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► To cite this version:

Ekaterina Chirkova. On the Position of Baima within Tibetan: A Look from Basic Vocabulary. Alexander Lubotsky, Jos Schaeken and Jeroen Wiedenhof. Rodopi, pp.23, 2008, Evidence and counter-evidence: Festschrift F. Kortlandt. halshs-00104311

HAL Id: halshs-00104311

<https://shs.hal.science/halshs-00104311>

Submitted on 6 Oct 2006

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On the position of Báimǎ within Tibetan: A look from basic vocabulary¹

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 [pe⁵³] 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.² 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.

¹ Work on Báimǎ, fieldwork and following-up research at Leiden University in 2003-2005, has been made possible through the generous support of the Frederik Kortlandt Spinoza Project.

² On the history of the Báimǎ, see Sìchuān Shěng Mínzú Yánjiūsuǒ 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^h], 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.³ 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

³ 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.⁴ Occasional comparisons are also made to phonological features of Chos-rje, another Tibetan dialect, which borders the Báimǎ variety of Jiǔzhàigōu (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 [ʐø³⁴¹] 'grease, oil', is possibly a loan from Chinese, Middle Chinese *yuw*. Zhāng (1994b: 58) suggests that [ʐø³⁴¹] is cognate with WT *bzhun* (sic.), probably meaning *zhun* 'melted, molten, fat', as in *zhun-mar* 'melted, clarified butter'.⁵ 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 [ʐu³⁴¹]; 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 [ʐi³⁴¹] (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 [tɕa⁵³~tɕɛ⁵³] 'hair', WT *skra*, and

⁴ All data quoted from other sources is given in original transcriptions.

⁵ WT words are given in Wylie's (1959) standard transcription.

[tɕʰa⁵³] ‘blood’, WT *khrag*, corresponding to WT velar initials followed by the medial *-r-*, are characteristic for Amdo, viz. [htɕa] and [tɕhaX] respectively. The unexpected high tone in the word [ngue⁵³] ‘head’, etymologically related to initially voiced *mgo* in WT, might be assigned to Khams (Roland Bielmeier, personal communication, September 2004). Báimǎ 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 [pʰe¹³] in Báimǎ and [pʰu] in Zhongu, both cognate with WT *pho-ba* ‘stomach’, as opposed to the WT etymon *grod-pa* ‘belly’ in Khams and Amdo. ‘Heart’ is [sʰe¹³] in Báimǎ 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.

Báimǎ words for ‘go, walk’, [ndʒi⁵³], and ‘tongue’, [dʒa⁵³], belong to the elegant WT register, *mchi* and *ljags* respectively, and as such are probably later loans.

In addition, Báimǎ 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. [ndu³⁵] ‘drink’ from WT *thung*; and (2) the treatment of WT *l* as *j*, e.g. WT *lam* ‘path’ is [jɔ⁵³] in Báimǎ.

In the following sections, I analyse Báimǎ initials and rhymes, commenting in each case on similarities with other dialects, and propose a set of WT-Báimǎ 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 Báimǎ at large.

2.1. Báimǎ initials

Similar to Khams and Zhongu, Báimǎ has a simple syllable structure. All Báimǎ 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 Báimǎ match those outlined by Gésāng (2001: 73-79) for Khams.

(1) In Khams, Báimǎ 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 [kɔ̌⁵³] ‘full’ in Báimă; *de* ‘that’ becomes [tɛ̌⁵³] ‘that’. Original voicing is preserved if the WT obstruent is preceded by a prefix, as *r-* in *rdo* > [du̐⁵³] ‘stone’ and *s-* in *bya-sgo-nga* > [ɕǎ⁵³guě³⁵] ‘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* > [ndě⁵³] ‘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 [n̥ɐ-ngo] in Zhongu, [n̥ǎ⁵³] in sDe-dge, but [nd̥³⁵nguě⁵³] in Báimă ([hnǎ ɛŋ] 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 [ɕʰǎ⁵³] in Báimă, [xhǎ⁵³] in sDe-dge, [xha] in bLa-brang, but [ɕɐ] in Zhongu. In a similar fashion, WT *sa* ‘earth’ is [sʰǎ⁵³] in Báimă, [shǎ⁵³] in sDe-dge, [sha] in bLa-brang, and [sɐ] in Zhongu. Four exceptions in the Báimă 100-word list are the words [ɕə̌³⁵] ‘louse’, WT *shig*, the imperative form of the verb ‘come’ [ɕuě⁵³], WT *shog*, the perfective/imperative form of the verb ‘die’ [ɕə̌⁵³], WT *shig*, and the interrogative pronoun [sǔ⁵³] ‘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* [dzǎ¹³] ‘moon’ and the perfective form of the verb ‘say, speak’ *bzlas* [dzě³⁵].

(6) The WT cluster *spr-* becomes [ɕ] in Báimă. For example, WT *sprin* ‘cloud’ yields [ɕě³⁵] in Báimă, which is similar to Amdo, [ɕən], but distinct from Khams dialects, e.g. sDe-dge [tɕin̥⁵⁵].

(7) WT *st* becomes [z] in Báimă. For example, *ster* [zɐ̌³⁴¹] ‘give’, cf. the same verb in Zhongu [ʒə̌].

(8) The WT cluster *lj* becomes [dʒ] in Báimǎ, e.g. *ljang-khu* [dʒɔ¹³sə⁵³] ‘green’, again similar to Zhongu, [dʒɔ-ⁿgə], but distinct from Amdo, e.g. bLa-brang [dʒaŋ khə], and Khams, e.g. sDe-dge [ndʒuŋ¹³khu⁵³].

(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. [ɲi¹³], [na¹³ɲe³⁵] and [zɕ¹³ɲi⁵³] 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 [ne¹³ne³⁵] ‘breast, milk’, which is homophonous with the verb ‘be angry’ (origin unknown), and the negator [mɐ¹³], which corresponds to WT *mi*—regularly palatalized in Zhongu, viz. [ɲɐ-].⁶ 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 [tʰie³⁵] in the lower villages and [tʰɛ³⁵] 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*, [tsʰə⁵³] in the Wùjiǎo and Mǎjiā Townships. An example of correspondences outside basic vocabulary is [tsʰə¹³ndze³⁵] ‘neighbour’ in the Wùjiǎo and Mǎjiā Townships versus [tɕʰi¹³ndze³⁵] ‘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-

⁶ 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 [tʃha¹³ɲi⁵³], 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
Velar + <i>-y-</i> <i>khyi</i> ‘dog’ <i>khyod</i> ‘you’	Alveolo-palatal tɕ ^h i ⁵³ tɕ ^h ø ⁵³ tɕa ⁵³ ~ tɕɛ ⁵³ tɕ ^h a ⁵³ ndʒo ³⁴¹	Dental affricate ts ^h ə-ɲɛ ts ^h o	Alveolo-palatal tɕhi ⁵³ tɕhø ⁵³	Alveolo-palatal tɕhə ɣə tɕho
Velar + <i>-r-</i> <i>skra</i> ‘hair’ <i>khrag</i> ‘blood’ <i>gro</i> ‘walk’		Palato-alveolar ^h tʃe- ^h pə tʃ ^h a ⁿ dʒo	Retroflex tʂa ⁵³ tʂha ⁵³ ndʒo ¹³	
Dental, labial + <i>-r-</i> <i>dron-po</i> ‘hot’ <i>bras</i> ‘rice’	Retroflex tʂo ¹³ nbu ⁵³ ndʒɛ ³⁵	Retroflex tʂo- ⁿ bo ⁿ dʒɛ	tʂo ³¹ po ⁵³ ndʒɛ ¹³	Retroflex tʂo mbo ndʒɛ

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 [jɔ⁵³] ‘road, path’, WT *lang* > Báimă [jɔ³⁵] ‘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 [jɔ³⁵] in the word ‘buffalo’, WT *chu-glang*, Báimă [tʃ^hu¹³jɔ³⁵], but as [lɔ⁵³] in the word ‘year of the ox’, WT *glang-lo*, Báimă [lɔ⁵³jyɛ⁵³]. 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. [luɛ⁵³tue⁵³] ‘big’, [liə⁵³kə⁵³] ‘all’. A possible exception is the word [lyɛ¹³lyɛ³⁵] ‘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 sonant 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* [ndu³⁵] ‘drink’ and *‘cha* [ndʒa⁵³] ‘eat’.⁷

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 ^h ue ⁵³)ndy ⁵³	(s ^h ue ⁵³)tø ¹³	so-?	so-?	so-?	so-?	‘bite’
nda ⁵³	ta ⁵³	‘dogs	gdag(s)	btags	thogs	‘tie, fasten’
nda ⁵³	ta ³⁵	‘thag	btag	btags	thog	‘weave, knit’
ndu ⁵³	tu ⁵³	‘thor	gtor	btor	‘thor	‘scatter, sprinkle, spread’
ndzu ³⁵	tsu ³⁵	‘tshong	bt song	bt songs	tshong	‘sell’
ndzu ⁵³	tsu ³⁵	‘tshod	btso	bt sos	tshod	‘cook in boiling water’
ndzə ⁵³	ʂə ⁵³	‘chi		shi		‘die’
ja ³⁵ ndʒu ¹³	ja ³⁵ tʃu ¹³	?	?	?	?	‘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 [ndzə⁵³] ‘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.

⁷ 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’ [nɑ³⁵t^hø³⁵], [ɲɛ³⁵] ‘sleep’, [ɲi⁵³ndu¹³] ‘see’. A total of five verbs in my wordlist of approximately 4,000 Báimă words have three stems, mostly in suppletive distribution, e.g. [ndʒi⁵³] ‘go’ and [wu⁵³] ‘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 [ʃue⁵³], cognate with WT *shog*. The expected form, based on the sound correspondences for basic vocabulary, would be *[ʃ^hue⁵³]. 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 ^h	(C)kh	
d	Cd	
t	(C)t, d	
t ^h	(C)th	
p	(C)p, b	
p ^h	(C)ph	
ŋ	(C)ng	
m	(C)m + low back vowel	negator [mə ¹³] <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 ^h	s	[su ⁵³] <i>su</i> ‘who’
ɸ	labial + y	
ʃ	j, zh	
tɕ ^(h)	(aspirated) velar + y, (aspirated) velar + r	
ʒ	st	
ʃ	Csh, spr	
ʃ ^h	sh	[ʃə ³⁵] <i>shig</i> ‘louse’; [ʃə ⁵³] <i>shi</i> ‘die’; [ʃue ⁵³] <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	
ndʒ	‘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 Kham (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	a, ar
ɑ	ag(s), a , ang
e	ing, ad , as, en, ems, es, i, in, ongs
ø	os, as, od
ɛ	e , a, i, al, an, as, er
ə	i, ig , a, abs, er, in
i	i, is, ig
y	ug
o	a
ɔ	ang, am , o
u	u, ong, ung , ab, ug, ur
ʉ	o , i
ue	o , os, u

ue	og
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Overall, Báimǎ-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 Báimǎ—is the consistent treatment of WT *o* as [ue], a total of three examples in the 100-list, i.e. WT *mgo* ‘head’ > Báimǎ [ngue⁵³], WT *rdo* ‘stone’ > Báimǎ [due⁵³] and WT *so* ‘tooth’ > Báimǎ [s^hue⁵³]. To compare, WT *o* corresponds to /o/ in Zhongu (Sun 2003a: 790). WT *o* and Báimǎ [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 Báimǎ [ngue⁵³], is **m-gaw*~(*s-*)*gaw* (Benedict 1972: 149), that for ‘tooth’, *so* and [s^hue⁵³], 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 Báimǎ. 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 Báimǎ, where WT *a* most frequently corresponds to [ɛ], it is possibly [ɛ], cf. WT *kha* ‘mouth’ is [k^ha⁵³] in the Báimǎ Township and [k^hɛ⁵³] in Jiǔzhàigōu County. In the Báimǎ 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. [tɕa⁵³] and [tɕɛ⁵³] ‘hair’, WT *skra*. The word ‘fish’, WT *nya*, is predominantly [ɲɛ⁵³], but also sporadically [ɲa⁵³]. The distinction between [a] and [ɑ], e.g. the minimal pair [ta⁵³], WT *rta*, ‘horse’ vs. [tɑ⁵³], WT *stag*, ‘tiger’, is proper for Khams (Gésāng 2002: 106).

Two tendencies in the development from WT rhymes to Báimǎ 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 Báimǎ are [mo¹³ruɛ⁵³] **dma-rpo* (most likely *-rwo* > [ruɛ], see below) ‘red’; [ka⁵³nbu⁵³] ‘dry’, WT **ka-nbo*; [ndʒu¹³nba³⁵] ‘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, [ue³⁵] and [ye³⁵], in Báimǎ, the Báimǎ 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 [ɔ³⁵]. 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 ^h ɛ ¹³	belly, stomach
bya-sgo-nga	ɕa ⁵³ gue ³⁵	egg
rnga-ma	ŋue ³⁵	tail
nyi-ma	ɲye ³⁵	sun
du-ba	tue ³⁵	smoke
bye-ma	ɕɔ ³⁵	sand

Contractions are in most cases characterized by the high rising tone. One exception in the words examined is [p^hɛ¹³] ‘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, [ŋa³⁵] and [ŋa⁵³]. 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^hɑ⁵³], WT *khrag*, ‘blood’ combines the Amdo-like initial [tɕ^h] with the Khams-like final with the eliminated coda, [ɑ⁵³].

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 [mo¹³ruɛ⁵³] ‘red’ exhibits syllable boundary shifting typical for Amdo, viz. **dma-rpo*, cf. bLa-brang [hma ro]; the second member of the pair, [mɑ⁵³], is unmistakably Khams, cf. ’Ba’-thang [mɑ⁵⁵mɑ⁵⁵] (Dài & Huáng 1992: 336). Yet most doublets show an etymologically non-Tibetan form in alternation with a Tibetan one, e.g. ‘big’: [luɛ⁵³tue⁵³] and [t^hɛ⁵³], 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. [lu⁵³tue⁵³] ‘big’, and collocation of stops with non-low front vowels not resulting in palatalization, e.g. [ne¹³ne³⁵] ‘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 [ku⁵³], as in [tɕ^hø¹³ku⁵³] ‘you’, is similar to that in Guìqióng and Nàxī (Huáng & Zhāng 1995: 106). For example, Guìqióng, a Qiangic language in south-western Sichuān, marks “collective plural” by the suffix [ku⁵⁵] (Sūn 1983: 117), e.g. plural exclusive first person pronoun [ŋɔ³³ku⁵⁵], plural inclusive first person pronoun [dzu⁵⁵ku⁵⁵], plural second person pronoun [nũ³³ku⁵⁵] and plural third person pronoun [to³³ku⁵⁵].

A possible cognate of the plural suffix [ku⁵³], 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 [a¹³re¹³ku⁵³] is similar to Zhongu [a-ɛa] and appears to be cognate with some Qiangic languages, e.g. the exclusive first person pronoun in Prinmi [a³⁵rə⁵³] and Ěrsū [a⁵⁵rl⁵⁵] (Zàng-Miányǔ yǔyīn hé cǐhuì biānxiézǔ 1991: 1345).⁸

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

(3) The adjective [ɕi⁵³ɕi⁵³] ‘small’ is distinctly Qiangic, cf. [ɕi] ‘small’ in the Rónghóng dialect of Qiāng (Randy LaPolla, personal communication, March 2005), Zhābà [jɪ³³jɪ⁵⁵] ‘small’, Lǔsū [ji³³ji⁵³] ‘small’.

Huáng & Zhāng (1995: 94) suggest WT *zhīb-zhīb* ‘crumb, powder, fine like powder, refined flower’ as the etymon of Báimǎ [ɕi⁵³ɕi⁵³]. Different semantics apart, *zhīb-zhīb* would not be regular by their own sound correspondences, according to which the expected form would be *[ɕə⁵³ɕə⁵³]; compare *skrang-zhi* > [ɕə³⁵ɕə⁵³] ‘dissolve (of a swelling)’ (ibid., p. 90).

(4) The adjective [luə⁵³tue⁵³] ‘big’ might likewise be related to Qiangic, cf. Shǐxīng [mɜ³³duɜ⁵³], also [la⁵⁵duɜ⁵³] (Dài et al. 1991: 193).

Note that [luə⁵³tue⁵³] ‘big’ and [ɕi⁵³ɕi⁵³] ‘small’ are more frequent and productive in word formation than their obvious Tibetan-derived synonyms [tʃ^he⁵³], *chen-po*, and [tʃ^hu¹³tʃ^hu³⁵], *chung-chung*, respectively.

(5) For the word [liə⁵³kə⁵³] ‘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 *[je³⁵ke⁵³]. The form [ts^hɔ¹³pɛ⁵³] attested in Mǎjiā Township, Jiǔzhàigōu County, on the other hand, is a regular reflexion of WT *tshang-ma*, cf. Zhongu [ts^hɔ-mo], sDe-dge [ts^hɑŋ⁵⁵ma⁵³].

(6) The distal pronoun [wu¹³le⁵³], also used anaphorically as singular third person pronoun, is semantically analyzable into the element [wu¹³] ‘that’, as in [wu¹³la⁵³] ‘there’, literally ‘that location’; and [le⁵³] ‘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 [nɐ¹³wu⁵³] ‘black’ is again probably of Qiangic origin, cf. Prinmi [nɑ¹³], Quèyù [nɛ⁵⁵nɛ³³], Dàofú [nɑ nɑ]. The Tibetan-derived synonym [nɑ⁵³], *nag-po*, derives from Kham, cf. sDe-dge [nɑ⁵⁵na⁷⁵³], and occurs in Báimǎ only in set expressions, such as [nɑ¹³wu⁵³~nɑ¹³pu⁵³] ‘darkness’ and [ni¹³na⁵³] ‘very black eyes’.

(8) The noun [ne¹³ne³⁵] ‘breast, milk’ also has cognates in Qiangic languages, cf. Zhābà [nə⁵⁵nə⁵⁵].

(9) The noun [dzə¹³ngue⁵³] ‘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, [pɔ⁵³mɔ⁵³ndzu⁵³] ‘kneel’, WT *pus-mo ndzugs*.

(10) For [ndzɑ³⁵] ‘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 [lyɛ¹³lyɛ³⁵] ‘round’ is described by Zhāng (1994b: 62) as being related to WT *log-log*. Alternative possible cognates in Qiangic languages are Guìqióng [lɔ³³lɔ⁵⁵] or Ěrsū [pu⁵⁵li⁵⁵li⁵⁵] (Zàng-Miányǔ yǔyīn hé cihuì biānxiézǔ 1991: 1179).

The origin of words not discussed in this section (singular first person pronoun [k^ha²¹gu³⁴¹] (not attested in my data, quoted from Huáng & Zhāng 1995: 106), different forms of the plural first person pronoun, [ja³⁵ndzu⁵³~ja³⁵tʃu⁵³] ‘give’, [tɕ^hɛ³⁵] ‘smoke’, [wa¹³tʃa⁵³] ‘claw’, [gɐ⁵³] ‘horn’) as well as the origin of the words with partial cognation (e.g. [s^hue⁵³ndy⁵³~s^hue⁵³tɕ¹³] ‘bite’ and [s^ha¹³ŋə³⁵] ‘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 [ku⁵³], 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 cǐhuì 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 ⁵³ ru ⁵³ , ka ⁵³ (in set expressions)	ke-rə	ka ⁵⁵ ka ⁵⁵	ka ro
rkang-pa	foot	kə ⁵⁵ ~kə ¹³ wa ⁵³	^h kə	kun ⁵⁵ ba ⁵³	hkanj wa
skam-po	dry	ka ⁵³ nbu ⁵³	^h kə- ⁿ bo	kan ⁵⁵ bo ⁵³	hka mbo
skar-ma	star	ka ⁵³ ma ⁵³ (JZG kə ⁵³ mə ⁵³)	^h kə-mə	ka ⁵⁵ ma ⁵³	hkar ma
ske	neck	kə ¹³ du ³⁵	q ^h e-tə	kə ⁵³	hke tə
skye-dman	woman	mo ¹³ ra ⁵³ <ma-rabs>	mə-ri	na ¹³ mo ⁵³	?a ji tcho
skra	hair	təa ⁵³ ~təe ⁵³ (WX tēe ⁵³)	^h tʃe- ^h pə	tʃa ⁵³	htəa
kha	mouth	k ^h a ⁵³ (JZG k ^h e ⁵³)	k ^h e	kha ⁵³	kha
khyi	dog	tə ^h i ⁵³ (JZG ts ^h ə ⁵³)	ts ^h ə-nə	təhi ⁵³	təhə yə
khyo-ka	man	pu ⁵³ za ⁵³ <bu sar>	zə-ri	çe ⁵⁵ pa ⁵³	çələ tcho
S: khyod; P: khyod tsho	you	tə ^h ə ⁵³ ; tə ^h ə ¹³ ku ⁵³	ts ^h o; ts ^h o- ^h a	təhə ⁵³ ; təhə ⁵³ ri ⁵³ na ¹³	tcho; təhə tcho
khrag	blood	tə ^h a ⁵³	tʃ ^h a	tʃha ⁵³	təhaʔ
gang	full	kə ⁵³	kə	gan ¹³	kanj wo
go; tshor	hear	na ³⁵ hə ³⁵ <rma-thos-pa>	ts ^h o	NA	ko
grang-mo	cold	ndza ³⁴¹ ~ndza ¹³ pu ⁵³ <'khyags>	ⁿ ts'a	təhə ⁵³	təan; təhaʔ kwa
grod-pa	belly	p ^h e ¹³ <pho-ba>	p ^h u	tsə ¹³ pa ⁵³	ho
mgo	head	ngu ⁵³	ⁿ go-tə	ngo ³¹	ngo tə
'gro, PF/IMP: song	walk, go	IPF: ndzi ⁵³ <mchi>, PF: tē ^h e ³⁵ <chas>, IMP: s ^h u ³⁵ <song>; ndzo ³⁴¹	ⁿ dzo, PF: t ^h e <thal>, IMP: su	ndzo ¹³	ndzo
(so-)rgyag	bite	IPF: s ^h ue ⁵³ ndy ⁵³ , PF/IMP: s ^h ue ⁵³ tə ¹³	so-qo tsə	ndze ³¹	sho ndep
sgo-nga	egg	çə ⁵³ gue ³⁵ <bya-sgo-nga>	go-ŋe	go ¹³ ŋa ⁵³	goŋ ŋa
sgor-sgor	round	lye ¹³ lye ³⁵ <?log-log>	ʁo-ʁo	ru ¹³ lo ⁵³ <ril-ril>	hkor hko
sgro	feather	pu ⁵³ <spu>	tʃə- dzu <bya- sgro>	dzo ³¹	dzo
nga	I, me	ŋa ³⁵ ~ŋa ⁵³ ; kha ³¹ gu ³⁴¹	ŋe	ŋa ¹³	ŋa
INC: nga-rang-tsho EXC: nga-tsho	we	ze ¹³ ku ⁵³ ~jy ¹³ ku ⁵³ ; a ¹³ re ¹³ ku ⁵³ ŋe ¹³ ku ⁵³ ~jy ¹³ ku ⁵³ ; k ^h e ¹³ ku ⁵³	a- ^h a ŋə- ^h a	ŋe ³¹ ri ⁵³ na ¹³ ŋa ¹³ ri ⁵³ na ¹³	?o zo ?o tcho
rnga-ma	tail	ŋue ³⁵	ŋa	ŋa ⁵⁵ ma ⁵³	hja ma
gcig	one	tʃə ⁵³	ʒtsə	tçi ⁵³	htçəʔ
lce	tongue	dza ⁵³ <ljags>	ʃe	tçe ⁵³	htçe
char-pa	rain	no ³⁵ nbu ⁵³ <nam-'bab>; tʃ ^h a ¹³ pa ⁵³	ʌno; tʃ ^h e	təha ⁵³ ba ⁵³	təhar wa
chi	what	tʃ ^h ə ⁵³	tʃ ^h ə(-tsə)	tçi ⁵³	təhə zəʔ
chu	water	tʃ ^h u ⁵³ ~tʃ ^h u ¹³ ndza ³⁵ <chu-'khyags>	tʃ ^h ə	tchu ⁵³	təhə
chu-rkyal	swim	tʃ ^h u ¹³ su ⁵³	tʃ ^h ə- ^h tse tsə	NA	təhə çə htaʔ
chung	small	çi ⁵³ çi ⁵³ ; tʃ ^h u ¹³ tʃ ^h u ³⁵	tʃ ^h ə-tʃ ^h u	təhun ⁵³ təhun ⁵³	təhonj wo
chen-po	big	lu ⁵³ tue ⁵³ ; tʃ ^h e ⁵³	^h tʃe-tē	təhe ³⁵ bo ⁵³	təhe wo
mchin-pa	liver	ndzu ¹³ nba ³⁵	tʃ ^h ə- ⁿ bə	təhin ⁵⁵ ba ⁵³	təhə mba
'chi, PF/IMP: shi	die	IPF: ndzo ⁵³ , PF/IMP: sə ⁵³	ʂə	xhe ⁵³	xhə
ljang-khu	green	dzo ¹³ sə ⁵³	dzo- ⁿ gə	ndzun ¹³ khu ⁵³	dzanj khə
nya	fish	ŋe ⁵³	ŋe	na ¹³	na
nyal, IMP: nyol	lie, sleep	ŋe ³⁵	ŋi	ne ¹³	na
nyi-ma	sun	ŋye ³⁵	ŋə-wa	ni ¹³ ma ⁵³	nə ma
gnyis	two	ŋi ³⁴¹	ʌnə	ni ⁵⁵	hni
snying	heart	s ^h e ¹³ <sems>	se	nin ⁵⁵	hnaj
ster, PF/FUT: bster; sbyin, PF/IMP: byin	give	zə ³⁴¹ ; çe ⁵³ ; IPF: ja ³⁵ ndzu ⁵³ , PF/IMP: ja ³⁵ tʃu ⁵³	zə, PF: tsi, IMP: tsu	jin ⁵⁵	hter
tshang-ma	all	liə ⁵³ kə ⁵³ (MJ ts ^h ə ¹³ pə ⁵³)	ts ^h ə-mo	tshan ⁵⁵ ma ⁵³	loʔ loʔ ʁa
thal-ba	ashes	t ^h ie ³⁵ ~t ^h e ³⁵	ko-ti	ko ¹³ the ⁵³	NA
(mig-)mthong	see	ŋi ⁵³ ndu ¹³	ⁿ tʃu	ri ³¹	rəʔ
'thung, PF: 'thungs	drink	ndu ³⁵	ⁿ tʃu, PF/IMP: ⁿ tʃi	thu ⁵³	thoj
de	that	wu ¹³ le ⁵³ ; tē ⁵³	te	phen ⁵⁵ de ⁵³	kan

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

⁹ The second form might be related to Central Tibetan [maŋ¹³ko⁵³].

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

Abbreviations

>	indicates the direction of a development, e.g. - <i>rwo</i> > [ruə] means that the form - <i>rwo</i> 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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¹⁰ The word means in Báimǎ ‘know how to do something’. The verb ‘know’ in the sense ‘have the knowledge of’, ‘be familiar with’, is [tʃha⁵³zu³⁴¹] (*cha yod*) (egophoric) and [tʃha⁵³no¹³] (*cha snang*). This is a shared lexical item in Báimǎ and Zhongu, viz. [tʃ^he-zɿ].

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