Areal features in Gongduk, Bjokapakha and Black Mountain Mönpa phonology

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Appendix A. Phonology of Gongduk

In this and the following Appendices B and C, the phoneme inventories of Gongduk, Bjokapakha and Black Mountain Mönpa are presented as background information for the phonological comparison carried out in Section 2. Appendix A represent the first account on the phonology of Gongduk and the Black Mountain Mönpa analysis in Appendix C combines information from different sources, one of which is an unpublished manuscript. The Bjokapakha data are taken from Grollmann (in press). The Black Mountain data are a synthesis of the information provided in Hyslop (2016b) and van Driem (1995a, n.d.(b)) supplemented with notes drawn from personal communication with George van Driem. Brackets in Tables 3–8 indicate uncertainty about the phonemic status or marginal attestation of the respective sound. If the transcription used for a specific sound deviates from the conventions of the International Phonetic Alphabet, the IPA-symbol is given in square brackets.

Consonant inventory

The consonant phoneme inventory of Gongduk is presented in Table 3. The Gongduk consonant inventory exhibits fifteen distinctive oral stops. Four places of articulation can be distinguished, i.e. bilabial, dental, retroflex and velar. The retroflex stops, however, must be regarded as loan phonemes, since they only appear in loan words. Within each plosive set a voiceless unaspirated phoneme is contrasted with a voiceless aspirated and a voiced phoneme. In addition, two uvular plosives [q] and [g] are present in Gongduk as free allophones of the velar stops (cf. § 2.5). In syllable final position, the plosives /p/, /t/, /k/ are unreleased and glottalised, i.e. [ʔpˀ], [ʔtˀ], [ʔkˀ]. The phonological opposition between a syllable final /k/ and a syllable final glottal stop /ʔ/ is often neutralised, e.g. /goŋduk/ [goŋduʔ], /rek/ [reʔ] 'head' (cf. § 2.4). Another phenomenon involving the glottal stop is a rhinoglottophiliac tendency whereby a velar nasal /ŋ/ is realised as [ʔ] in allegro speech, e.g. in /tʁŋ/ [tʁʔ] 'to see' or in /ŋəŋpo/ 'all, together' after another nasal, e.g. /don ŋəŋpo/ [don ʔəŋpo] 'all pigs' or /ðiŋ ŋəŋpo/ [ðiŋ ʔəŋpo] 'all of us, we all'.

Gongduk shows two series of affricates. Only the alveo-palatal series is frequently attested. The dental affricates seem to be unstable, and it is highly questionable whether these affricates constitute native sounds, since aspirated voiceless [tsʰ] and voiced [dz] appear almost exclusively in loan words, e.g. *dzoŋkhə* 'Dzongkha' from Dzongkha ཛོང་ཁ *dzongkha* or *tshəo* 'cross nephew' from Bjokapakha *tshawu*. Additionally, the only commonly attested dental affricate [ts]

tends to be articulated as fricative [θ] rather than affricate [ts] (cf. § 2.2). Likewise, loan words from both Tshangla and Dzongkha containing dental affricates are integrated with loss of the respective affricate, e.g. *ϑəlu* 'orange', from Dzongkha ཚ་ལུ་ tshälu, or *ϑikpʏ* 'stone wall', from Dzongkha བརྩིགས་པ་ *tsip* 'to make a wall', probably via Tshangla *tsikpa* 'wall'. The affricate pronunciation is more commonly attested with younger or multilingual speakers who realise the loan words containing [ts] according to the donor language.

Table 3. Gongduk consonant inventory

	Bilabial	Dental-alveolar	Retroflex	Palatal	Velar	Glottal
Plosives						
Aspirated	ph	th [t̪ʰ]	(ʈh)		kh	
Voiceless	p	t [t̪]	(ʈ)		k	ʔ
Voiced	b	d [d̪]	(ɖ)		g	
Affricates						
Aspirated		(tsh)		ch [tɕʰ]		
Voiceless		ts		c [tɕ]		
Voiced		(dz)		j [dʑ]		
Fricatives						
Voiceless		θ		ś [ɕʲ]		h
Voiced		ð				
Nasals	m	n			ŋ	
Liquids		r [ɾ], l				
Glides	w			y [j]		

The fricative inventory includes two dental fricatives /θ/ and /ð/, a strongly palatalised alveo-palatal fricative /ɕʲ/ and a glottal fricative /h/. Three nasal phonemes are attested in Gongduk, namely in bilabial, dental and velar position. A palatal nasal is attested, but only as allophone of either /n/ or /ŋ/ before the high front vowel /i/ or the palatal glide /j/, e.g. *ni* [ni ~ ɲi] 'sun' or *ŋyə-* [ŋjə ~ ɲi] 'to come'. Gongduk also exhibits two glides /w/ and /j/ and two liquids /l/ and /r/.

Vowel inventory

The Gongduk vowel phonemes are presented in Table 4. Gongduk exhibits six vowel phonemes, namely the high vowels /i/ and /u/, the mid-high vowels /e/, /ʏ/ and /o/ as well as the mid-low vowel /ə/. The two rounded front vowels [y] and [ø] are probably not phonemic, since most instances appear after palatal consonants, e.g. *gəśöt* 'good' or *śüt-*'to whistle', or in loan words, e.g. *lopön* 'teacher', from Dzongkha སློབ་དཔོན་ *'löbö*. A few instances, however, cannot be explained in this way, e.g. *atöptə* 'uncle'. Mid-low vowels [ɛ] are [ɔ] are free allophones of the respective mid-high vowels /e/ and /o/ in most instances, but certain lexemes constantly exhibit a mid-low vowel. Therefore, the two phones may also constitute marginal phonemes.

Gongduk shows a vowel harmony with regard to height, so that /i/ and /e/, /u/ and /o/ and /ə/ and /ʏ/ are complementarily distributed in many grammatical suffixes, e.g. the locative and

ablative case markers *-ko* and *-ki*, the former appearing as [ku] after high vowels and the latter as [ke] after non-high vowels.

Table 4. Gongduk vowel phonemes

	Front		Central	Back
High	i	(ü [y])		u
Mid-high	e	(ö [ø])	ɤ	o
Mid-low	(ɛ)		ə	(ɔ)

A characteristic feature of Gongduk is the existence of two different non-low central vowel phonemes, namely /ə/ and /ɤ/. The quality of /ə/ often approaches that of [ɐ] or [ɑ]. The unrounded mid central vowel /ɤ/ shows a broad range of unconditioned, free phonetic alternation, from high central [ɨ] and high back [ɯ] to mid back [ɤ], mid central [ə] and mid-low central [ɐ]. The grapheme <ɤ> is used in this paper and forthcoming publications on Gongduk for this vowel phoneme since it most clearly differentiates it from other vowel graphemes, namely <ə>, <i> and <u> and one of its free allophones is an unrounded mid-high back vowel [ɤ]. Minimal pairs between the two central vowels include *wɤ* 'rain' vs. *wə-* 'to do' and *lɤ* 'penis' vs. *lə* 'ear'. Many instances of /ɤ/ diachronically arose from allophonic realisations of /ə/ in certain phonological environments, e.g. preceding a nasal, and often still alternate freely with /ə/, viz. /lənθ-/ [lɤnθ ~ lənθ] 'to burn', or are in complementary distribution with /ə/ in the context of vowel harmony, e.g. the first person singular intransitive agreement morpheme *-əŋi*, which appears as [ɤŋi] after a verb with a high root vowel, viz. /gɤt+əŋi/ [gɤdɤŋi] 'I'm going'.

The mid-low central vowel /ə/ has a sociolinguistically conditioned allophone [a]. The latter realisation is preferred by speakers living outside of the Gongduk speaking area or by speakers addressing linguistic outsiders. The speakers change the native pronunciation [ə] to [a] in order to make their speech sound less markedly Gongduk and more compatible with the phonologies of dominant languages such as Dzongkha or Tshangla, where the quality of the low vowel is [a] rather than [ə], and to avoid stereotypical pejorative judgements based on the aberrant accoustic impression of the Gongduk language. The same sociolinguistic pressure causes the alveolar pronunciation of the dental fricatives (cf. § 2.1).

Appendix B. Phonology of Bjokapakha

The phonetics and phonology of Bjokapakha are described comprehensively in Grollmann (in press), of which the present section is a short summary. The transcription of the Bjokapakha phonemes follows Grollmann (in press).

Consonant inventory

The consonant inventory of Bjokapakha is shown in Table 5. Bjokapakha has four series of stops, namely in bilabial, dental, retroflex and velar place of articulation. Each series consists of three phonemes, differentiated by voice and aspiration, i.e. a voiceless aspirated, voiceless unaspirated and voiced stop. The retroflex series is attested, but less frequent than the other stop

series, and many instances appear in loan words. Nasal stops are attested for bilabial, dental, palatal and velar position.

Table 5. Bjokapakha consonant phonemes

	Bilabial	Dental-alveolar	Retroflex	Palatal	Velar	Glottal
Plosives						
Aspirated	ph	th [t̪ʰ]	(ʈh)		kh	
Voiceless	p	t [t̪]	(ʈ)		k	
Voiced	b	d [d̪]	(ɖ)		g	
Affricates						
Aspirated		tsh [t̪sʰ]		ch [tɕʰ]		
Voiceless	psh [pɕ]	ts [t̪s]		c [tɕ]		
Voiced		(dz [d̪z])		j [dʑ]		
Fricatives						
Voiceless		s [θ]		sh [ɕ]		h
Voiced		z [ð]		(zh [ʑ])		
Nasals	m	n		ɲ	ŋ	
Liquids		r [ɾ], l, (ɬ)				
Glides	w			y [j]		

Bjokapakha exhibits two series of affricates in dental and palato-alveolar position, again with an aspirated, a voiceless and a voiced member in each series. The voiced dental affricate is probably a loan phoneme and does not appear in native vocabulary (Grollmann in press). Additionally, Bjokapakha, like other Tshangla varieties, exhibits a peculiar palato-bilabial sequence [pɕ]. Andvik (2010: 15) analyses the sequence as a cluster of /p/ and /ɕ/, whereas Grollmann (in press) observes that the sequence behaves phonologically like an affricate rather than like a consonant cluster. Consonant clusters consisting of voiceless stops and /ɕ/ are not attested for any Tshangla varietiy described so far, indicating a systematic gap for such clusters and an analysis of the sequence as affricate rather than cluster, as suggested by Grollmann (in press). Bodt (2012: 191) argues that this sequence in Tshangla has come about by remodelling original [pʰ] under the influence of Dzongkha, which has bilabial-palatal affricates [ptɕ], [ptɕʰ], [bdʑ] and [b̥dʑ] deriving historically from the combination of bilabial initials with a palatal glide [j] (cf. van Driem 1998: 86–88, 101).

The domain of fricatives shows voiceless and voiced sibilants in dental and palato-alveolar position and a voiceless glottal fricative. Grollmann (in press) uses the graphemes <s> and <z> for the dental fricatives [θ] and [ð]. This convention is followed in Table 5, although a representation as <θ> and <ð> seems adequate, too.

Bjokapakha further shows two glides in labiovelar and palatal position and three liquids, a lateral approximant /l/, a voiceless lateral fricative /ɬ/ and a rhotic /ɾ/. According to Grollmann (in press), the lateral fricatives is a loan phoneme and appears only twice, but is attested in minimal pairs with the lateral approximant and is therefore attributed phonemic status in her analysis. The marginal attestation is rendered in Table 5 by parentheses.

Table 6. Bjokapakha vowel phonemes

		Front	Central	Back
High	i	(ü [y])	ɨ	u
Near-high	ɪ			
Mid	e	(ö [œ])		o
Low			a	

Vowel inventory

The vowel inventory of Bjokapakha is shown in Table 6. Bjokapakha exhibits nine vowel phonemes, the three unrounded front vowels /i/, /ɪ/ and /e/, the two rounded front vowels /y/ and /œ/, the two central vowels /ɨ/ and /a/ and the two rounded back vowel /u/ and /o/. The two front vowels /y/ and /œ/ appear mostly in loan words, e.g. *düncha* 'discussion', from Dzongkha བསྟུན་གྲོས་ *tündrö* or *bö* 'Tibet', from Dzongkha བོད་ *b'ö*, and as allophones of the two corresponding back vowels /u/ and /o/, for example before a palatal glide [j], e.g. /uthu+ya/ [utʰy] 'may come' or [rœj] 'to be able' (cf. Grollmann in press).

　　Bjokapakha has a lax high vowel /ɪ/, like certain other Tshangla varieties, notably the Dungsam dialects (cf. Bodt 2012; Hoshi 1987). This vowel is attested in a number of near-minimal pairs in Bjokapakha and can be analysed as phoneme. A noteworthy vowel of Bjokapakha in comparison with other Tshangla varieties is the unrounded high central vowel /ɨ/, which is phonemic, as attested in the minimal pairs *khɨ* 'faeces' vs. *khu* 'dog' and *miŋ* 'name' vs. *miŋ* 'eye', although in almost complementary distribution with the near-high vowel /ɪ/ (cf. Grollmann in press) and conceivably derived historically from the latter (cf. § 2.3). No similar vowel is attested in any other described Tshangla variety.

Appendix C.　Phonology of Black Mountain Mönpa

The present state of knowledge about Black Mountain Mönpa phonology is still rudimentary. The earlier publications on Black Mountain Mönpa (van Driem 1994a, 1995a, 2001) are based on the Rukha dialect (cf. van Driem 2001: 919–922). Likewise, the research of Hyslop (2016b) concerns the Rukha dialect. Hyslop (2016b: 85–86) provides a consonant and vowel inventory, noting that the analysis is still preliminary. The following account combines the information given in Hyslop (2016b) and van Driem (1995a, n.d.(b)) to give a preliminary overview of the Black Mountain Mönpa phoneme inventory.

Table 7. Black Mountain Mönpa consonant phonemes

	Bilabial	Dental-alveolar	Retroflex	Palatal	Velar	Uvular	Glottal
Plosives							
Aspirated	pʰ	tʰ [t̪ʰ]	(ʈʰ)	cʰ	kʰ		ʔ
Voiceless	p	t [t̪]	(ʈ)	c	k		
Voiced	b	d [d̪]	(ɖ)	ɟ	g		
Nasals	m	n [n̪]		ɲ	ŋ		
Affricates							
Aspirated		(tsʰ [t̪sʰ])					
Voiceless		ts [t̪s]					
Voiced		(dz [d̪z])					
Fricatives							
Voiceless		s ~ θ, ʃ		ç			h
Voiced		z ~ ð, ʒ				ʁ	
Liquids		l, ɬ, r					
Glides	w			j			

Consonant inventory

The preliminary consonant inventory of Black Mountain Mönpa is given in Table 7. Black Mountain Mönpa shows five series of stops in labial, dental, retroflex, palatal and velar place of articulation as well as a phonemic glottal stop. Each series contains a voiceless aspirated, voiceless and voiced phoneme. The retroflex series is attested in Hyslop (2016b), but not in van Driem (n.d.(b)). Considering the status of retroflex sounds in other languages of Bhutan, for example Tshangla or Gongduk (cf. Appendices A and B above), the retroflex stops in Black Mountain Mönpa may constitute a recent assimilation to Dzongkha and not represent native phonemes of the language. Since the data of Hyslop (2016b) are from the Rukha dialect, which has experienced the strongest Dzongkha influence of all Black Mountain Mönpa dialects, the analysis of the retroflex stops as loan phonemes is plausible.

The phonetic realisation of the palatal stop phonemes is not entirely clear. In Hyslop (2016b), they are analysed as true palatal stops [cʰ, c, ɟ], whereas in van Driem (n.d.(b)), they are transcribed as post-alveolar affricates [tʃʰ, tʃ, dʒ]. The lexical lists in Hyslop (2016b: 87–93) show both palatal stops and post-alveolar affricates, but it remains unclear whether these two series represent different phonemes or free allophones of the same underlying phonemes. In Table 7, this variation is not represented, thus implying an analysis as free allophony of underlying palatal stops. In syllable-final position, the stops /t/ and /k/ are not released and show a strong simultaneous glottalisation, viz. [ʔt̚] and [ʔk̚] (van Driem n.d.(b)). Black Mountain Mönpa has four nasals in bilabial, dental, palatal and velar position.

Table 8. Black Mountain Mönpa vowel phonemes

		Front	Central	Back
High	i	y(:)		u
Mid-high	e	ø(:)	ɤ	o
Mid-low	ɛ			ɔ
Low			ɑ ~ ə	

Black Mountain Mönpa shows a series of dental affricates. However, only in Hyslop (2016b) is the full series of voiceless aspirated, voiceless and voiced given. In van Driem (n.d.(b)), only the voiceless plain phoneme is given.

The fricatives of Black Mountain Mönpa include two series of voiceless and voiced fricatives in dental or alveolar and post-alveolar position, a voiceless palatal and a voiced uvular fricative as well as a glottal fricative. The alveolar fricatives are attested as such in Rukha (Hyslop 2016b), but are realised as dental [θ] and [ð] in the eastern dialects (George van Driem, p.c.). Whereas these fricatives are realised constantly as alveolar in Rukha, this pronunciation is only recently being adopted also in the eastern dialects and replaces the elder dental articulation (George van Driem, p.c.). The voiceless palatal fricative and the voiced uvular fricative are only attested in Hyslop (2016b) but not in van Driem (n.d.(b)). However, Hyslop (2016b: 97) observes that the uvular fricative only occurs in native vocabulary, therefore assigning it a status as a native phoneme. Black Mountain Mönpa further shows three liquid sounds, namely a rhotic /r/ and two laterals, and two glides /w/ and /j/.

Vowel inventory

A preliminary vowel inventory of Black Mountain Mönpa is given in Table 8. Hyslop (2016b) and van Driem (1995a, n.d.(b)) mostly agree in their analysis of the vowel inventory of Black Mountain Mönpa. In the account of Hyslop (2016b: 86), Black Mountain Mönpa has ten vowel phonemes, the five front vowels /i/, /e/, /ɛ/, /y/ and /ø/, the four back vowels /u/, /o/, /ɔ/ and /ɑ/ as well as a central vowel /ɤ/. In the account of van Driem (1995a: 235), the mid-high front vowel [e] is not analysed as a phoneme, but as allophone of the short high vowel /i/. Additionally, van Driem (1995a: 235) gives the quality of the low vowel as [ɑ ~ ə].

Interestingly, the central vowel /ɤ/ is not included in the account of van Driem (1995a: 235), which likewise describes the Rukha vowel inventory. According to van Driem (p.c.), the central vowel is, however, attested in the eastern dialects as a significant characteristic of these dialects *vis-à-vis* the western dialects spoken in Rukha and Riti which lack the central vowel. The curious fact that the central vowel is nevertheless attested for Rukha in the account of Hyslop (2016b) is addressed above in Section 2.3.

Vowel length is considered to be phonemic by van Driem (1995a: 235), with the exception of the front rounded vowels, which are always long, whereas vowel length is seen by Hyslop (2016b: 85–86) as a marginal feature which is probably not phonologically relevant. According to both Hyslop (2016b) and van Driem (1995a: 235), Black Mountain Mönpa exhibits a tone system with two register tones reminiscent of Dzongkha or East Bodish languages.

Appendix D. Comparison of basic vocabulary

In this Appendix, a comparison of some basic vocabulary of Gongduk, Black Mountain Mönpa and Bjokapakha is undertaken. Presumable cognates from other branches of Trans-Himalayan are provided to show that the basic vocabulary of the three languages is quite distinct and that similarities are mostly due to shared retention from a more ancient common ancestor.[1] This supports the statement made in Section 3.1 that these three languages are not more closely related to each other.[2]

Table 9. Comparison of basic vocabulary

Meaning	Gongduk	BM Mönpa	Bjokapakha	Comparative notes
hair (on head)	θɤm	guluŋ	tsham	Gongduk form potentially borrowed from Tshangla.
tongue	dəli	líː	lɪ	Shared retention of element *lV*, cf. Lhokpu *ḽésa*, Dhimal *detoŋ*, Toto *lɛbɛ́*, Chepang *le*, Lepcha *ʔálín*, Proto-Bodo *()-lai*, Proto-Kuki-Chin **lay*, Mongsen Ao [*tə*]-*məli*, Old Chinese 舌 **mə.lat*.
eye	mik	mek ~ mik	miŋ	Shared retention (with regular **/k/ > /ŋ/ /_#* in Bjokapakha), cf. Written Tibetan མིག་ *mig*, Lhokpu *mik ~ mikto*, Chepang *mik*, Proto-Bodo **m(ə)k-()*, Proto-Kuki-Chin **mik*, Qiang *miː*, Old Chinese 目 **C.m(r)[u]k*.
ear	nərəŋ	naktaŋ	nabali	Shared retention of element na-, cf. Old Tibetan རྣ་ *rna*, Lhokpu *naktoŋ*, Dhimal *nhatoŋ*, Toto *nanuŋ*, Mewahang *nabak*, Proto-Bodo **na*, Proto-Kuki-Chin **naa ~ hnaa*, Old Burmese *ṅāḥ*, Old Chinese 耳 ** C.nəʔ*.

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1. Trans-Himalayan etymologies are only given to substantiate claims of shared retention. Since the main point of this comparison is to show that Gongduk, Black Mountain Mönpa and Bjokapakha are not closely related, no external cognates are given if all three languages show obviously different etyma, although external cognates may well be found, e.g. for Gongduk *kiŋ* 'house' or Bjokapakha *sha* 'tooth'.

2. The variation in two verb roots of Gongduk represents paradigmatic stem alternation. The variation in Black Mountain Mönpa lexemes reflect dialectal variation. Black Mountain Mönpa data are given in the sub-phonemic transcription employed in van Driem (n.d.(b)), except for high tone, which is indicated by an acute accent on the vowel, following Hyslop (2016b). Note that there is some discrepancy between the data given by Hyslop (2016b) and van Driem (n.d.(b)). For simplicity and because the data of Hyslop (2016b) are published and therefore accessible for comparison, only the data of van Driem (n.d.(b)) are given in Table 9. Certainly, more research on Black Mountain Mönpa phonology needs to be carried out to clarify the phonological form of these lexemes.

Table 9. *(continued)*

Meaning	Gongduk	BM Mönpa	Bjokapakha	Comparative notes
tooth	ɤn	áː ~ waː	sha	
bone	rukɤŋ	fiɤtphok ~ yöphok	khaŋ	Second syllable of Gongduk and form in Bjokapakha probably cognate.
blood	winiʔ	kɔk	yi	Potentially shared retention in Gongduk and Bjokapakha, cf. Lhokpu *gi ~ giti*, Dhimal *hiti*, Toto *yutí*, Dolakha Newar *hí*, Chepang *wi, huy*, Lepcha *vi*, Mongsen Ao *(a)-jíʔ*, Galo *ii^L*. Black Mountain Mönpa form probably borrowed from East Bodish, cf. Bumthang *kak*.
hand/ arm	gur	lɤk ~ lok	gadaŋ	Gongduk form potentially a retention, cf. Lhokpu *kur*, Dhimal *khur*, Toto *kui ~ kuü*, Dumi *khir*, Khaling *khār*, maybe also Proto-Kuki-Chin **kut ~ khut*, Chepang *krut*. First syllable of Bjokapakha form maybe cognate to the Gongduk form and second syllable maybe cognate to the Black Mountain Mönpa form, with regular **/k/ > /ŋ/ /_#* and ʔ**/l/ > /d/ /V_V* in Bjokapakha.
leg/foot	bidɤʔ	dɤkpɛŋ ~ tɛ̥kɛŋ	bitiŋ	Gongduk form possibly borrowed from Tshangla before the Tshangla sound change of **/k/ > /ŋ/ /_#*. First syllable of Black Mountain Mönpa form maybe cognate to second syllable of Bjokapakha and Gongduk form.
faeces	ki	cok	khɨ	Shared retention in Gongduk and Bjokapakha, cf. Old Tibetan ལྕི་ *lci < *ḫl̥i*, Limbu *hi*, Dumi *khil*, Thangmi *kili ~ kini ~ kli*, Old Burmese *khliyḥ*, Old Chinese 屎 **[qʰ]ijʔ*. Black Mountain Mönpa form probably borrowed from East Bodish, cf. Bumthang *cok*.
water	dɤŋli	cö, khe	ri	
rain	wɤ	ghö	ŋamtsu	
dog	oki	cüla ~ khula	khu	Shared retention, cf. Old Tibetan ཁྱི་ *khyi*, Dhimal *khiya*, Toto *kiya*, Chepang *kuyʔ*, Old Burmese *khuyḥ*, Qiang *khuə*, Japhug *khuna*, Old Chinese 犬 **[k]ʷʰˤ[e][n]ʔ*.
pig	don	pɔk	phakpa	Shared retention in Black Mountain Mönpa and Bjokapakha, cf. Written Tibetan ཕག་པ་ *phag pa*, Lhokpu *pak*, Chepang *pyak*, Limbu *phak*, Mewahang *bak*, Written Burmese *wak*, Proto-Kuki-Chin **wok*, Proto-Bodo **wak*.

Table 9. *(continued)*

Meaning	Gongduk	BM Mönpa	Bjokapakha	Comparative notes
fish	kuŋwə	nyẹ	ŋa	Shared retention, cf. Written Tibetan ཉ *nya*, Lhokpu *ŋá ~ hā*, Dhimal *haya*, Toto *ŋaya*, Dumi *ŋi*, Lepcha *ngú*, Old Burmese *ṅāḥ*, Proto-Kuki-Chin **ŋaa ~ hŋaa*, Meithei *ŋá*, Old Chinese 魚 **[r.ŋ]a*. Palatal form in Black Mountain Mönpa probably influenced by East Bodish, cf. Bumthang *nya*.
louse	dɤr	θæːk	shiŋ	Retention of two different roots. For Gongduk (with regular **/s/ > /d/*), cf. Lhokpu *sir*, Dhimal *sira*, Dumi *seːr*, Situ *sōr*. For Black Mountain Mönpa and Bjokapakha (with regular **/k/ > /ŋ/ /_#*), cf. Written Tibetan ཤིག *shig*, Limbu *siʔ*, Proto-Kuki-Chin **hrik*, Proto-Bodo **tVk*, Old Chinese 蝨 **srik*.
bear	bekpələ	wɤm ~ wom	omsha	Shared retention in Black Mountain Mönpa and Bjokapakha, cf. Old Tibetan དོམ *dom*, Kurtöp *wam*, Old Burmese *wam*, Proto-Kuki-Chin **wom*, Old Chinese 熊 **C.[ɢ]w(r)əm*. Gongduk form probably taboo replacement.
son	ledə	bæθaː	za	Shared retention of element *sa- ~ za- < ?*ts(h)a-* (with regular **/s/ > /d/* in Gongduk), cf. Written Tibetan ཚ་བོ *tsha bo* 'grandson', ཚ་མོ *tsha mo* 'granddaughter', Lhokpu *-tsan* 'offspring, young animal', Dhimal *can* 'boy', Nachiring *-tsha* 'child (also of animals)', Dolakha Newar *-cā* 'diminutive suffix', Written Burmese *sāḥ* 'son', Old Chinese 子 **tsəʔ* 'child'.
daughter	medə	bæmɛt	zamin	Shared retention of elements *me(t) ~ mi(t)-* 'FEM' (with regular **/t/ > /n/ /_#* in Bjokapakha), cf. Written Tibetan བུད་མེད *bud med* 'woman', Written Burmese *sa-mīḥ* 'daughter', Lhokpu *me-, met-, -met* 'FEM', Toto *ceŋmé* 'daughter'.
name	kət	mön ~ min	miŋ	Shared retention in Black Mountain Mönpa and Bjokapakha, cf. Written Tibetan མིང *ming*, Lhokpu *miŋ*, Mewahang *nuŋ*, Old Burmese *mañ* < Proto-Burmish **miŋ*, Proto-Kuki-Chin ** min ~ *hmin ~ *miŋ ~ *hmiŋ*, Proto-Bodo **muŋ*, Karbí *mén*. Gongduk form possibly borrowed from East Bodish, cf. Bumthang *kat* 'language'.
house	kiŋ	mhịː ~ mhẹː	phai	

Table 9. *(continued)*

Meaning	Gongduk	BM Mönpa	Bjokapakha	Comparative notes
fire	mi	áːmik ~ áːmit	mi	Shared retention, cf. Old Tibetan མྱེ་ *mye*, Lhokpu *me*, Chepang *mhe*, Old Burmese *mīḥ*, Proto-Kuki-Chin **may*, Bangru *mεː*, Karbí *mē*, Japhug *smi*, Qiang *mə*.
to hear	lə yu-	goː-	nai tha-	
to see	tɤŋ-	tuŋ-	thoŋ-	Shared retention, cf. Written Tibetan མཐོང་ *mthong* Lhokpu *tiŋ-*, Dhimal *tiŋli*, maybe also Old Burmese *mraṅ*.
to look	məl- ~ mɤt-	mak-	got-	
to sit	mi- ~ mu-	buŋ- ~ bæŋ-	laŋ-	
to die	komθ-	θεː- ~ θεʔ-	shi-	Shared retention in Black Mountain Mönpa and Bjokapakha, cf. Lhokpu *si-*, Limbu *simaʔ*, Chepang *si-*, Old Burmese *siy*, Proto-Kuki-Chin **thii ~ *thiʔ*, Proto-Bodo **təi*, Old Chinese 死 **sijʔ*. Gongduk form probably cognate to Old Chinese 戡 **[kʰ]ˤ[ə]m* 'to kill' and Old Tibetan √*kum* 'to kill'.
to kill	tɤt-	θüt- ~ θut- ~ θit-	she-	Shared retention, cf. Written Tibetan བསད *bsad* (ᴘᴛ), Lhokpu *sat-*, Dhimal *seʔli*, Toto *sâ-*, Mewahang *seʔma*, Lepcha *sót*, Old Burmese *sat*, Proto-Kuki-Chin **that ~ thaʔ*, Old Chinese 殺 **s<r>at*. Regular **/s/ > /t/* in Gongduk.
one	ti	tɛk	thur	Shared retention, cf. Bumthang *thek*, Limbu *thik*, Athpahariya *thi(k)*, Dumi *tik*, Old Burmese *tac* < Proto-Burmish **tik*, Old Chinese 隻 **tek* 'single'.
two	niktsə	nhü	ɲiktsiŋ	Shared retention of element **ni(C)-*, cf. Old Tibetan གཉིས་ *gnyis*, Lhokpu *nih-*, Dhimal *nheʔ-*, Nachiring *nis-*, Chepang *nis-*, Old Burmese *nhac* < Proto-Burmish **nhik*, Proto-Kuki-Chin **niʔ ~ hniʔ*, Mongsen Ao *anət*, Japhug *ʁnuz*, Old Chinese 二 **ni[j]-s*. Gongduk form potentially borrowed from Tshangla.
three	towə	sam	sam	Shared retention, cf. Old Tibetan གསུམ་ *gsum*, Lhokpu *sum-*, Mewahang *sum-*, Chepang *sum*, Old Burmese *sumḥ*, Proto-Kuki-Chin **thum*, Qiang *xsə*, Japhug *χsum*. Gongduk form potentially an early borrowing from Tshangla, before the sound change **/s/ > /t/* was completed.

Table 9. *(continued)*

Meaning	Gongduk	BM Mönpa	Bjokapakha	Comparative notes
four	piyə	blö	pshi	Shared retention, cf. Old Tibetan བཞི་ *bzhi*, < *bʲi by Benedict's law (cf. Hill 2011), Kurtöp *ble*, Lhokpu *liː-*, Dhimal *dya-*, Thangmi *oli*, Kulung *liː-*, Old Burmese *liy*, Karbí *phlī*, Mongsen Ao *phəli*, Lepcha *fali*. Retention of the cluster *bl- in Black Mountain Mönpa.
five	ŋəwə	lɔŋ	ŋa	Shared retention, cf. Old Tibetan ལྔ་ *lnga*, Bumthang *yanga*, Lhokpu *ha- ~ hã-*, Dhimal *na-*, Toto *ŋa-*, Chepang *po.ŋa*, Limbu *na-*, Lohorung *ŋa-*, Old Burmese *ṅāḥ*, Proto-Kuki-Chin *ŋaa, Mongsen Ao *phaŋa*, Old Chinese 五*C.ŋˤaʔ. Retention of the cluster *lŋ -in Black Mountain Mönpa.
six	kukpə	o̱ːk	khuŋ	Shared retention in Gongduk and Tshangla, cf. Old Tibetan དྲུག་ *drug*, Lhokpu *ʈuk-*, Dhimal *tu-*, Old Burmese *khro₂k* < Proto-Burmish *khruk, Proto-Kuki-Chin *ruk, Karbí *thrōk*, Mongsen Ao *təruk*, Qiang *χʈʂu*, Japhug *kutʂɤ*, Old Chinese 六 *k.ruk. Potentially innovative Black Mountain Mönpa form. Gongduk form potentially borrowed from Tshangla before the sound change in Tshangla */k/ > /ŋ/ /_#.
seven	ðukpə	nyí	zum	Gongduk form potentially borrowed from Tshangla before the sound change in Tshangla *ʔ/k/ > /m/ /_#.
eight	yitpə	jit [dʒit]	yɪn	Shared retention, cf. Old Tibetan བརྒྱད་ *brgyad*, Kurtöp *jat*, Lhokpu *get-*, Dhimal *yeʔ-*, Written Burmese *rhac* < Old Burmese *rhyat, Proto-Kuki-Chin *riat, Japhug *kurcat*, Qiang *kheɹ ~ khe*, Old Chinese 八 *pˤret. Gongduk form potentially borrowed from Tshangla before the sound change in Tshangla *⁠/t/ > /n/ /_#. Black Mountain Mönpa form probably borrowed or influenced by East Bodish.
nine	guwə	doːga	gu	Shared retention, cf. Old Tibetan དགུ་ *dgu*, Lhokpu *ku-*, Dhimal *koha-*, Toto *ku-*, Dolakha Newar *gu-gar*, Bunan *gu*, Written Burmese *kuiḥ* < Old Burmese *kuiwḥ, Mongsen Ao *thuku*, Qiang *zguə*, Old Chinese 九 *[k]uʔ. Retention of cluster *dg- in Black Mountain Mönpa.
ten	deyə	chö	se	

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