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## **On the position of Báimǎ within Tibetan: A look from basic vocabulary<sup>1</sup>**

### **1. Introduction**

Báimǎ 白马 is a Tibeto-Burman language, spoken by approximately 10,000 residents of three counties in Sìchuān 四川 Province: Jiǔzhàigōu 九寨沟; Sōngpān 松潘 (Zung-chu) and Píngwǔ 平武; and in Wénxiàn 文县 in Gānsù 甘肃 Province. The Báimǎ people call themselves [pe<sup>53</sup>] and are referred to as Dwags-po in Tibetan. They reside in the immediate neighbourhood of Qiāng 羌 (to their South-West), Chinese (East and South) and Tibetan ethnic groups (West and North).

The status of the Báimǎ language—separate language or Tibetan dialect—is a matter of controversy. Officially classified as Tibetans in the 1950s, the Báimǎ advanced claims as an independent ethnic group in the 1960s and the 1970s, but were never officially reclassified. The Báimǎ reside in the area historically populated by the Dī 氐 people, whose descendents they claim to be. Tibetans invaded the Dī territory in the 7th century and assimilated the local population, which probably subsequently shifted to a form of Tibetan spoken by the invaders.<sup>2</sup> The Báimǎ language exhibits a number of non-Tibetan features in its lexicon, morphology and syntax, which are arguably the result of substratum interference of the original language of the Dī (Huáng & Zhāng 1995: 116-117). Báimǎ is currently considered, in Jackson Sun's (2003a: 788 n. 29) words, as “merely an aberrant Tibetan dialect”. It is provisionally classified within the Khams group, although it also has a number of Amdo characteristics (Huáng and Zhāng 1995: 104; Zhāng 1997: 134-135, 140). Reasons for the grouping of Báimǎ within Khams—never explicitly discussed by its advocates—are presumably the drastic simplification of the syllable structure, the elimination of ancient Tibetan syllables codas and the presence of tones. As recently argued by Jackson Sun (2003a: 795-796), these are tendencies rather than reliable phonological isoglosses, for which reason Khams “seems to have been arrived at by lumping together a host of mutually unintelligible speech forms” (p. 794). The question of the position of Báimǎ within Tibetan thus remains open.

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<sup>2</sup> On the history of the Báimǎ, see Sìchuān Shěng Mínhú Yánjiūsuo 1980, Zēng and Xiāo 1987 and Chirkova 2005.

The Báimǎ lexicon is predominantly of transparent Tibetan provenance. However, sound correspondences between the sound system of ancient Tibetan, as reflected in standard Written Tibetan orthography (hereafter WT), and Báimǎ, proposed by Zhāng (1994) and Huáng & Zhāng (1995), are less regular than those between WT and established groups of Modern Tibetan dialects. Thus, one WT initial or final often has multiple correspondences in Báimǎ, suggesting several layers of loanwords from various dialects (Huáng & Zhāng 1995: 91-92). For example, according to Zhāng's analysis, WT *kh* corresponds in Báimǎ to [k<sup>h</sup>], but in some words also to [k], [ŋg], and [u]; WT *ar* corresponds in Báimǎ to [ɑ] and [a], in a few instances to [ɐ] and [ɔ], and in some isolated cases to [e] and [ɛ] (Zhāng 1994a: 12, 16).

Furthermore, Báimǎ has a number of words of unclear etymology, even in its basic vocabulary. The proportion of these words has never been estimated, nor has basic vocabulary ever been the topic of detailed investigation.

In this article, I examine the 100-word Swadesh list (1955) for Báimǎ, as the layer of lexicon which is arguably least resistible to change and which therefore can shed light on the genetic affiliation of this language. I will address the following issues:

- (1) Proposed sound correspondences;
- (2) Conformity with sound correspondences between WT and Amdo and between WT and Khams;
- (3) Unclear etymologies and their possible origins.

The 100-word Swadesh list for Báimǎ is given in the appendix. Báimǎ data quoted in this article represent the variety of Báimǎ spoken in the Báimǎ Township of Píngwǔ County, and were collected during my fieldwork there in 2003-2004. Basic vocabulary appears to be fairly stable across the varieties of Báimǎ of Jiǔzhàigōu, Sìchuān Province, and Wénxiàn, Gānsù province.<sup>3</sup> When Báimǎ forms collected in Píngwǔ differ from those in Jiǔzhàigōu and Wénxiàn, these forms are also quoted.

I compare Báimǎ data to one Khams dialect, sDe-dge (Zàng-Miányǔ yǔyīn hé cíhuì biānxiézǔ 1991), and one Amdo dialect, bLa-brang (Dài & Huáng 1992), both lingua franca's of each respective group, as well as Zhongu (Sun 2003a), a Tibetan dialect spoken in Sōngpān, in

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<sup>3</sup> According to my informants in Píngwǔ, the Báimǎ population of Sōngpān are recent immigrants from Píngwǔ, who moved to Sōngpān within the past century, and their language does not differ considerably from the Báimǎ variety of Píngwǔ. I have not yet been able to verify this information.

the immediate neighbourhood of Báimǎ.<sup>4</sup> Occasional comparisons are also made to phonological features of Chos-rje, another Tibetan dialect, which borders the Báimǎ variety of Jiǔzhàngōu (Sun 2003b). Zhongu and Chos-rje data are given here to facilitate the identification of areal features. Both Zhongu and Chos-rje, which are spoken, similar to Báimǎ, in the borderland between Tibetan and Qiāng, are argued by Sun (2003a: 797, 2003b: 5-6) to diverge sharply in phonology and vocabulary from all major Tibetan dialects.

Outlines of Báimǎ phonology are given in Nishida & Sūn (1990: 109-168) and Huáng & Zhāng (1995: 81-84). In my transcriptions, I follow Huáng & Zhāng's analysis of Sūn Hóngkǎi's palato-alveolar [ʃ, ʒ] as retroflexes [ʂ, ʐ], with the reservation that they are Mandarin Chinese retroflexes (*zh, ch, sh* in Pīnyīn transcription), i.e. laminal post-alveolar (retroflex) sibilants, according to Ladefoged & Maddieson (1996: 155). Following Nishida & Sūn's and Huáng & Zhāng's analyses, I make a threefold distinction for the affricates, viz. alveolar, such as [ts], palato-alveolar, such as [tʃ], and alveolo-palatal, such as [tɕ], even though this opposition has been argued not to be optimal in terms of maintaining sufficient perceptual contrast (Hall 1997a: 66-70, 1997b).

## 2. The 100-word Swadesh list for Báimǎ: Composition

The 100-word Swadesh list for Báimǎ contains 84 words of Tibetan origin, 15 words of unclear origin and another 7 words with partial cognation, in which one element is of unidentified etymology. 14 words are doublets, most of which combine one word of unclear origin with a word of Tibetan origin. In one instance, the word [ʐø<sup>341</sup>] 'grease, oil', is possibly a loan from Chinese, Middle Chinese *yuw*. Zhāng (1994b: 58) suggests that [ʐø<sup>341</sup>] is cognate with WT *bzhun* (sic.), probably meaning *zhun* 'melted, molten, fat', as in *zhun-mar* 'melted, clarified butter'.<sup>5</sup> In addition to somewhat strenuous semantics, this assumption involves unusual sound correspondences: WT *zh* after a prefix normally corresponds to Báimǎ [ʐ] (Zhāng 1994a: 13), cf. the verb 'melt': WT *bzhu*, Báimǎ [ʐu<sup>341</sup>]; whereas the WT final *un* corresponds predominantly to Báimǎ [e] (ibid., p. 17). A loan scenario yields a simpler explanation and furthermore exhibits a regular change from *y* [j] to [ʐ] in Báimǎ, cf. WT *yig* 'book' yields Báimǎ [ʐi<sup>341</sup>] (Zhāng 1994a: 13).

Overall, Báimǎ basic vocabulary is highly heterogeneous and appears to combine features of Khams and Amdo. For example, the initials of the words [tɕa<sup>53</sup>~tɕe<sup>53</sup>] 'hair', WT *skra*, and

<sup>4</sup> All data quoted from other sources is given in original transcriptions.

<sup>5</sup> WT words are given in Wylie's (1959) standard transcription.

[tʂ<sup>h</sup>a<sup>53</sup>] ‘blood’, WT *khrag*, corresponding to WT velar initials followed by the medial *-r-*, are characteristic for Amdo, viz. [htʂa] and [tʂhaʃ] respectively. The unexpected high tone in the word [ngue<sup>53</sup>] ‘head’, etymologically related to initially voiced *mgo* in WT, might be assigned to Khams (Roland Bielmeier, personal communication, September 2004). Báimă and Zhongu, on the other hand, share many phonological features, detailed below. In addition, they show a number of words, which often reflect etyma distinct from those in Khams and Amdo. For instance, ‘belly, stomach’ is [p<sup>h</sup>ɛ<sup>13</sup>] in Báimă and [p<sup>h</sup>u] in Zhongu, both cognate with WT *pho-ba* ‘stomach’, as opposed to the WT etymon *grod-pa* ‘belly’ in Khams and Amdo. ‘Heart’ is [s<sup>h</sup>e<sup>13</sup>] in Báimă and [se] in Zhongu, both cognate with WT *sems* ‘citta, mind, thought’, as opposed to *snying* ‘heart’ in other Tibetan dialects. Both *grod-pa* and *snying* are arguably innovations, *pho-ba* and *sems* being more archaic, cf. the Proto-Tibeto-Burman reconstructions for ‘belly, stomach’, \**pu:k* ≈ *bu:k* (Matisoff 2004: 362), and for ‘heart’, \**sam* ≈ *sem* (ibid., p. 311) respectively. Both are therefore examples of retention in the peripheral areas.

Báimă words for ‘go, walk’, [ndzi<sup>53</sup>], and ‘tongue’, [dʒa<sup>53</sup>], belong to the elegant WT register, *mchi* and *ljags* respectively, and as such are probably later loans.

In addition, Báimă basic vocabulary exhibits two features which are not present in all other dialects (cf. Zhāng 1994, 1997; Huáng & Zhāng 1995): (1) voicing of voiceless aspirated stops and affricates after nasal prefixes, e.g. [ndu<sup>35</sup>] ‘drink’ from WT *thung*; and (2) the treatment of WT *l* as *j*, e.g. WT *lam* ‘path’ is [jɔ<sup>53</sup>] in Báimă.

In the following sections, I analyse Báimă initials and rhymes, commenting in each case on similarities with other dialects, and propose a set of WT-Báimă sound correspondences for the 100-word list. Although the analysis and the proposed sound correspondences are restricted to the basic word list, occasional comparisons are made to contrastive changes in Báimă at large.

## 2.1. Báimă initials

Similar to Khams and Zhongu, Báimă has a simple syllable structure. All Báimă syllables are open and have the (n)(C)V make-up, where *n* stands for prenasalization and is homorganic with the following consonant. Some of the development from complex WT initial clusters to Báimă match those outlined by Gésāng (2001: 73-79) for Khams.

(1) In Khams, Báimă and Zhongu, stops, affricates and fricatives contrast in voicing; voiceless stops and affricates are also distinguished by aspiration. Unprefixed WT voiced stops and

affricates become devoiced in Báimă. For example, WT *gang* ‘full’ becomes [kɔ̃<sup>53</sup>] ‘full’ in Báimă; *de* ‘that’ becomes [tɛ̃<sup>53</sup>] ‘that’. Original voicing is preserved if the WT obstruent is preceded by a prefix, as *r-* in *rdo* > [dub<sup>53</sup>] ‘stone’ and *s-* in *bya-sgo-nga* > [ɕa<sup>53</sup>gue<sup>35</sup>] ‘egg’.

(2) Báimă has only one kind of complex initials, viz. prenasalized consonants, originating in WT initials preceded by the prefixes *m-* and *-*. Prenasalization preserves the original voicing of the initial in WT, e.g. *di* > [nde<sup>53</sup>] ‘this’.

(3) Unlike Khams and Zhongu, on the other hand, and more in line with Amdo, Báimă does not contrast voiced and voiceless nasals, which originate in the former dialects from WT nasals preceded by the prefix *s-*. For example, WT *sna* ‘nose’ is [ɲɐ-ngo] in Zhongu, [ɲa<sup>53</sup>] in sDe-dge, but [nd<sup>35</sup>ngue<sup>53</sup>] in Báimă ([hna ɲoŋ] in bLa-brang).

(4) Similar to Khams and Amdo, but in contrast to Zhongu, voiceless fricatives in Báimă become aspirated if not preceded by a prefix in WT. For example, WT *sha* ‘flesh’ becomes [ʃ<sup>h</sup>a<sup>53</sup>] in Báimă, [xha<sup>53</sup>] in sDe-dge, [xha] in bLa.brang, but [ʃɐ] in Zhongu. In a similar fashion, WT *sa* ‘earth’ is [s<sup>h</sup>a<sup>53</sup>] in Báimă, [sha<sup>53</sup>] in sDe-dge, [sha] in bLa.brang, and [sɐ] in Zhongu. Four exceptions in the Báimă 100-word list are the words [ʃə<sup>35</sup>] ‘louse’, WT *shig*, the imperative form of the verb ‘come’ [ʃue<sup>53</sup>], WT *shog*, the perfective/imperative form of the verb ‘die’ [ʃə<sup>53</sup>], WT *shig*, and the interrogative pronoun [su<sup>53</sup>] ‘who’, WT *su*.

(5) Similar to most varieties of Amdo as well as Zhongu (Sun 2003a: 788), and in contrast with Khams, the WT cluster *zl-* is reflected in Báimă by a dental affricate, viz. [dz], e.g. *zla-ba* [dza<sup>13</sup>] ‘moon’ and the perfective form of the verb ‘say, speak’ *bzlas* [dze<sup>35</sup>].

(6) The WT cluster *spr-* becomes [ʃ] in Báimă. For example, WT *sprin* ‘cloud’ yields [ʃe<sup>35</sup>] in Báimă, which is similar to Amdo, [ʃən], but distinct from Khams dialects, e.g. sDe-dge [tʃin<sup>55</sup>].

(7) WT *st* becomes [z] in Báimă. For example, *ster* [zə<sup>341</sup>] ‘give’, cf. the same verb in Zhongu [ʒə].

(8) The WT cluster *lj* becomes [dʒ] in Báimǎ, e.g. *ljang-khu* [dʒɔ<sup>13</sup>sə<sup>53</sup>] ‘green’, again similar to Zhongu, [dʒɔ-<sup>13</sup>gə], but distinct from Amdo, e.g. bLa-brang [dʒaŋ khə], and Khams, e.g. sDe-dge [ndʒuŋ<sup>13</sup>khu<sup>53</sup>].

(8) Báimǎ exhibits regular Tibetan palatalization of nasal stops before non-low front vowels, [i], [e] and [ɛ]. Palatalization in Báimǎ is pervasive and more consistent than in other Tibetan dialects. Even the WT focus particle *ni* and the expressions *na-ning* ‘last year’ and *gzhes-ning* ‘two years’, quoted by Jacques (2004: 149) as the only instances of the group *ni* in WT, are palatalized in Báimǎ, viz. [ɲi<sup>13</sup>], [na<sup>13</sup>ɲe<sup>35</sup>] and [zɛ<sup>13</sup>ɲi<sup>53</sup>] respectively.

Báimǎ has few examples of the collocation of nasal stops with non-low front vowels. A few exceptions in the basic word list are [ne<sup>13</sup>ne<sup>35</sup>] ‘breast, milk’, which is homophonous with the verb ‘be angry’ (origin unknown), and the negator [mə<sup>13</sup>], which corresponds to WT *mi*—regularly palatalized in Zhongu, viz. [ɲə-].<sup>6</sup> In the lower villages of the Báimǎ Township, palatalization of stops preceding [i], [e] and [ɛ] occurs at the allophonic level, as is also the case in Zhongu (Sun 2003a: 776). For example, the word ‘ashes’, WT *thal-ba*, is [t<sup>h</sup>ie<sup>35</sup>] in the lower villages and [t<sup>h</sup>ɛ<sup>35</sup>] in the upper villages.

(9) The development of WT velar stops followed by the medial *-y-* is different in the considered dialects. In Báimǎ, WT velar stops preceding *-y-* become alveolo-palatals, similar to Khams and Amdo. In Zhongu, on the other hand, WT velar stops with the *-y-* medial are transformed into dental affricates (Sun 2003a: 786). The same feature is characteristic for the Amdo dialects of the Ābà District (where Jiūzhàigōu County is located). The Báimǎ dialects of Jiūzhàigōu likewise show this feature, which, however, does not affect its basic vocabulary with the only exception of the word ‘dog’, WT *khyi*, [ts<sup>h</sup>ə<sup>53</sup>] in the Wùjiǎo and Mǎjiā Townships. An example of correspondences outside basic vocabulary is [ts<sup>h</sup>ə<sup>13</sup>ndze<sup>35</sup>] ‘neighbour’ in the Wùjiǎo and Mǎjiā Townships versus [tɕ<sup>h</sup>i<sup>13</sup>ndze<sup>35</sup>] ‘neighbour’ in the Báimǎ Township, both cognate with WT *khyim-mtshes*.

(10) The development of WT dental, labial and velar stops followed by the medial *-r-* is also dissimilar in the compared dialects. In Zhongu, WT labial and dental stops followed by *-r-*

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<sup>6</sup> In contrast, the WT form *med*, which is a fusion of the negator *mi* and the volitional existential *yod*, retained in Báimǎ in the set expression [tʃha<sup>13</sup>ɲi<sup>53</sup>], WT *cha med*, ‘I do not know’, is regularly palatalized.

merged as retroflex affricates, whereas velar stops followed by *-r-* merged rather with the palato-alveolars (Sun 2003a: 787). Similar to Amdo, Báimă treats WT velar stops with *-r-* as alveolo-palatals and dental and labial stops with *-r-* as retroflex affricates. Table 1 summarizes the development of different initials following by the medials *-y-* and *-r-* in the considered dialects.

**Table 1—Treatment of different initials following by *-y-* and *-r-* in Báimă, Zhongu, Khams and Amdo**

WT	Báimă	Zhongu	Khams	Amdo
<b>Velar + <i>-y-</i></b> <i>khyi</i> ‘dog’ <i>khyod</i> ‘you’	<b>Alveolo-palatal</b> tɕ <sup>h</sup> i <sup>53</sup> tɕ <sup>h</sup> ø <sup>53</sup>	<b>Dental affricate</b> ts <sup>h</sup> ə-ɲɛ ts <sup>h</sup> o	<b>Alveolo-palatal</b> tɕhi <sup>53</sup> tɕhø <sup>53</sup>	<b>Alveolo-palatal</b> tɕhə yə tɕho
<b>Velar + <i>-r-</i></b> <i>skra</i> ‘hair’ <i>khrag</i> ‘blood’ <i>gro</i> ‘walk’	tɕa <sup>53</sup> ~ tɕɛ <sup>53</sup> tɕ <sup>h</sup> a <sup>53</sup> ndzø <sup>341</sup>	<b>Palato-alveolar</b> <sup>h</sup> tʃe- <sup>h</sup> pə tʃ <sup>h</sup> a <sup>n</sup> dʒo	<b>Retroflex</b> tʃa <sup>53</sup> tʃha <sup>ʔ53</sup> ndzø <sup>13</sup>	htɕa tɕhaʃ ndzø
<b>Dental, labial + <i>-r-</i></b> <i>dron-po</i> ‘hot’ <i>bras</i> ‘rice’	<b>Retroflex</b> tʃø <sup>13</sup> nbu <sup>53</sup> ndzɛ <sup>35</sup>	<b>Retroflex</b> tʃø- <sup>n</sup> bo <sup>n</sup> dzɛ	tʃø <sup>31</sup> po <sup>53</sup> ndzɛ <sup>13</sup>	<b>Retroflex</b> tʃø mbo ndzɛ

The following two features are typical for Báimă and not present in other dialects:

(11) WT *l* corresponds in to *j* the Báimă basic lexicon, e.g. WT *lam* > Báimă [jɔ<sup>53</sup>] ‘road, path’, WT *lang* > Báimă [jɔ<sup>35</sup>] ‘stand’. Outside basic vocabulary, WT *l* corresponds to *l* in Báimă in the more recent layer of cultural borrowings, which includes words for utensils, religious practices and the yearly cycle. For example, the word *glang* ‘ox’ appears as [jɔ<sup>35</sup>] in the word ‘buffalo’, WT *chu-glang*, Báimă [tʃ<sup>h</sup>u<sup>13</sup>jɔ<sup>35</sup>], but as [lɔ<sup>53</sup>] in the word ‘year of the ox’, WT *glang-lo*, Báimă [lɔ<sup>53</sup>jyɛ<sup>53</sup>]. The latter is a semantically analyzable form, combining sound correspondences from two different strata of borrowings: *l* to *j*, proper to basic vocabulary, in the word for ‘year’, and the later *l* to *l* in the word ‘ox’.

Finally, *l* in the 100-word list appears in words of unclear etymology, e.g. [luɛ<sup>53</sup>tue<sup>53</sup>] ‘big’, [liə<sup>53</sup>kə<sup>53</sup>] ‘all’. A possible exception is the word [lyɛ<sup>13</sup>lyɛ<sup>35</sup>] ‘round’, which Zhāng (1994b: 62) considers as being of Tibetan provenance, *log-log*. I analyze it, due to the presence of *l*, as being of non-Tibetan origin (see §4).

(12) Voicing of voiceless aspirated stops and affricates after nasal prefixes is one of the characteristic features of Báimă, as outlined by Zhāng (1997: 133-137), which is however attributable only to a small portion of the Báimă lexicon. In general, WT initials with the *m-* and *-* prefixes can be treated in Báimă as (1) prenasalized voiced stops and affricates, (2) non-

prenasalized voiced stops and affricates (3) voiceless aspirated stops and affricates. Alternatively, words without the nasal prefixes *m-* and *-* in WT are sometimes pre-nasalized in Báimă.

In my analysis, with respect to verbs, the so-called voicing of voiceless aspirated stops and affricates after nasal prefixes is a retention of the general morphological process described for Tibeto-Burman by Benedict (1972: 124), viz. alternation of the root initial, with a contrast between intransitives with sonorant initials and transitives with surd initials. Similar to Tibetan, Báimă appears to have secondarily made use of this initial alternation as a time index. As is the case in Tibeto-Burman, there is no invariable relation between root initial and verbal function in Báimă: certain roots show the alternation, while others do not, e.g. verbs *‘thung* [ndu<sup>53</sup>] ‘drink’ and *‘cha* [ndʒa<sup>53</sup>] ‘eat’.<sup>7</sup>

The Báimă verbal paradigm system is reminiscent of the original WT system as suggested by Francke and Simon (Jäschke 1929: 144) with a distinction between present and future, hereafter imperfective (intransitive or durative) and perfects and imperatives (transitive or active). This division, both in WT and Báimă, is further accentuated by the use of the negative particles, *mi* with the imperfective verb form and *ma* with the perfective/imperative. Most Báimă verbs have two stems, the imperfective, marked by prenasalization and mostly the high falling tone, and the perfective/imperative, marked by the high rising tone, as exemplified in Table 2:

**Table 2—Examples of Báimă verbs with two stems**

Báimă		Written Tibetan				Meaning
IPF	PF/IMP	PR	FUT	PF	IMP	
(s <sup>h</sup> ue <sup>53</sup> )ndy <sup>53</sup>	(s <sup>h</sup> ue <sup>53</sup> )tø <sup>13</sup>	so-?	so-?	so-?	so-?	‘bite’
nda <sup>53</sup>	ta <sup>53</sup>	‘dogs	gdag(s)	btags	thogs	‘tie, fasten’
nda <sup>53</sup>	ta <sup>35</sup>	‘thag	btag	btags	thog	‘weave, knit’
ndu <sup>53</sup>	tu <sup>53</sup>	‘thor	gtor	btor	‘thor	‘scatter, sprinkle, spread’
ndzu <sup>35</sup>	tsu <sup>35</sup>	‘tshong	btson	btsongs	tshong	‘sell’
ndzu <sup>53</sup>	tsu <sup>35</sup>	‘tshod	btso	btso	tshod	‘cook in boiling water’
ndzø <sup>53</sup>	ʂø <sup>53</sup>	‘chi		shi		‘die’
ja <sup>35</sup> ndzu <sup>13</sup>	ja <sup>35</sup> tʃu <sup>13</sup>	?	?	?	?	‘give’

The imperfective form of Báimă verbs is frequently preceded by the intransitive/durative *N-* prefix, even when the cognate WT form is not, e.g. WT *zla*, Báimă [ndzø<sup>53</sup>] ‘say, speak’.

Therefore, I analyze the so-called voicing of voiceless aspirated stops and affricates in Báimă as a retention of the old verb paradigm system with variation in the voicing of the root-initial consonant.

<sup>7</sup> Sun (2003a: 834) notes that the WT verb *‘cha* ‘gnaw’ is attested in the meaning ‘eat’ in many dialects of the area, including Zhongu, Chos-rje and Zhānglà (ICang-la).

In addition, some Báimă verbs have only one stem, e.g. ‘hear’ [nd<sup>35</sup>t<sup>h</sup>ø<sup>35</sup>], [jɛ<sup>35</sup>] ‘sleep’, [ɲi<sup>53</sup>ndu<sup>13</sup>] ‘see’. A total of five verbs in my wordlist of approximately 4,000 Báimă words have three stems, mostly in suppletive distribution, e.g. [ndʒi<sup>53</sup>] ‘go’ and [wu<sup>53</sup>] ‘come’. Some of the suppletive forms exhibit sound changes distinct from those found in basic vocabulary. For instance, the imperative form of the verb ‘come’ is [ʃue<sup>53</sup>], cognate with WT *shog*. The expected form, based on the sound correspondences for basic vocabulary, would be \*[ʃ<sup>h</sup>ue<sup>53</sup>]. The irregular suppletive forms are thus arguably of later origin.

Table 3 lists Báimă initials in basic vocabulary and their WT origins. C stands for a prefix. When enclosed in brackets, (C), it indicates that the sound correspondence applies irrespective of the presence or absence of a prefix in WT.

**Table 3—Báimă initials and their WT origins (basic lexicon)**

Báimă	WT initial	Exceptions
g	Cg	
k	(C)k, g	
k <sup>h</sup>	(C)kh	
d	Cd	
t	(C)t, d	
t <sup>h</sup>	(C)th	
p	(C)p, b	
p <sup>h</sup>	(C)ph	
ŋ	(C)ng	
m	(C)m + low back vowel	negator [mø <sup>13</sup> ] <i>mi</i>
n	(C)n + low back vowel	
ɲ	(C)ny, n/m + non-low front vowel	
z	s, (C)z	
s	Cs	
s <sup>h</sup>	s	[su <sup>53</sup> ] <i>su</i> ‘who’
ɸ	labial + y	
ʒ	j, zh	
tɕ <sup>(h)</sup>	(aspirated) velar + y, (aspirated) velar + r	
ʒ̥	st	
ʃ	Csh, spr	
ʃ <sup>h</sup>	sh	[ʃø <sup>35</sup> ] <i>shig</i> ‘louse’; [ʃø <sup>53</sup> ] <i>shi</i> ‘die’; [ʃue <sup>53</sup> ] <i>shog</i> ‘come’ (IMP)
dz	zl	
ts	(C)ts	
dʒ	lj	
tʃ	(C)c	

tʰ	ch	[tɕʰɛ³⁵] <i>chas</i> ‘go’
tɕ	dental/labial + r	
ɣ	rw	
r	r	
j	l	?[lyɛ¹³lyɛ³⁵] <i>log-log</i> ‘round’
w	‘, p/b (in suffixes)	
nd	mth, ‘th, ‘d	
nb	‘ph, ‘b	
ndz	‘khy, ‘gr	
ndz	mtsh	
ndʒ	mch, ‘ch	[ndʒi⁵³] <i>mchi</i> ‘walk, go’

Overall, correspondences between Báimă and WT initials are regular, mostly with one initial in WT corresponding to one initial in Báimă.

## 2.2. Báimă rhymes

All WT original codas are lost in Báimă, transforming closed syllables into open syllables. There is not even a glottal stop, and there are few nasalized vowels in Báimă at large, two features typical for Khams (Gésāng 2001: 76-78). This simplification of rhymes in Báimă is reminiscent of the process in Zhongu (Sun 2003a: 790-792) and Chos-rje (Sun 2003b), the vowel inventory of Báimă, however, being distinct from that in Zhongu and Chos-rje.

As compared to WT, the vowel inventory of Báimă is considerably expanded, having some innovative vowels, such as [ɛ] or [ɔ]. The changes attested in the basic vocabulary are summarized in Table 4. WT rhymes are ordered by frequency of occurrence in the sample, and the most frequent WT correspondences are in bold print.

**Table 4—Báimă rhymes and their WT origins (basic lexicon)**

Báimă	WT Rhymes
a	<b>a, ar</b>
ɑ	<b>ag(s), a, ang</b>
e	<b>ing, ad</b> , as, en, ems, es, i, in, ongs
ø	<b>os, as, od</b>
ɛ	<b>e, a, i, al, an, as, er</b>
ə	<b>i, ig, a, abs, er, in</b>
i	<b>i, is, ig</b>
y	ug
o	a
ɔ	<b>ang, am, o</b>
u	<b>u, ong, ung, ab, ug, ur</b>
ʉ	<b>o, i</b>
uə	<b>o, os, u</b>

ue	og
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Overall, Báimă-WT rhyme correspondences are significantly more complex than those for initials. The most regular correspondence in basic vocabulary—and at the same time one of the idiosyncratic features of Báimă—is the consistent treatment of WT *o* as [ue], a total of three examples in the 100-list, i.e. WT *mgo* ‘head’ > Báimă [ngue<sup>53</sup>], WT *rdo* ‘stone’ > Báimă [duē<sup>53</sup>] and WT *so* ‘tooth’ > Báimă [s<sup>h</sup>ue<sup>53</sup>]. To compare, WT *o* corresponds to /o/ in Zhongu (Sun 2003a: 790). WT *o* and Báimă [ue] are probably independent developments from the parent speech. As argued by Gong (1995: 46), WT *o* is a secondary development, merging Proto-Sino-Tibetan \*/wə/, \*/wa/, \*/ua/ and \*/aw/. For example, the reconstructed form for ‘head’, WT *mgo* and Báimă [ngue<sup>53</sup>], is \**m-gaw*~(*s*)*gaw* (Benedict 1972: 149), that for ‘tooth’, *so* and [s<sup>h</sup>ue<sup>53</sup>], is \**swa* (ibid., p. 106).

As for other WT simple rhymes, viz. *a*, *i*, *e* and *u*, each corresponds to more than one rhyme in Báimă. For example, WT *a* corresponds to [a], [ɑ], [ɛ], [ə] and [o]. It is not possible to establish the relative chronology of layers in such a restricted sample. However, in the case of WT *a*, based on a larger vocabulary across other varieties of Báimă, where WT *a* most frequently corresponds to [ɛ], it is possibly [ɛ], cf. WT *kha* ‘mouth’ is [k<sup>h</sup>a<sup>53</sup>] in the Báimă Township and [k<sup>h</sup>ɛ<sup>53</sup>] in Jiǔzhàigōu County. In the Báimă variety of Píngwǔ, some words exist in two variants with WT corresponding in one case to [a] and in the other to [ɛ], e.g. [tɕa<sup>53</sup>] and [tɕɛ<sup>53</sup>] ‘hair’, WT *skra*. The word ‘fish’, WT *nya*, is predominantly [ɲɛ<sup>53</sup>], but also sporadically [ɲa<sup>53</sup>]. The distinction between [a] and [ɑ], e.g. the minimal pair [ta<sup>53</sup>], WT *rta*, ‘horse’ vs. [tɑ<sup>53</sup>], WT *stag*, ‘tiger’, is proper for Khams (Gésāng 2002: 106).

Two tendencies in the development from WT rhymes to Báimă are of particular importance: syllable boundary shifting and contraction, both common in many Tibetan dialects.

The syllable boundary readjustment rule [VC \$ CV > V \$ CCV], as described by Sun (2003a: 794), is applied with great frequency in Zhongu polysyllabic words, making the original coda part of the following onset. Similar examples in Báimă are [mo<sup>13</sup>ruē<sup>53</sup>] \**dma-rpo* (most likely *-rwo* > [ruē], see below) ‘red’; [ka<sup>53</sup>nbu<sup>53</sup>] ‘dry’, WT \**ka-nbo*; [ndʒu<sup>13</sup>nba<sup>35</sup>] ‘liver’, WT \**mchi-npa*.

Judging by examples of contractions of WT disyllabic words involving WT nominal suffixes *-ma*, *-pa* and *-wa* (WT *-ba*) (Huáng & Zhāng 1995: 102-103, Zhāng 1997: 149-150), which gave rise to two diphthongs, [ue<sup>35</sup>] and [ye<sup>35</sup>], in Báimă, the Báimă underlying form

corresponding to WT *-ma*, *-pa* and *-wa* (WT *-ba*) is in most cases [wɛ]. In a similar fashion, the Báimǎ suffix corresponding to WT suffixes *-mo* (also *-ma*), *-po* and *-wo* (WT *-bo*) is [wo], which resulted in some cases in words ending in [ɔ<sup>35</sup>]. Examples of such contractions in the 100-word list are given in Table 5:

**Table 5—Contraction of disyllabic words in Báimǎ**

WT	Báimǎ	Meaning
pho-ba	p <sup>h</sup> ɛ <sup>13</sup>	belly, stomach
bya-sgo-nga	ɕa <sup>53</sup> gɛ <sup>35</sup>	egg
rnga-ma	ŋɛ <sup>35</sup>	tail
nyi-ma	ɲɛ <sup>35</sup>	sun
du-ba	tue <sup>35</sup>	smoke
bye-ma	ɕɔ <sup>35</sup>	sand

Contractions are in most cases characterized by the high rising tone. One exception in the words examined is [p<sup>h</sup>ɛ<sup>13</sup>] ‘belly, stomach’. There is considerable tone fluctuation between different varieties of Báimǎ, even within the Báimǎ Township. For example, the word ‘I’ exists in two variants, [ŋɔ<sup>35</sup>] and [ŋɔ<sup>53</sup>]. Tones are probably a later feature in Báimǎ or they may have been re-arranged at a later stage, for which reasons they are not treated in detail in this overview. Note also that Zhongu (Sōngpān) is not tonal and Chos-rje is at the initial stages of tonogenesis (Sun 2003b: 5).

In sum, based on WT-Báimǎ sound correspondences in initials and finals, Báimǎ cannot be subgrouped together with any other Tibetan dialect exclusively. It appears to combine Amdo-, Khams- and Zhongu-like characteristics, sometimes uniting features of different distinct dialects in one word. For example, the Báimǎ word [tɕ<sup>h</sup>ɑ<sup>53</sup>], WT *khrag*, ‘blood’ combines the Amdo-like initial [tɕ<sup>h</sup>] with the Khams-like final with the eliminated coda, [ɑ<sup>53</sup>].

As evidenced by doublets, Báimǎ is likely to have been in close contact with Amdo and Khams in different periods of its history. For example, the first member of the doublet [mo<sup>13</sup>ruɛ<sup>53</sup>] ‘red’ exhibits syllable boundary shifting typical for Amdo, viz. \**dma-rpo*, cf. bLa-brang [hma ro]; the second member of the pair, [mɑ<sup>53</sup>], is unmistakably Khams, cf. ’Ba’-thang [mɑ<sup>55</sup>mɑ<sup>55</sup>] (Dài & Huáng 1992: 336). Yet most doublets show an etymologically non-Tibetan form in alternation with a Tibetan one, e.g. ‘big’: [luɛ<sup>53</sup>tue<sup>53</sup>] and [t<sup>h</sup>ɛ<sup>53</sup>], WT *chen-po*.

The development of Báimǎ is obviously conditioned by language contact. For centuries, the Tibetans, probably from different groups, as argued above, continuously exercised influence on Báimǎ religion and culture, which subsequently led to multiple re-borrowings of words from

Tibetan to Báimǎ. As Larry Trask (2000: 46-47) argues for Basque, in circumstances of prolonged contact, the borrowing of a word need not be a once-and-for-all-time event and instead of re-borrowing it is more appropriate to speak of the reshaping of words under the continuous influence of a contact language: “Basque has been in intense contact with Latin and its Romance descendents for over 2000 years, and we should not be surprised that Basque-speakers have seen fit to keep adjusting their own speech toward the always changing, but always more prestigious, speech of their neighbours.” The same is undoubtedly true for Báimǎ: as evidenced from its basic vocabulary, the reshaping of loan words has also been a pervasive process in its history.

### 3. Words of unclear etymology

Báimǎ words of unclear etymology exhibit features dissimilar to those of Tibetan origin, such as the presence of *l* in the system of initials, e.g. [luɛ<sup>53</sup>tue<sup>53</sup>] ‘big’, and collocation of stops with non-low front vowels not resulting in palatalization, e.g. [ne<sup>13</sup>ne<sup>35</sup>] ‘breast, milk’. In this section, I speculate on possible etymologies of some words of unclear origin and discuss some Tibetan cognates suggested by Zhāng (1994) and Huáng & Zhāng (1995). This section is organized in the order of the appearance of these words in the appendix.

(1) The Báimǎ plural suffix [ku<sup>53</sup>], as in [tɕ<sup>h</sup>ø<sup>13</sup>ku<sup>53</sup>] ‘you’, is similar to that in Guìqióng and Nàxī (Huáng & Zhāng 1995: 106). For example, Guìqióng, a Qiangic language in south-western Sìchuān, marks “collective plural” by the suffix [ku<sup>55</sup>] (Sūn 1983: 117), e.g. plural exclusive first person pronoun [ŋɔ<sup>33</sup>ku<sup>55</sup>], plural inclusive first person pronoun [dʒu<sup>55</sup>ku<sup>55</sup>], plural second person pronoun [nũ<sup>33</sup>ku<sup>55</sup>] and plural third person pronoun [to<sup>33</sup>ku<sup>55</sup>].

A possible cognate of the plural suffix [ku<sup>53</sup>], as well as the plural suffix in Guìqióng is the WT form *kun* ‘all, every, each, whole’. It is for instance used to form the plural form of nouns ending in a consonant in Balti, e.g. *snot-kun* ‘vessels, pots’, *nang-kun* ‘houses’ (Read 1934: 5). The form *kun* is therefore likely to be an archaism preserved in the peripheral languages (cf. Campbell 2000: 11-12).

(2) The Báimǎ plural inclusive first person pronoun [a<sup>13</sup>re<sup>13</sup>ku<sup>53</sup>] is similar to Zhongu [a-ɛa] and appears to be cognate with some Qiangic languages, e.g. the exclusive first person pronoun in Prinmi [a<sup>35</sup>rə<sup>53</sup>] and Ěrsū [ɑ<sup>55</sup>rɪ<sup>55</sup>] (Zàng-Miányǔ yǔyīn hé cǐhuì biānxiézǔ 1991: 1345).<sup>8</sup>

<sup>8</sup> Data from Qiangic languages in this section, unless otherwise specified, are quoted from Dài & Huáng (1992).

(3) The adjective [çi<sup>53</sup>çi<sup>53</sup>] ‘small’ is distinctly Qiangic, cf. [çi] ‘small’ in the Rónghóng dialect of Qiāng (Randy LaPolla, personal communication, March 2005), Zhābà [jɿ<sup>33</sup>jɿ<sup>55</sup>] ‘small’, Lǔsū [ji<sup>33</sup>ji<sup>53</sup>] ‘small’.

Huáng & Zhāng (1995: 94) suggest WT *zhib-zhib* ‘crumb, powder, fine like powder, refined flower’ as the etymon of Báimǎ [çi<sup>53</sup>çi<sup>53</sup>]. Different semantics apart, *zhib-zhib* would not be regular by their own sound correspondences, according to which the expected form would be \*[ʂə<sup>53</sup>ʂə<sup>53</sup>]; compare *skrang-zhi* > [çɔ<sup>35</sup>ʂə<sup>53</sup>] ‘dissolve (of a swelling)’ (ibid., p. 90).

(4) The adjective [luə<sup>53</sup>tuə<sup>53</sup>] ‘big’ might likewise be related to Qiangic, cf. Shǐxīng [mɜ<sup>33</sup>duɜ<sup>53</sup>], also [la<sup>55</sup>duɜ<sup>53</sup>] (Dài et al. 1991: 193).

Note that [luə<sup>53</sup>tuə<sup>53</sup>] ‘big’ and [çi<sup>53</sup>çi<sup>53</sup>] ‘small’ are more frequent and productive in word formation than their obvious Tibetan-derived synonyms [tʃ<sup>h</sup>e<sup>53</sup>], *chen-po*, and [tʃ<sup>h</sup>u<sup>13</sup>tʃ<sup>h</sup>u<sup>35</sup>], *chung-chung*, respectively.

(5) For the word [liə<sup>53</sup>kə<sup>53</sup>] ‘all’, Zhāng (1994b: 67) suggests WT *lings-ka* ‘entire(ly), complete(ly)’ as a probable cognate. However, again it would not fit the sound correspondences for the basic lexicon, the expected form being \*[je<sup>35</sup>ke<sup>53</sup>]. The form [ts<sup>h</sup>ɔ<sup>13</sup>pɛ<sup>53</sup>] attested in Mǎjiā Township, Jiǔzhàigōu County, on the other hand, is a regular reflexion of WT *tshang-ma*, cf. Zhongu [ts<sup>h</sup>ɔ-mo], sDe-dge [ts<sup>h</sup>ɑŋ<sup>55</sup>ma<sup>53</sup>].

(6) The distal pronoun [wu<sup>13</sup>le<sup>53</sup>], also used anaphorically as singular third person pronoun, is semantically analyzable into the element [wu<sup>13</sup>] ‘that’, as in [wu<sup>13</sup>la<sup>53</sup>] ‘there’, literally ‘that location’; and [le<sup>53</sup>] ‘that one’, also used as the third person pronoun. The first element is in most likelihood related to one of the corner pieces of the Tibeto-Burman deictic triangle *\*i~\*u~\*a*, as discussed in Benedict (1983).

(7) The adjective [nɛ<sup>13</sup>wu<sup>53</sup>] ‘black’ is again probably of Qiangic origin, cf. Prinmi [nɑ<sup>13</sup>], Quèyù [nɛ<sup>55</sup>nɛ<sup>33</sup>], Dào fú [nɑ nɑ]. The Tibetan-derived synonym [nɑ<sup>53</sup>], *nag-po*, derives from Khams, cf. sDe-dge [nɑ<sup>55</sup>nɑ<sup>ʔ53</sup>], and occurs in Báimǎ only in set expressions, such as [nɑ<sup>13</sup>wu<sup>53</sup>~nɑ<sup>13</sup>pu<sup>53</sup>] ‘darkness’ and [ni<sup>13</sup>nɑ<sup>53</sup>] ‘very black eyes’.

(8) The noun [ne<sup>13</sup>ne<sup>35</sup>] ‘breast, milk’ also has cognates in Qiangic languages, cf. Zhābà [nə<sup>55</sup>nə<sup>55</sup>].

(9) The noun [dzə<sup>13</sup>ngue<sup>53</sup>] ‘knee’ might be related to Amdo, [wi ŋgo], but is not paralleled in other dialects. The WT etymon *pus-mo* is to be found in Báimǎ in an arguably later loan, [pɔ<sup>53</sup>mɔ<sup>53</sup>ndzu<sup>53</sup>] ‘kneel’, WT *pus-mo ndzugs*.

(10) For [ndzɑ<sup>35</sup>] ‘good’, Zhāng (1994b: 61) suggests the etymon *drag* ‘noble, honest, best, superior’, which is however expected to yield the form \*[tʂɑ]. Both words may indeed be related, but in Báimǎ, this adjectival verb is marked by the prefix *n-* as intransitive or durative.

Finally, the adjective [lyɛ<sup>13</sup>lyɛ<sup>35</sup>] ‘round’ is described by Zhāng (1994b: 62) as being related to WT *log-log*. Alternative possible cognates in Qiangic languages are Guìqióng [lɔ<sup>33</sup>lɔ<sup>55</sup>] or Ěrsū [pu<sup>55</sup>li<sup>55</sup>li<sup>55</sup>] (Zàng-Miányǔ yǔyīn hé cihuì biānxiézǔ 1991: 1179).

The origin of words not discussed in this section (singular first person pronoun [k<sup>h</sup>a<sup>21</sup>gu<sup>341</sup>] (not attested in my data, quoted from Huáng & Zhāng 1995: 106), different forms of the plural first person pronoun, [ja<sup>35</sup>ndzu<sup>53</sup>~ja<sup>35</sup>tʃu<sup>53</sup>] ‘give’, [tɕ<sup>h</sup>ɛ<sup>35</sup>] ‘smoke’, [wa<sup>13</sup>tʃa<sup>53</sup>] ‘claw’, [gɛ<sup>53</sup>] ‘horn’) as well as the origin of the words with partial cognation (e.g. [s<sup>h</sup>ue<sup>53</sup>ndy<sup>53</sup>~s<sup>h</sup>ue<sup>53</sup>tɕ<sup>13</sup>] ‘bite’ and [s<sup>h</sup>a<sup>13</sup>ŋə<sup>35</sup>] ‘seed’) remains unclear.

#### 4. Conclusion

The 100-word list of Báimǎ basic vocabulary consists of 84% of words of Tibetan origin and of 15% of words of unclear origin (one word is a loan from Chinese). Sound correspondences in basic vocabulary are mostly regular for initials (with some Amdo characteristics, such as the treatment of WT velar stops followed by the medials *-y-* and *-r-* as alveolo-palatals) and highly irregular for finals. This evidences re-shaping of these words throughout Báimǎ history under continuous influence of various Tibetan dialects. Báimǎ retains some archaisms in its lexicon, e.g. plural suffix [ku<sup>53</sup>], probably from WT *kun*, and old Tibetan verb paradigms. In addition, some correspondences between Báimǎ and WT, such as Báimǎ [uɐ] vs. WT *o*, can better be explained at the proto-Tibetan level. In sum, Báimǎ diverges significantly in lexicon and phonology from the established groups of Tibetan dialects.

Báimǎ words of unclear origin are mainly Qiangic and might be a retention from the language originally spoken by the Báimǎ before their shift to a form of Tibetan in the 7th century. Given that the majority of Báimǎ basic vocabulary is of Tibetan origin, Báimǎ should be regarded as a Tibetan dialect, whose development has however been considerably conditioned by language contact. Like its immediate neighbours, Zhongu and Chos-rje, Báimǎ is highly dissimilar to other Modern Tibetan dialects and should therefore also be seen as a dialect-isolate, to be placed under Old Tibetan as one of its first-order offshoots.

### **Appendix: Báimǎ 100-word list of basic vocabulary compared to WT, Zhongu, sDe-dge and bLa-brang**

WT words are listed in the order of the Tibetan alphabet. A tilde ~ between forms means that they are different pronunciations of the same form. Forms of one word are separated by a comma; different words are separated by a semicolon.

Highlighted are words with unidentified etymology. When Báimǎ or Zhongu have WT cognates distinct from those in sDe-dge or bLa-brang, the appropriate cognate is given in angular brackets next to the word in question. Words in round brackets are drawn from varieties of Báimǎ other than that of the Báimǎ Township.

If a word is a doublet, the most frequently used member of the pair is indicated first, the less used member second. The frequency is determined on the basis of my corpus of Báimǎ stories collected in 2003-2004.

When a word from either sDe-dge or bLa-brang is not attested in *Zàng-Miányǔ yǔyīn hé cíhuì biānxiézǔ* (1991) or *Dài & Huáng* (1992), this fact is marked in the Table as NA (Not-Attested).

**Báimă 100-word list of basic vocabulary compared to WT, Zhongu, sDe-dge and bLa-brang**

WT	Meaning	Báimă	Zhongu	sDe-dge	bLa-brang
dkar-po	white	ko <sup>53</sup> ru <sup>53</sup> ; ka <sup>53</sup> (in set expressions)	ke-rə	ka <sup>55</sup> ka <sup>55</sup>	ka ro
rkang-pa	foot	kə <sup>55</sup> -kə <sup>13</sup> wa <sup>53</sup>	<sup>h</sup> kə	kuŋ <sup>55</sup> ba <sup>53</sup>	hkaŋ wa
skam-po	dry	ka <sup>53</sup> nbu <sup>53</sup>	<sup>h</sup> kə- <sup>n</sup> bo	kaŋ <sup>55</sup> bo <sup>53</sup>	hka mbo
skar-ma	star	ka <sup>53</sup> ma <sup>53</sup> (JZG ke <sup>53</sup> me <sup>53</sup> )	<sup>h</sup> kə-me	ka <sup>55</sup> ma <sup>53</sup>	hkar ma
ske	neck	ke <sup>13</sup> du <sup>35</sup>	q <sup>h</sup> e-tʂə	ke <sup>53</sup>	hke tə
skye-dman	woman	mo <sup>13</sup> ra <sup>53</sup> <ma-rabs>	mə-ri	na <sup>13</sup> mo <sup>53</sup>	?a ji tcho
skra	hair	tca <sup>53</sup> -tce <sup>53</sup> (WX tce <sup>53</sup> )	<sup>h</sup> tʃe- <sup>h</sup> pə	tʂa <sup>53</sup>	htca
kha	mouth	k <sup>h</sup> a <sup>53</sup> (JZG k <sup>h</sup> e <sup>53</sup> )	k <sup>h</sup> ə	kha <sup>53</sup>	kha
khyi	dog	tə <sup>h</sup> i <sup>53</sup> (JZG ts <sup>h</sup> a <sup>53</sup> )	ts <sup>h</sup> ə-ŋe	tchi <sup>53</sup>	tchə yə
khyo-ka	man	pu <sup>53</sup> za <sup>53</sup> <bu sar>	zə-ri	ce <sup>55</sup> pa <sup>53</sup>	çələ tcho
S: khyod; P: khyod tsho	you	tə <sup>h</sup> ə <sup>53</sup> ; tə <sup>h</sup> ə <sup>13</sup> ku <sup>53</sup>	ts <sup>h</sup> o; ts <sup>h</sup> o- <sup>h</sup> a	təhə <sup>53</sup> ; təhə <sup>53</sup> ri <sup>53</sup> naŋ <sup>13</sup>	tcho; tchə tcho
khrag	blood	tə <sup>h</sup> a <sup>53</sup>	tʃ <sup>h</sup> a	tʂaŋ <sup>53</sup>	tchaʒ
gang	full	kə <sup>53</sup>	kə	gaŋ <sup>13</sup>	kaŋ wo
go; tshor	hear	na <sup>35</sup> tə <sup>35</sup> <rma-thos-pa>	ts <sup>h</sup> o	NA	ko
grang-mo	cold	ndza <sup>341</sup> -ndza <sup>13</sup> pu <sup>53</sup> <'khyags>	<sup>n</sup> ts'a	tchoŋ <sup>53</sup>	tcaŋ; tchaʒ kwa
grod-pa	belly	p <sup>h</sup> e <sup>13</sup> <pho-ba>	p <sup>h</sup> u	tʂə <sup>13</sup> pa <sup>53</sup>	ho
mgo	head	ngu <sup>53</sup>	<sup>n</sup> go-tʂə	ngo <sup>31</sup>	ngo tə
'gro, PF/IMP: song	walk, go	IPF: ndzi <sup>53</sup> <mchi>, PF: tce <sup>h</sup> e <sup>35</sup> <chas>, IMP: s <sup>h</sup> u <sup>35</sup> <song>; ndzo <sup>341</sup>	<sup>n</sup> dzo, PF: t <sup>h</sup> e <thal>, IMP: su	ndzo <sup>13</sup>	ndzo
(so-)rgyag	bite	IPF: s <sup>h</sup> ue <sup>53</sup> ndy <sup>53</sup> , PF/IMP: s <sup>h</sup> ue <sup>53</sup> tə <sup>13</sup>	so-qo tsə	ndze <sup>31</sup>	sho ndep
sgo-nga	egg	ca <sup>53</sup> gue <sup>35</sup> <bya-sgo-nga>	go-ŋe	go <sup>13</sup> ŋa <sup>53</sup>	goŋ ŋa
sgor-sgor	round	lye <sup>13</sup> lye <sup>35</sup> <?log-log>	ʁo-ʁo	ru <sup>13</sup> lo <sup>53</sup> <ril-ril>	hkor hko
sgro	feather	pu <sup>53</sup> <spu>	tʃə- dzu <bya- sgro>	dzo <sup>31</sup>	dzo
nga	I, me	ŋa <sup>35</sup> -ŋa <sup>53</sup> ; kha <sup>31</sup> gu <sup>341</sup>	ŋe	ŋa <sup>13</sup>	ŋa
INC: nga-rang-tsho EXC: nga-tsho	we	ze <sup>13</sup> ku <sup>53</sup> -jy <sup>13</sup> ku <sup>53</sup> ; a <sup>13</sup> re <sup>13</sup> ku <sup>53</sup> ŋe <sup>13</sup> ku <sup>53</sup> -jy <sup>13</sup> ku <sup>53</sup> ; k <sup>h</sup> e <sup>13</sup> ku <sup>53</sup>	a- <sup>h</sup> a ŋə- <sup>h</sup> a	ŋe <sup>31</sup> ri <sup>53</sup> naŋ <sup>13</sup> ŋa <sup>13</sup> ri <sup>53</sup> naŋ <sup>13</sup>	?o zo ?o tcho
rnga-ma	tail	ŋue <sup>35</sup>	ŋa	ŋa <sup>55</sup> ma <sup>53</sup>	hŋa ma
gcig	one	tʃə <sup>53</sup>	ʒtsə	tci <sup>53</sup>	htçəʒ
lce	tongue	dza <sup>53</sup> <ljags>	ʃe	tce <sup>53</sup>	htçe
char-pa	rain	no <sup>35</sup> nbu <sup>53</sup> <nam-'bab>; tʃ <sup>h</sup> a <sup>13</sup> pa <sup>53</sup>	ʎo; tʃ <sup>h</sup> ə	tcha <sup>53</sup> ba <sup>53</sup>	tchar wa
chi	what	tʃ <sup>h</sup> ə <sup>53</sup>	tʃ <sup>h</sup> ə(-tsə)	tci <sup>53</sup>	tchə zəʒ
chu	water	tʃ <sup>h</sup> u <sup>53</sup> -tʃ <sup>h</sup> u <sup>13</sup> ndza <sup>35</sup> <chu-'khyags>	tʃ <sup>h</sup> ə	tchu <sup>53</sup>	tchə
chu-rkyal	swim	tʃ <sup>h</sup> u <sup>13</sup> ʃu <sup>53</sup>	tʃ <sup>h</sup> ə- <sup>h</sup> tse tsə	NA	tchə ça htaʒ
chung	small	ci <sup>53</sup> ci <sup>53</sup> ; tʃ <sup>h</sup> u <sup>13</sup> tʃ <sup>h</sup> u <sup>53</sup>	tʃ <sup>h</sup> ə-tʃ <sup>h</sup> u	tchuŋ <sup>53</sup> tchuŋ <sup>53</sup>	tchoŋ wo
chen-po	big	lu <sup>53</sup> tue <sup>53</sup> ; tʃ <sup>h</sup> e <sup>53</sup>	<sup>h</sup> tʃe-te	tche <sup>53</sup> bo <sup>53</sup>	tche wo
mchin-pa	liver	ndzu <sup>13</sup> nba <sup>35</sup>	tʃ <sup>h</sup> ə- <sup>n</sup> bə	tchin <sup>55</sup> ba <sup>53</sup>	tchə mba
'chi, PF/IMP: shi	die	IPF: ndzo <sup>13</sup> sə <sup>53</sup> , PF/IMP: ʂə <sup>53</sup>	ʂə	xhe <sup>53</sup>	xhə
ljang-khu	green	dzo <sup>13</sup> sə <sup>53</sup>	dzo- <sup>n</sup> gə	ndzuŋ <sup>13</sup> khu <sup>53</sup>	dzaŋ khə
nya	fish	ŋe <sup>53</sup>	ŋe	na <sup>13</sup>	na
nyal, IMP: nyol	lie, sleep	ŋe <sup>35</sup>	ŋi	ne <sup>13</sup>	na
nyi-ma	sun	ŋye <sup>35</sup>	ŋə-wa	ni <sup>13</sup> ma <sup>53</sup>	nə ma
gnyis	two	ŋi <sup>341</sup>	ʎə	ni <sup>55</sup>	hni
snying	heart	s <sup>h</sup> e <sup>13</sup> <sems>	se	nin <sup>55</sup>	hnaŋ
ster, PF/FUT: bster; sbyin, PF/IMP: byin	give	zə <sup>341</sup> ; ce <sup>53</sup> ; IPF: ja <sup>35</sup> ndzu <sup>53</sup> , PF/IMP: ja <sup>35</sup> tʃu <sup>53</sup>	zə, PF: tsi, IMP: tsu	jin <sup>55</sup>	hter
tshang-ma	all	li <sup>53</sup> ka <sup>53</sup> (MJ ts <sup>h</sup> ə <sup>13</sup> pe <sup>53</sup> )	ts <sup>h</sup> ə-mo	tshaŋ <sup>55</sup> ma <sup>53</sup>	loʒ loʒ ʁa
thal-ba	ashes	t <sup>h</sup> ie <sup>35</sup> -t <sup>h</sup> e <sup>35</sup>	ko-ti	ko <sup>13</sup> the <sup>53</sup>	NA
(mig-)mthong	see	ŋi <sup>53</sup> ndu <sup>13</sup>	<sup>n</sup> h <sup>h</sup> u	ri <sup>31</sup>	rəʒ
'thung, PF: 'thungs	drink	ndu <sup>35</sup>	<sup>n</sup> h <sup>h</sup> u, PF/IMP: <sup>n</sup> t <sup>h</sup> i	thuŋ <sup>53</sup>	thoŋ
de	that	wu <sup>13</sup> le <sup>53</sup> ; te <sup>53</sup>	te	phen <sup>55</sup> de <sup>53</sup>	kan

du-ba	smoke	tue <sup>35</sup> ; tɕ <sup>h</sup> e <sup>35</sup>	tu	to <sup>13</sup>	to
sder-mo	claw	wa <sup>13</sup> tʃa <sup>53</sup>	bɛ-rɛ	she <sup>55</sup> mo <sup>53</sup>	der mo
sdod, PF/FUT: bsdad	sit, live	IPF: ndy <sup>53</sup> <'dug>; PF/IMP: de <sup>53</sup>	<sup>n</sup> də, PF: de, IMP: di	ndu <sup>ʔ31</sup>	htsoʃ; ndəʃ
dro-po	hot, warm	tʃur <sup>35</sup> ~tʃur <sup>13</sup> nbur <sup>53</sup>	tʃo- <sup>n</sup> bo	tʃo <sup>31</sup> po <sup>53</sup>	tʃo mbo
'di	this	nde <sup>53</sup>	<sup>n</sup> de	ʔin <sup>55</sup> de <sup>53</sup>	ndə
rdo	stone	due <sup>53</sup>	do	do <sup>31</sup>	do
nag-po	black	je <sup>13</sup> wu <sup>53</sup> ; na <sup>53</sup> (in set expressions)	na; ne-yə	na <sup>55</sup> na <sup>ʔ53</sup>	naʃ kwo
nu-ma	breast	ne <sup>13</sup> ne <sup>35</sup>	pa-pa	nu <sup>13</sup> ma <sup>53</sup>	nə ma
rna	ear	na <sup>35</sup>	nɛ-qe	na <sup>55</sup> co <sup>53</sup>	na ndzoʃ
sna(-mgo)	nose	na <sup>35</sup> ngue <sup>53</sup>	nɛ- <sup>n</sup> go	na <sup>53</sup>	hna ɛoŋ
snum	grease, oil	zø <sup>341</sup> (JZG jy <sup>341</sup> )	nu	nuŋ <sup>53</sup>	hji
pus-mo	knee	dzə <sup>13</sup> ngɛ <sup>53</sup>	po-mo	NA	wi ŋgo
sprin	cloud	ʃe <sup>35</sup>	ʃə	tʃin <sup>55</sup>	ʃən
'phur, PF: phur	fly	nbu <sup>341</sup>	<sup>n</sup> p <sup>h</sup> ə, PF/IMP: p <sup>h</sup> ə	phi <sup>53</sup>	phər
bye-ma	sand	ɕɔ <sup>35</sup>	<sup>h</sup> tsa	ɕe <sup>13</sup> ma <sup>53</sup>	ɕe ma
bya	bird	ɕe <sup>13</sup> tʃu <sup>53</sup> <bye-phrug>; ca <sup>53</sup>	tse; tʃi-tʃu	ca <sup>13</sup> di <sup>53</sup>	ɕa
'bar	burn	nba <sup>53</sup>	<sup>n</sup> bɛ	NA	mbar
IPF: mi PF/IMP: ma	not	IPF: mə <sup>13</sup> PF/IMP: ma <sup>13</sup>	je- ma-	ma <sup>13</sup> ma <sup>13</sup>	NA
mang-po	many	mɔ <sup>13</sup> wu <sup>53</sup> ~ma <sup>13</sup> ke <sup>35</sup> 9	mɔ(-wu)	muŋ <sup>13</sup> bo <sup>53</sup>	maŋ
mi	person	je <sup>53</sup> (JZG ŋə <sup>53</sup> )	je	ni <sup>53</sup>	nə
mig	eye	ji <sup>13</sup> ndze <sup>35</sup> <mig-'bras>	je-tsa	ni <sup>ʔ53</sup>	hnəʃ
ming	name	je <sup>13</sup> je <sup>35</sup>	ji	nin <sup>55</sup>	naŋ
me	fire	je <sup>53</sup>	je	ne <sup>53</sup>	ne
dmar-po	red	mɔ <sup>13</sup> ruɛ <sup>53</sup> ~me <sup>13</sup> rə <sup>53</sup> , ma <sup>53</sup> (in set expressions)	me-rə	ma <sup>55</sup> bo <sup>53</sup>	hma ro
rtsa-ba	root	zø <sup>13</sup> tsa <sup>53</sup> <zhabtsa> (JZG du <sup>13</sup> tse <sup>53</sup> , tsa <sup>53</sup> pa <sup>53</sup> )	<sup>h</sup> tse- <sup>h</sup> ko	den <sup>55</sup> pa <sup>53</sup>	htsa pa
mtshan-mo	night	ndze <sup>53</sup>	<sup>n</sup> ts <sup>h</sup> ɛ-nɔ	tshen <sup>55</sup> na <sup>ʔ53</sup>	nə mo
za, PF: zos, FUT: bza, IMP: zo	eat	IPF: ndʒa <sup>53</sup> <'cha>, PF: ndʒø <sup>35</sup> <'chas>, ndʒue <sup>53</sup> <'chos>	<sup>n</sup> tʃ <sup>h</sup> ɛ, PF: <sup>n</sup> tʃ <sup>h</sup> i, IMP: <sup>n</sup> tʃ <sup>h</sup> o	sa <sup>13</sup>	sa
zla-ba	moon	dza <sup>13</sup>	dɛ-wɛ; dzɛ	da <sup>13</sup> wa <sup>53</sup>	dza; da wa
zla, PF: bzlas, FUT: bzlo, IMP: zlos; bshad	say, speak	IPF: ndzə <sup>53</sup> , PF: dze <sup>35</sup> , IMP: dzø <sup>35</sup> , ʃe <sup>53</sup> , k <sup>h</sup> a <sup>53</sup> tɕ <sup>h</sup> a <sup>53</sup>	dzo, PF: dze, IMP: dzi	ɕe <sup>ʔ53</sup> <bshad>	nɕal
bzang	good	ndza <sup>35</sup> ; zɔ <sup>13</sup> wu <sup>53</sup>	zɔ~zɛ-ŋɛ; de; ɛ-li	zuŋ <sup>13</sup> bo <sup>53</sup>	a dzo; zaŋ
'ong, PF: 'ongs, IMP: shog	come	IPF: wu <sup>53</sup> , PF: ui <sup>35</sup> we <sup>53</sup> , IMP: ʃue <sup>53</sup>	yu, PF: ye, IMP: xu	ʔoŋ <sup>13</sup>	joŋ
rwa	horn	ge <sup>53</sup> ; ya <sup>13</sup> tsə <sup>53</sup>	ye	tɕhu <sup>53</sup>	ra tɕo
ri	mountain	rə <sup>341</sup>	rə	ri <sup>31</sup>	rə
ring	long	re <sup>35</sup> ~re <sup>13</sup> dza <sup>35</sup> <ring-rgyang>	re(-wu)	rin <sup>13</sup> bo <sup>53</sup>	raŋ wo
rus-pa	bone	ru <sup>53</sup> pa <sup>53</sup>	rə- <sup>h</sup> pɛ	NA	rə pa
lag-pa	hand	ja <sup>35</sup> ~ja <sup>13</sup> wa <sup>53</sup>	la-ʃa	la <sup>13</sup> pa <sup>53</sup>	laʃ kwa
lang	stand	jo <sup>35</sup>	lo	luŋ <sup>13</sup>	laŋ
lam	path	jo <sup>53</sup>	lo	laŋ <sup>13</sup>	lam
lo-ma	leaf	ʃɔ <sup>13</sup> ngue <sup>53</sup> <shon-gu>	nɛ-lo	lo <sup>13</sup> ma <sup>53</sup>	lo ma
sha	flesh	ʃ <sup>h</sup> a <sup>53</sup> ~ɕ <sup>h</sup> a <sup>13</sup> ke <sup>35</sup>	ʃɛ	xha <sup>53</sup>	xha
sha-pags	skin	ʃ <sup>h</sup> a <sup>53</sup> pa <sup>53</sup>	ʃə- <sup>n</sup> ba	pa <sup>55</sup> pa <sup>53</sup> <pags-pa>	htɕə mo
shig	louse	ʃə <sup>35</sup>	ʃə	xhi <sup>ʔ53</sup>	ɕhəʃ
shing	tree, wood	ʃ <sup>h</sup> e <sup>13</sup>	du; ji	ɕhin <sup>55</sup> phu <sup>53</sup> ; ɕhin <sup>55</sup>	doŋ wo

<sup>9</sup> The second form might be related to Central Tibetan [maŋ<sup>13</sup>ko<sup>53</sup>].

shun-pa	bark	ʂ <sup>h</sup> u <sup>13</sup> nba <sup>53</sup>	ku-tʃə	NA	NA
shes	know	ʂ <sup>h</sup> e <sup>13</sup> 10	ʃi	ɕhe <sup>55</sup>	ɕhi
sa	earth	s <sup>h</sup> a <sup>53</sup>	sə	sha <sup>53</sup>	sha
sa-bon	seed	s <sup>h</sup> a <sup>13</sup> ŋə <sup>35</sup>	sə-ye	shen <sup>55</sup>	shə ɛoŋ
ser-po	yellow	s <sup>h</sup> ɛ <sup>13</sup> po <sup>53</sup>	se-rə	she <sup>55</sup> bo <sup>53</sup>	she ro
su	who	su <sup>53</sup> ~sə <sup>53</sup>	sə	shu <sup>53</sup>	shə
so	tooth	s <sup>h</sup> ue <sup>53</sup>	so	sho <sup>53</sup>	sho
gsar-pa	new	sa <sup>53</sup> pa <sup>53</sup>	sə-wa	sa <sup>55</sup> ba <sup>53</sup>	sho ma
gsod, PF/FUT: bsad, IMP: sod	kill	se <sup>53</sup>	ʒse, PF/IMP: se	se <sup>53</sup>	sɛr; ɕa

## Abbreviations

>	indicates the direction of a development, e.g. -rwo > [ruə] means that the form -rwo developed into the form [ruə]
A ≈ B	A and B are members of the same word family (Matisoff 2003: xxxi)
\$	syllable boundary
C	prefix in WT; consonant
FUT	future
EXC	exclusive
IMP	imperative
INC	inclusive
IPF	imperfective
JZG	Jiūzhàigōu County
MJ	Mǎjiā Township
P	plural
PF	perfective
PR	present
S	singular
V	vowel
WT	Written Tibetan
WX	Wénxiàn County

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<sup>10</sup> The word means in Báimǎ ‘know how to do something’. The verb ‘know’ in the sense ‘have the knowledge of’, ‘be familiar with’, is [tʃha<sup>53</sup>zu<sup>341</sup>] (*cha yod*) (egophoric) and [tʃha<sup>53</sup>no<sup>13</sup>] (*cha snang*). This is a shared lexical item in Báimǎ and Zhongu, viz. [tʃ<sup>h</sup>e-zi].

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