom* 'to stay and wait'
- /gr/ *grun gəw* 'fever & chills', *grəe* 'bed', *griɛç* 'to make short stroke marks'
- /kr/ *kra?* 'old', *krəe* 'sky', *kraan hnaam* 'household', *krik* 'breast bone', *kruək* 'immediately', *kriit* 'too heavy to lift', *krooj* 'barking deer'
- /ʃr/ *ʃruuŋ* 'high', *ʃraŋ* 'post, piling', *ʃru?* 'deep', *ʃrɛt ʃriw* 'to drink leftover beer on the morrow', *ʃriiŋ* 'to be refracted into rainbow colors', *ʔuŋ-ʃriɛw çŋ?əwŋ* 'flame reaches the rice steaming basket'
- /pr/ *prīit* 'banana', *praat* 'morning', *pral haral* 'to be well (from illness/injury)', *prəeŋ* 'to look after (children)', *niic pruuŋ* '(many insects) to leave (from hole)'
- /tr/ *trīi* 'fish', *trəəm* 'hole', *traaj* 'to prune (a vine)', *trac* 'rear', *trəw* 'true, correct', *trəe* 'floor surface of split bamboo', *trəw* 'six', *truuŋ* 'path, road', *trii* 'wife', *trut* 'to push'

3. Consonants

Krung has twenty-nine consonantal phonemes as charted in Figure 1.

	Labial	Dental-Alveolar	Palatal	Velar	Glottal
Voiceless unaspirated obstruents	p	t	c	k	ʔ
Voiceless aspirated obstruents	ph	th	ç	kh	h
Voiced obstruents	b	d	j	g	
Glottalized obstruents	ʔb	ʔd	ʔj	ʔg	
Plain nasals	m	n	ɲ	ŋ	
Preaspirated nasals	hm	hn		hŋ	
Trill		r			
Approximants	w	l	j		

Figure 1. Krung initial consonants

Fifteen of the consonants in Figure 1 also occur in word final position. These are shown in Figure 2.

	Labial	Dental-Alveolar	Palatal	Velar	Glottal
Stops	p	t	c	k	ʔ
Nasals	m	n	ɲ	ŋ	
Continuants			ç		h
Approximants	w	l/r	j		

Figure 2. Krung final consonants

3.1 Description of consonants

- /p/ Voiceless unaspirated bilabial stop, with no audible release in syllable final position: *pɔər* ‘cooked rice’, *hap* ‘receive’, *pɛɛŋ* ‘to gore’, *plaj* ‘fruit’, *puuŋ çur* ‘pig fat’
- /t/ Voiceless unaspirated dental stop, with no audible release in syllable final position: *təŋaa* ‘to ask’, *tit* ‘to stick’ (to something), *git* ‘from’, *pətuer* ‘star’, *kɛɛt* ‘to die’; it has an alveolar point of articulation in the cluster /tr/: *trii* ‘fish’
- /c/ Voiceless unaspirated palatal affricate/stop; syllable initial, it is an affricate; in syllable final position, it is a stop with no audible release: *caa* ‘to eat (food other than rice)’, *cɛh* ‘unhusked rice’, *ci? trac tii* ‘to come back’, *phaac* ‘sand’, *juuc* ‘wrong’, *cəw* ‘grandchild’, *cɛɛm kur* ‘dove’
- /k/ Voiceless unaspirated velar stop, with no audible release in syllable final position: *kəət* ‘to be born, to happen’; *dək* ‘walk’, *daak* ‘water’, *kləəm* ‘liver’, *kra?* ‘old’, *kuən* ‘child’, *krɛɛ* ‘sky’, *kiit* ‘frog’
- /ʔ/ Voiceless unaspirated glottal stop having no audible release in syllable final position: *ʔam* ‘to give’, *ʔuu?* ‘older brother’, *ja?* ‘grandparent’, *rɛ?* ‘to go’
- /ph/ Voiceless aspirated bilabial stop, occurring only syllable initial: *phɛɛ* ‘rice’ (husked, uncooked), *phaam* ‘blood’, *phəw* ‘soul’, *phuuŋ juu* ‘relatives’, *phɛ?* ‘full (no longer hungry)’
- /th/ Voiceless aspirated dental stop, occurring only syllable initial: *thun* ‘season’, *thaa* ‘eight’, *thəŋ* ‘strong’, *thoot* ‘fault, guilt’, *thəp* ‘to smell by sniffing (e.g. as a dog does)’
- /ç/ Voiceless aspirated obstruent, varying from fricative to affricate and from palatal to alveolo-palatal in syllable initial position; it is a lenis unaspirated palatal fricative in syllable final position: *çəŋ* ‘five’; *çruk* ‘village’, *çuəj* ‘tail’, *ɲiiç* ‘to leave, to exit’, *ruç* ‘elephant’
- /kh/ Voiceless aspirated velar stop, occurring only syllable initial: *khin* ‘dare’, *dii khəŋ* ‘because’, *khaj* ‘moon’, *khier* ‘to burn (intrans., i.e. food)’, *khoo* ‘pants, slacks’, *khuuc* ‘broken’
- /h/ Voiceless laryngeal fricative: *hap* to receive’, *hit* ‘tobacco’, *coh* ‘to burn (trans.)’, *cɛh bəh* ‘to salt’, *pədəh* ‘ground, soil’
- /b/ Voiced unaspirated bilabial stop, occurring only syllable initial: *but* heart (non-physical), *baar* ‘two’, *bənih* ‘human’, *bəbɛɛ* ‘goat’, *buər* ‘mouth’, *baak* ‘to put out food (for animals)’, *bat* ‘grass’, *bam* ‘to hold (something) in the open mouth’, *bəŋ* ‘to fall down’, *biŋ* ‘to be full (e.g. a container)’, *bəh* ‘unmarried young woman’, *buut* ‘maize’

- /d/ Voiced unaspirated dental stop, occurring only syllable initial: *dok* 'walk', *doɔç* 'pointed', *doq* 'hot', *pəɗaj* 'to show', *duər* 'type of flute'; it has an alveolar point of articulation in the cluster /dr/: *druo* 'two-stringed violin', *drək wiɛŋ* 'gate of fence or wall'
- /tʃ/ Voiced unaspirated palatal affricate, occurring only syllable initial: *ʃiŋ* 'foot', *ʃiŋ* 'to sew', *ʃuut* 'to wipe', *ʃəjəh* 'to wash', *ʃi?* 'sick', *ʃe?* 'what, which', *ʃraaw* 'medicine'
- /g/ Voiced unaspirated velar stop, occurring only syllable initial: *gəgiɛt* 'to itch', *gook* 'land', *grun* *gək* 'fever & chills', *çgaaw* 'know by acquaintance', *gliim* 'to be cool', *gaar* 'to herd'
- /ʔb/ Voiced preglottalized bilabial stop, occurring only syllable initial: *tənbəəm* *ʔbək* 'bamboo tree', *ʔbəkən* 'place', *ʔbal* *ʃe?* 'how much, how many', *ʔbi?* 'to rain', *ʔbaaw* 'servant'
- /ʔd/ Voiced preglottalized alveolar stop, occurring only syllable initial: *ʔduər* 'before', *ʔdi?* 'some', *ʔdal* 'to punch', *ʔduuŋ* 'coconut tree', *ʔdaaw?* 'again'
- /tʃʔ/ Voiced preglottalized palatal stop: *ʔjaa* 'we' (exclusive), *ʔjiɛr* 'chicken', *ʔja?* 'good', *ʔjuuŋ* *ʔuŋ* 'smoke'
- /ŋʔ/ Voiced preglottalized velar stop, occurring only syllable initial: *ʔgaam* 'sweet', *ʔgaam -ʔgaam* *ʔguut -ʔguut* 'dessert'
- /m/ Voiced bilabial nasal: *maam* 'iron', *muəç* 'mosquito', *mo?* 'older sister', *muh* 'nose', *hnaam* 'house', *pəɛm* 'gizzard', *trəkəm* 'hole', *hndəəm* 'new', *rəɛm* 'to love'
- /n/ Voiced alveolar nasal: *nɛɛ* 'this, these, here'; *naq* 'still, yet, be at', *nək* 'to know (information), to know how', *niw* 'monkey', *niŋ* 'up at', *naaŋ* 'Miss (term of address for young woman)', *hŋan* 'sleep', *hmbaan* 'cloth', *məkən* 'nephew/niece'
- /ŋ/ Voiced palatal nasal: *ŋɛɛt* 'to drink', *ŋəkən* *dii* 'on account of', *ŋiw* 'live', *ŋuŋ* want', *ʔuŋ* 'fire'
- /ŋʔ/ Voiced velar nasal: *ŋɛh* 'cooking pot', *ŋaç* 'to turn one's head', *pntrəŋ* 'make straight', *çrŋuuk* 'to snore', *raaŋ* 'to look at'
- /hm/ Bilabial preaspirated nasal: *hmɛh* 'toward', *hmə?* 'to be sickened by', *hmooç* 'ant'
- /hn/ Alveolar preaspirated nasal: *hnaam* 'house', *hnək* '3rd pers. sg. pron. (a variant of *hək*)'
- /hŋʔ/ Velar preaspirated nasal: *hŋan* 'to sleep' (no other monosyllabic examples found)
- /r/ Voiced alveolar trill: *riɛn* 'to say', *ruəj* 'fly', *raaŋ* 'to look at', *baar* 'two', *çuər* 'to write'
- /w/ Voiced labial-velar approximant: *wiŋ* 'to forget; *wəwak* 'to exchange'; *waaw* 'to measure (liquids, rice, etc)', *trəw* 'six'
- /j/ Voiced palatal approximant: *ji?* 'we (dual, exclusive)', *ja?* 'grandparent', *kuəj* 'to carry on shoulder', *taj* 'to see'
- /l/ Voiced alveolar lateral: *luuk* 'to reach (into something)', *laap* 'spread', *lək* 'wood', *liŋ* *liŋ* 'always', *laak* 'to bloom', *lɛɛk* 'all', *pral* 'to be well after an illness or injury', *kn?duul* 'stupid', *çrŋil* 'stump'

4. Vowels

Brao Krung has nineteen vowel phonemes: eight short, eight long, and three long diphthongs, as shown in Figure 3.

		Front	Central	Back
High	Plain	i ii	ɨ ɥ	u uu
	Diphthong	ie	io	uo
Mid		ɛ ɛɛ	ə ɔɔ	o oo
Low		a aa		ɔ ɔɔ

Figure 3. Krung vowels

4.1 Description of vowels:

Short Vowels:

- /i/ High front unrounded vowel, varying between [i] and [ɪ]: *jih* 'to ride', *jit daak* 'to draw water', *bih* 'snake', *niw* 'monkey', *jiŋ* 'to sew', *tih* 'big', *bic* 'to have', *phɛɛ tit* 'cooked sticky rice', *ʃəmɨw* 'raw'
- /ɛ/ Mid front unrounded vowel: *rɛ?* 'to go', *bɛŋ* 'fast', *mɛ?* *ja?* 'ancestors', *pɛh* 'to pick', *kəjɛ?* 'unripe', *gɛh* 'hard', *dɛl* 'to taste with the tip of the tongue', *ʔblɛm ʔblɛm* 'watch a moving person from a hiding place', *lɛh* 'to untie', *ʃɛl* 'to cut (an object up to about 20 cms. across)', *kɛjɛt pluuj* 'plug of drinking gourd', *ʃɛn* 'to wear on the foot', *kɛn* 'to confine'
- /a/ Low non-back unrounded vowel: *daŋ* 'to look for', *maŋ* 'night', *nak* 'person', *bat* 'grass', *ʃəjar* 'swamp', *həbak* 'rattan', *par* 'to fly', *mat* 'eye', *caj* 'louse', *kap* 'to bite', *cah* 'red', *mah* 'cotton', *təpaj cɹla?* 'brightly shining light', *lan* 'to be stuck (in something)'
- /ɨ/ High central unrounded vowel: *wɨr* 'to stir, to be transformed', *hɨ?* 'at', *ʃɨŋ* 'foot, leg', *kəjɨk* 'heavy', *gɨl daak* 'a spring with a stream', *katɨm* 'to stub', *ʃɨm* 'delicious', *kɹlɨp* 'lid', *cɨ?* 'to return, come back', *kɹɨk* 'breast bone', *ʃəgɨr* 'a drum', *ʃɨŋɨl* 'stump', *gɨt* 'from'
- /ɔ/ Mid central unrounded vowel: *bɔ?* 'carry (a child) in a cloth on back or chest', *ʔmbɨ?* *hnəw* 'this coming afternoon', *pəh* 'seven', *brəh* 'to sow', *kəɔɔ?* 'to sprain', *kəɔɔ?* 'self', *pəcəɕ* 'to complete, finish', *trkəw* 'knee', *cəw* 'grandchild', *brnəw* 'tomorrow', *wəj* 'INTERJ. (of protest)', *pɹtəh* 'to praise', *hnəj ʔəən* 'a large number of...', *cəgəw* 'bear'
- /u/ High back rounded vowel varying between [u] and [ʊ]: *mut* 'enter', *tuc* 'to pull out of (e.g. the ground)', *tuh* 'ash', *buk* 'rotten (wood)', *ʃɹul* 'to butt', *dum* 'ripe', *khəpun* 'rice noodles with sauce and fresh vegetables', *buŋ* 'type of large basket', *cur* 'pig', *buɕ* 'to cook in water', *mut* 'to enter', *cɹ?* 'to put', *dup* 'long time'
- /o/ Mid back rounded vowel: *do?* 'hot', *joŋ* 'to stand', *ʔo?* *ʔuət* 'mist', *doŋ* 'to hear', *mo?* 'older sister', *goh* 'long', *troŋ* 'straight', *kəjoh* 'to spit'
- /ɔ/ Low back rounded vowel: *dəŋ* 'neck', *kəɔɔh* 'to break off', *nəh* 'to know', *bəh* 'salt', *cəŋ* 'to eat rice', *kəjɔ?* 'corpse', *bət* 'to slaughter', *dən* 'soft'

Long Vowels:

- /i:/ High front unrounded vowel: *tɿi* 'wife', *wiɿh* 'to leave', *miik* 'younger aunt', *gliim* 'cool', *criiŋ* 'rainbow', *ɕwiɿw* 'to turn head back and look'
- /ɛ:/ Mid front unrounded vowel: *pɛɛ* 'three', *bəbɛɛ* 'goat', *kələɛ* 'egg', *bɛɛl* 'mat', *hɛɛŋ* 'to pour', *ɲɛɛt* 'to drink', *ɕlɛɛw* 'to drift', *trɛɛ* 'floor of thin split bamboo'
- /a:/ Low non-back unrounded vowel: *baar* 'two', *maang* 'to speak', *daak* 'water', *gaak* 'to be pregnant', *phaam* 'blood', *trpaan-ɲiŋ* 'sole of foot', *raaɕ ʔmbaaɕ* 'possessions', *krlaat* 'slice(s)', *kədaaw* 'sugar cane', *cəŋaaj* 'far', *kəʔaaj* 'watermelon'
- /ii/ High central unrounded vowel: *ʔbi* 'to rain', *kəkriɿc* 'to scratch', *ɲii* 'to cry', *kadiiŋ* 'bone', *kuu ɲiiɲ* 'to not react', *ɲii* 'flower', *hriiɿɕ* 'rhinoceros', *ɲiiɕ* 'to go out', *ɲiiit* 'banana', *trɲiiw* 'forehead', *ɕii* 'to sit back in a relaxed way', *wiiŋ* 'to forget', *kəɲiiw* 'wind'
- /ɔ:/ Mid central unrounded vowel: *bəəʔ* 'father', *kələə* 'close friend', *cəkəəl* 'to pry up', *bəəm* 'to make', *ʔəən* 'much', *ɕəəŋ* 'five', *ʔəh ləəp* 'spouse's younger sibling', *rəəɕ* 'to choose', *bəbəət* 'to feel, touch', *trəəw* 'to answer', *ɲəəj* 'to look up'
- /uu/ High back rounded vowel: *pəduu* 'termite hill', *cruut* 'to harvest', *yuuc* 'wrong', *buuh* 'beer fermentation starter', *duuc tii* 'to wash hands', *cuuŋ* 'long handled axe', *huup* 'picture', *gənit gənuur* 'to be valuable', *ɲɲuu?* *puər* 'food', *tuuɕ* 'head', *ɕuu* 'a type of large deer', *maam cuup* 'magnet'
- /oo/ Mid back rounded vowel: *hook* 'to be happy', *pluoc* 'to hop', *doom* 'to urinate', *təboot* 'to deceive', *booj cnduu* 'mountain top', *gənoop* 'friend, associate', *kədoop* 'to cover'
- /ɔ:/ Low back rounded vowel: *bək* 'field house', *gək* 'cold', *kəmək* 'year', *ɲək* 'younger uncle', *ɲək* 'to hand (something to someone)', *hriɕəl* 'echo', *trək* 'hole', *mək* 'nephew, niece', *lək* 'wood', *kəɔk?* 'to hide', *teem gək* 'kapok tree', *rəkɕ* 'to do blacksmithing', *bək* 'rolled up', *ɕək* 'to follow'

Diphthongs:

- /iɛ/ High front unrounded vowel, gliding to mid front vowel: *təkɿɛŋ* 'lamp', *hiɛn* 'to study', *kmbiɛk* 'to carry on hip', *cəniɛ* 'tree slabs', *diɛn* 'candle', *riɛɕ* 'root', *ɲiɛr* 'chicken', *dədiɛt* 'rice plants having little grain', *kriɛw* 'scythe'
- /iə/ High central unrounded vowel, gliding to mid central unrounded vowel: *khiəj* 'customarily (do), (with negative) 'never (do)', *phiə* 'for', *ɕiə* 'to believe'
- /uə/ High back rounded vowel, gliding to mid central unrounded vowel: *cuə* 'to write', *cruəl* 'chain, to have a convulsion', *tuəŋ* 'to suppose, predict', *ruət* 'to buy', *tih dəhuəw* 'big (viewed from the inside)', *cuəj* 'to plant field rice', *cuaŋ* 'to be numb'

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Appendix 1. Map of Krung, Kavet and Brao (Taveng) areas in northeastern Cambodia

