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A first look at Kami, the Tibetan dialect of Mùlǐ*

Abstract: This article provides a synchronic and diachronic description of the phonological system of Kami Tibetan, a Khams Tibetan dialect spoken in Mùlǐ Tibetan Autonomous County (Sìchuān Province). It focuses on characteristic features of Kami that set this variety apart from the best-recorded Khams dialects (Bātáng and Dégé) and from the dialects of Díqìng Prefecture (Zhōngdiàn and Dōngwāng), with which Kami is grouped in one cluster in Qú and Jīn’s (1981) classification. Based on presented Kami data and viewed in relation to corresponding phenomena in the neighboring Qiangic languages, the article critically evaluates (1) the current subgrouping scheme whereby Kami is grouped together with the dialects of Díqìng Prefecture, and (2) the phylogenetic Qiangic subgrouping hypothesis.

1. Introduction

Kami Tibetan (hereafter Kami) is a variety of Tibetan spoken in Mùlǐ Tibetan Autonomous County 木里藏族自治州, Written Tibetan (WT) <mu li rang skyong rdzong>. This county is part of Liángshān Yí Autonomous Prefecture 涼山彝族自治州 in Sìchuān Province in the People’s Republic of China (PRC).

1.1. Mùlǐ and its languages

Established in 1953, Mùlǐ Tibetan Autonomous County is a successor to the semi-independent theocratic kingdom of Mùlǐ (variously, *rmi li* or *rmu le*), ruled by hereditary lama kings of the Tibetan-Buddhist dGe lugs pa tradition.¹

Mùlǐ is one of the religious, cultural, and geopolitical border areas of the Tibetan realm. It is culturally Tibetan, but ethnically and linguistically much less so.

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¹ On the history of Mùlǐ, see Kessler (1986), Mùlǐ Gazetteers (1995), van Spengen (2002), and Wellens (2006).

Notable ethnic groups residing in Mùlǐ include (linguistic affiliation of the languages they speak is mentioned in brackets):

- Púmǐ 普米 (Qiangic), the ethnic majority and, historically, the ruling elite
- Tibetans (Tibetan)
- Xùmǐ, 旭米, or Sùmǔ, 粟母, [ʃu⁵⁵-hǐ⁵⁵] (a.k.a. Shǐxīng 史興, Qiangic)
- Lizu 里汝 [li⁵⁵-zu⁵⁵] (a.k.a. Ěrsū 爾蘇, Qiangic)
- Nàmùzī 拉木兹 or 納木兹 [næ⁵⁵-mu³³-zɿ³¹] (Qiangic)²
- Na, or Moso (unclassified)
- Nosu (Northern Yí or Ngwi, Ngwi-Burmese)
- Chinese (Sinitic), presently the lingua franca

Of all linguistic groups above, Qiangic is the least studied and the most controversial. The controversy is due to (1) the essentially typological nature of the characteristics underlying the group (e.g. directional prefixes, measure words, diminutive formation with the root for ‘child’, multiple existential verbs; cf. Sūn 1983, 2001); and (2) the rudimentary state of our knowledge of most languages making up the group, especially in its southern end (including Mùlǐ).

The Qiangic languages of Mùlǐ display typical Qiangic features: (1) The languages are highly dissimilar and cannot be straightforwardly integrated into any of the neighboring, more coherent subgroups (Tibetic, Ngwi, Na languages). (2) The languages, despite their dissimilarity, share a set of (essentially typological) features (such as directional prefixes) that set them apart from the neighboring subgroups. (3) The languages are spoken in an area of long-standing, mostly symmetrical, multilingualism.

The received Qiangic phylogenetic hypothesis can only account for the second of these features, for it explains the similarities between Qiangic languages as the result of a common ancestry. I therefore propose an areal hypothesis: Qiangic as a *Sprachbund*. This alternative explanation can account for all three features, namely by seeing (1) and (2) as the result of (3). To test this alternative explanation, we need to move beyond the usual practice of restricting the scope of tested languages to those labelled as “Qiangic”. This is because, among the similarities shared by Qiangic languages, we do not have reliable means to distinguish between those resulting from inheritance and those induced by contact. A possible solution would be to seek an independent indication of possible areal phenomena induced by language contact to be taken into account while assessing the nature of the similarities between the obscure languages currently grouped under the label “Qiangic”. A language of a phylogenetically better understood subgroup, which has been in the “Qiangic” area long enough to be exposed to the same areal influences as Qiangic languages, can serve as such an indication.

In connection with the investigated area, Mùlǐ, the local Tibetan dialect suits this purpose perfectly. It has a particular status among Mùlǐ languages for political, religious, and cultural reasons, and it has been in the area for at least 800 years (see the next section). In contrast to its more obscure linguistic neighbors, it is an offshoot of a relatively well studied written language. It is also a language whose kin synchronic varieties have been relatively extensively documented. If a comparison of the Tibetan dialect of Mùlǐ with its linguistic ancestor and its synchronic kin (Old

² Shǐxīng, Lizu and Nàmùzī data throughout the text are from personal research.

Tibetan and the neighboring Tibetan dialects) yields features that are atypical, these features may be suggestive of the major areal mechanisms of contact-induced change. If these features are furthermore shared with neighboring Qiangic languages, their presence in the local Tibetan dialect would corroborate the assumption that the features which are currently held as characteristic of the *phylogenetic* Qiangic subgroup rather delineate a *geographical area* that includes genetically unrelated languages. The present study explores this conjecture.

1.2. Kami: Name and location

The Kami people call themselves /ʌpɛ/ <bod>.³ “Kami” is a common appellation of the dialect in Mùlǐ, where the official Chinese name of the group is 呷咪 Gāmǐ (Mùlǐ Gazetteers 1995: 833).⁴ This name stems from Púmǐ /ka⁵⁵-mə⁵⁵/, which is reportedly an abbreviation of a longer expression for ‘helpers’, consisting of the verb /ka⁵⁵ku³⁵/ ‘help’ and the noun /mə⁵³/ ‘person’.⁵ Fearless skillful warriors, the Kami formerly served the ruling Púmǐ elite of Mùlǐ.

PLACE MAP 1 ABOUT HERE

Map 1: Location of Kami townships in Mùlǐ

Kami is spoken by approximately 20,000 people who reside in six townships in the northern part of Mùlǐ. From West to East, these townships are:

Shuǐluò 水洛 /ʌco-ʰlo/

Màirì 麥日

Dōngláng 東朗

Tángyāng 唐央

Bówō 博窩 /ʌba-ʰwu/

Màidìlóng 麥地龍

The division into townships dates from 1953. As my consultants, all from Shuǐluò, customarily refer to these townships by their Chinese names, only two non-Chinese names could be elicited (see above).⁶

³ I present Kami data in broad phonetic transcriptions in order to include the uvular allophones of velar phonemes as well as some common allophones that result from irregular phonological processes. Square brackets are used for narrow phonetic transcriptions (surface phonological representations) and slashes for broad phonetic transcriptions (the product of my analysis). Kami register tones are here marked by superscript letters (L for ‘low’ and H for ‘high’) (see §2.4 for discussion). WT forms (in Wylie’s 1959 standard transcription) are provided in angle brackets alongside the corresponding spoken forms. A complete list of conventions and abbreviations is provided at the end of the article.

⁴ Alternatively, in the linguistic literature, this Tibetan dialect has been introduced under the name of “嘎米” Gāmǐ, Huáng (1994: 145-148).

⁵ Púmǐ data from Lù (2001), from Guillaume Jacques (p.c.), and from personal research.

⁶ Here are some explanations for the names of the townships, as gathered from my language consultants, from Kessler (1986), and from Mùlǐ Gazetteers (1997). The name for Shuǐluò, /ʌco-ʰlo/ <sho lo>, is a Tibetan rendering of the original Xùmǐ toponym, the Xùmǐ people being the ethnic majority in this township. The first syllable stems from the autonym of the group /ʰʂu-ʰhĩ/, literally ‘the Shu people’, whereas the second syllable means ‘valley’, i.e. ‘valleys of the Shu people’ (Mùlǐ

In Shuǐluò, the Kami reside in the north of the township, with the Xùmǐ people as their southern neighbors. The townships of Màirì and Dōngláng are Kami-monolingual. The township of Màidilóng is Kami and Chinese mixed. And the townships of Tángyāng and Bówō are mixed Kami, Nosu, and Chinese. To their north, the Kami border on the Tibetan-speaking counties of the Gānzī 甘孜 <dkar mdzes> Tibetan Autonomous Prefecture (see Map 1). The Kami variety of Shuǐluò is reportedly mutually intelligible with the Tibetan dialect of Dàochéng 稻城 <'dab pa>.

Almost all Kami speakers are trilingual in Kami, Púmǐ, and Chinese. Púmǐ is the historical lingua franca of the area; Chinese adopted that role in recent times. In my observation, older people use Púmǐ to speak with others whose mother tongue is different, whereas younger speakers use Chinese for this purpose. In addition, many Kami also speak the languages of the ethnic groups on which they border, i.e. the Shǐxīng language in Shuǐluò, and the Nosu language in Tángyāng and Bówō.

Speakers of Kami recognize two sub-dialects of their language: that of Shuǐluò, Màirì, and Dōngláng, on the one hand, and that of Tángyāng, Bówō, and Mǎidilóng, on the other hand. While the precise nature of differences between the two sub-dialects remains to be investigated, it is conceivable that these differences are mainly due to the influence of the languages of the respective ethnic groups on which these sub-varieties of Kami border, that is, Shǐxīng and Nosu.

The present work is limited to the sub-dialect of Shuǐluò, Màirì, and Dōngláng, as represented by the speech of Shuǐluò. Overall, Kami is inhomogeneous. This is to say that every single Kami-speaking village has its own variety with distinctive phonological, morphological, and lexical features. My work with four language consultants, all from different villages, reveals a wide array of inter-village variation, ranging from different segmental inventories, different tonal patterns in polysyllabic words, to words traceable to different WT etymons (see §2.2 and further).⁷

1.3. Previous studies, linguistic position

Kami was included in the major linguistic survey of China in the 1950s, and it is listed in some comprehensive classifications of the Tibetan dialects of the PRC.⁸ However, to my knowledge, no linguistic data or analysis of Kami has ever been released.

In Gésāng (1964), Kami belongs to the southern cluster of Khams dialects. Besides Kami, this cluster comprises a large number of dialects, including the dialects of Gānzī Prefecture, the dialects of Dìqìng 迪慶 <bde chen> Tibetan Autonomous

Gazetteers 1995: 133). The name for Màirì derives from the Tibetan word for ‘sulfer’, <mu zi>, which used to be produced in the area (Mùlǐ Gazetteers 1995: 154). According to Mùlǐ Gazetteers (1995: 153), “Dōngláng” stands for ‘spirit of the tiger’. However, given the Chinese transliteration of the name, it appears to rather derive from <dom bla ma?> ‘spirit of the bear’. “Tángyāng” comes from an earlier “同窩” *tóngwō*, meaning ‘plain, flatlands’, WT <thang pa> (Mùlǐ Gazetteers 1995: 155). “Bówō” allegedly comes from the word for ‘wine jug’, given the elongated shape of this township (Mùlǐ Gazetteers 1995: 156). The Tibetan etymology of this word is unclear to me. Finally, “Màidilóng” means ‘valley of Muti Konka’, <mu ti(g) rong> (Mùlǐ Gazetteers 1995: 157). Muti Konka (麥地貢嘎, <mu ti(g) gangs dkar>) is a mountain at the border of Mùlǐ and Jiǔlóng counties.

⁷ An example of a word that is traceable to different WT etymons in different villages is ‘rust’: /^htso/ <gtsa> for my main consultant vs. /^hzo/ <g.ya> for my other consultants.

⁸ These comprehensive classifications include Gésāng (1964), and Qú and Jīn (1981). Curiously, Kami is no longer included in the later revised edition of Gésāng (1964), e.g. Gésāng and Gésāng (2002). Neither is it incorporated in the detailed classification in Zhāng (1993).

Prefecture in Yúnnán Province, and some dialects of Chāngdū 昌都 <chab mdo> Prefecture in Tibet. Bātáng 巴塘 Tibetan <'ba' thang> is held to be representative of this cluster. Hence, references to this dialect, both in terms of data and analysis thereof (Gésāng 1989, Dài and Huáng 1991) will be made throughout the present article.

The southern Khams cluster in Gésāng (1964) corresponds to two distinct clusters in the classification of Qú and Jīn (1981). These clusters are (1) Eastern (including the dialects of Gānzī Region and those of Chāngdū Prefecture), and (2) Southern (including Kami and the dialects of Dìqìng Prefecture). The criteria underlying this classification are supposedly more fine-grained than those in Gésāng (1964), hence yielding a more detailed classification scheme. Unfortunately, as far as I am aware, the precise combination of features underlying either of these two clusters has never been made explicit.

Overall, Kami fits well into the “Khams-profile” in that it combines a number of features that are held to be distinctive of this group, as outlined in Hú (1991: 191-198), Zhāng (1993), and Gésāng and Gésāng (2002: 72-91).⁹ The ensuing description and discussion are built against the background of the best-recorded Khams dialects Bātáng and Dégé 德格 <sde dge>, and the documented dialects of Dìqìng Prefecture: Zhōngdiàn 中甸 <rgyal thang> (Lù 1990, Wáng 1996, Hongladarom 1996) and Dōngwāng 東旺 <gtor ba rong> or <rter ma rung> (Bartee, this volume). This procedure, I argue, enables us (1) to situate Kami in a broader regional context, (2) to test the assumption that Kami forms one cluster with dialects of Dìqìng Prefecture, and finally, and (3) to detect possible non-Tibetan, idiosyncronic features of Kami to be potentially interpreted as indicative of contact-induced areal phenomena.

I am aware of only two mentions of Kami and Kami data in the linguistic literature. The first is Xiè Jiànyóu's (1992) article “Mùlǐ duōyǔ shèqū” [On the multi-lingual community of Mùlǐ]. Xiè evokes Kami in a sociolinguistic context, with respect to its distribution in relation to other languages of the county. Xiè (1992: 48) also indicates the time of the movement of the Kami into Mùlǐ (approximately 800 years ago), but does not mention the sources on which he bases this information.¹⁰ The second is Huáng Bùfán's (1994) article “Zàng-Miányǔ dòngcí de qūxiàng fànchóu” [The category of directionality in Tibeto-Burman verbs]. Huáng (1994: 145-148) quotes Kami in connection to its strikingly non-Tibetan feature, the use of directional prefixes (discussed in §4.2). Aside from these two mentions, Kami has not been previously described and is virtually unknown.

1.4. Data sources and structure of the article

I base my phonological and lexical study of Kami on materials collected during several field trips. I started working on Kami in 2006, in connection to my ongoing

⁹ This said, however, I keep in mind that many a characteristic Khams feature is too general and non-committal to make Khams (which is a rather heterogeneous collection of dialects) a coherent group, see Denwood (1999: 31-32) and Sun (2003: 794-796) for discussion. Nonetheless, in the absence of a more rigorous classification, I will use the proposed characteristic features as indications of most salient regional tendencies, whether retentions (e.g. simplified consonant clusters, voiced obstruent initials) or convergent developments (e.g. syllable canon reduction and tones).

¹⁰ According to Kessler (1986: 20, 46), Mùlǐ has been settled by Tibetans since ca. 680 AD, i.e. after the unification of the Tibetans with the Hsi-fan nomadic tribes, who settled in the areas to the East of Tibet between 618 and 906 AD. However, it was only after 1253 that Mùlǐ formed the southeastern corner of the at that time still existing Tibetan empire. It is the latter date that Xiè probably had in mind.

work on the Shǐxīng language, with which Kami is in close contact. As my original motivation was essentially to gather supporting data for my study of Shǐxīng, I limited myself to the Kami variety of Shuǐluò. I continued working on Kami in 2008 and 2009 and have so far worked with four speakers: three male, all in their 50s, and one female, in her 40s. The present study is essentially based on my work in 2009 with the language consultant with whom I had the opportunity to work the longest of all consultants, and whose speech, accidentally, maintains more segmental phonemic distinctions than any of the three other consultants: Mr. Yáng Lǚróng Duōdīng 楊魯絨多丁 /ʰtchi-ʰra# ʰja-ʰlǝ# ʰlu-ʰzũ# ʰthu-ʰdĩ/ <blo bzang stobs ldan> from the Qílā village (hereafter, the main consultant). Essential phonological differences between consultants are commented upon throughout the text.

The article is organized as follows. Section 1 is this introduction. Section 2 outlines synchronic Kami phonology. Section 3 traces the origins and developments of this phonological system from Old Tibetan (OT). The sound system of OT essentially refers to the phonological system underlying traditional Tibetan orthography, which for the most part can be recovered through a comparison of the modern dialectal reflexes of the orthographic forms. Section 4 comments on the idiosyncratic (as seen from Tibetan dialects) lexical and structural features of Kami. Section 5 provides a summary discussion. I conclude this article with an English-Kami word list of circa 1,500 common words (from my main consultant).

2. Synchronic phonology

2.1. Syllable structure and word structure

The canonical Kami syllable minimally consists of an obligatory vowel and a tone. It may also contain up to three optional elements, in the following linear structure: (C)(C)V(V), where C stands for consonant, V stands for vowel, the two vowel-symbol-notation stands for diphthong, and brackets indicate optional constituents. The only possible initial consonant clusters are prenasalized voiced stops and affricates and the cluster /hʃ/. Vowel-initial words are usually preceded by a non-phonemic glottal stop.

V	/ʰɔ̃/ ‘to come’
VV	/ʰue/ ‘light, rays’
CV	/ʰdu/ ‘stone’
CVV	/ʰphɔ-ʰdui/ ‘blister’
CCV	/ʰndə/ ‘to exist; to reside; to sit’, /ʰhʃɔ/ ‘god, Buddha’
CCVV	/ʰnduẽ/ ‘to recite, to chant’

Table 1. Kami syllable structure

Similar to its linguistic neighbors, Kami is phonologically monosyllabic with a strong tendency towards disyllabicity in its lexicon. In the surveyed sample of approximately 2,000 lexical items, 27 percent of words are monosyllabic, over 65 percent are disyllabic, and the remainder are trisyllabic and quadrisyllabic. Trisyllabic and quadrisyllabic words tend to be made up of compounds, e.g. /ʰŋɔ̃ ʰgo-ʰwã/ ‘roe of fish’ (< /ʰŋɔ̃/ ‘fish’, /ʰgo-ʰwã/ ‘egg’), /ʰhẽ# ʰnda-ʰwɔ# ʰtɕi/ ‘last month’ (< /ʰhẽ/

(bound root) ‘last, previous?’, /^hnda-^hwɔ/ ‘month’, /^htɕi/ ‘one’). A handful of trisyllabic words are also monomorphemic, e.g. /^hlɔ̃-^hnbu-^htɕhi/ ‘elephant’, /^hʃa-^hbu-^hlo/ ‘beige, light blue-grey’.

Disyllabic word is a domain of operation of a number of irregular phonological processes, including spirantization, voicing (which is at times accompanied by spirantization), and resyllabification (see §3.4 for discussion and exemplification). They target the initial of a second syllable, resulting in slightly different segmental inventories in the first and the second syllable of the word.

2.2. Initials

Kami Tibetan has an elaborate onset system, which comprises forty-seven simple initial consonants and seven complex initials.

2.2.1 Simple initials

Consonant phonemes in Kami represent seven distinct places of articulation and six distinctive manners of articulation. The consonant phonemes are listed in Table 2 according to place and manner of articulation (*h* following a consonant phoneme indicates aspiration, whereas *h* preceding a consonant phoneme indicates its voiceness; /r/ is phonetically [ɹ] or [z], in free variation).

Bilabial	Dental	Retroflex	Palato-alveolar	Alveo-palatal	Velar	Glottal
p, ph, b	t, th, d				k, kh, g	
	ts, tsh, dz	tʂ, tʂh, dzʂ	tʃ, tʃh, dʒ	tɕ, tɕh, dʒ		
	s, sh, z		ʃ, ʃh, ʒ	ɕ, ɕh, ʒ	x~χ, ɣ~ʁ	h
m, hm	n, hn			ɲ, hɲ	ŋ, hŋ	
	l, hl					
w	r, hr			j		

Table 2. Kami consonant phonemes (Main consultant)

All phonemes may appear both in the word-initial and in the second-syllable-initial position, with the exception of /hr/, which is restricted to the second-syllable-initial position. This phoneme tentatively results from word-internal mutation, involving rhotacism (see §3.4). The remainder of this section discusses Kami consonant phonemes by place of articulation.

(1) Stops

Kami stops are pronounced at three different places of articulation: bilabial, dental, and velar. Kami stops contrast in voicing; voiceless stops are further distinguished by aspiration, e.g.:

/b/ /^hbɔ/ ‘to bury’, /^htʂi-^hbə/ ‘bell’, /^hbu/ ‘breath’

/p/ /^hpɔ/ ‘cow’, /^hpə/ ‘(animal) hair, fur; son’, /^hpu/ ‘to move’

/ph/	/Hphɔ/ ‘father’, /Hphə/ ‘malt dregs after brewing beer’, /Hphu/ ‘to punch’
/d/	/Lda/ ‘to lick’, /Ldu/ ‘to poke, to stab’, /Ldu/ ‘stone’
/t/	/Hta/ ‘tiger’, /Htɣ/ ‘to scatter, to cast’, /Htu/ ‘to pluck, to pick (flowers)’
/th/	/Htha/ ‘texture, web’, /Hthɣ/ ‘fireplace, stove, hearth’, /Hthu/ ‘grain, crops’
/g/	/Hgo/ ‘saddle’, /Lgu/ ‘to wait’, /Hgu/ ‘door; to divide, to share’
/k/	/Hko/ ‘gutter; pillar’, /Hkɣ/ ‘to cover’, /Hku/ ‘to carve, to engrave’
/kh/	/Hkhɔ/ ‘mouth’, /Hkhɣ/ ‘needle’, /Hkhu-Hnbɔ/ ‘house’

(2) Affricates

Kami affricates include more contrasts of place of articulation than stops, namely four: dental, retroflex, palato-alveolar, alveo-palatal. Words with palato-alveolar affricates are infrequent in the surveyed sample. Similar to stops, Kami affricates contrast in voicing; voiceless unaspirated affricates further contrast with their voiceless aspirated counterparts:

/dz/	/Hti-Hdza/ ‘saber, small sword’, /Hdzɔ/ ‘county’, /Ldzui/ ‘to pasture, to herd’
/ts/	/Htsa/ ‘to sieve, to sift’, /Htsɔ/ ‘root’, /Htsu-Hwo/ ‘grass’
/tsh/	/Htsha/ ‘to marry a woman’, /Htshɔ/ ‘salt’, /Htshu/ ‘lake; to be busy’
/dz/	/Hdzɔ/ ‘enemy’, /Hdzɔ̃/ ‘honey; sugar’
/tʂ/	/Htʂa/ ‘to fear, to be afraid of’, /Htʂɔ/ ‘(human) hair’, /Htʂɔ̃/ ‘to swell’
/tʂh/	/Htʂha/ ‘blood’, /Htʂhɔ/ ‘thin’, /Htʂhɔ̃/ ‘beads, rosary’
/dʒ/	/Hdʒɔ/ ‘Chinese; hundred’, /Ldʒɔ̃/ ‘intestines, bowels’
/tʃ/	/Htʃa/ ‘to weigh’, /Ltʃɔ̃/ ‘wall’, /Ltʃuē/ ‘to put on, to wear’
/tʃh/	/Htʃhə/ ‘dog’, /Htʃhue/ ‘thou, second person singular pronoun’
/dʒ/	/Hdʒi/ ‘heavy’, /Ldʒa-Hmu/ ‘heavy’
/tʂ/	/Htʂa/ ‘iron’, /Ltʂɔ/ ‘tea’, /Lshu-Htʂɔ/ ‘hoof, clot’
/tʂh/	/Htʂha Ltʂi/ ‘one pair’, /Htʂhə/ ‘water’, /Htʂho/ ‘to be enough’

Kami exhibits a typologically unusual opposition between the palato-alveolar and the alveo-palatal places of articulation for affricates and fricatives. This opposition has been argued to be not optimal in terms of maintaining sufficient perceptual contrast and therefore, if not altogether impossible, than in the least, highly marked (Hall 1997: 66-70).¹¹

This opposition in Kami is mostly constrained to the environment before non-high non-front vowels, whereas the two series are not distinguished between high front vowels. In addition, before the schwa, the contrast between two series may

¹¹ Among Tibetan dialects, the same opposition is also attested in Báimă (Zhāng 1994a, 1994b, 1997, Huáng and Zhāng 1995). The respective OT origins of palato-alveolar and alveo-palatal phonemes in Kami and Báimă are, however, distinct. The OT origins of these phonemes in Kami are discussed in §3. Báimă palato-alveolar affricates mostly developed from the original OT palato-alveolar affricates, whereas Báimă alveo-palatal affricates mostly developed from OT *Ky*- and *Kr*- clusters. (Capital *K*- and *P*- stand for velar and labial stop consonants, respectively.)

variously be present (for the initials /tʃh/ and /tɕh/) or neutralized (for the initials /tʃ/ and /tɕ/). Consider some examples (also as contrasted with retroflex affricates):

/ʰtʃa/ ‘to weigh’	/ʰtɕa/ ‘iron’	/ʰtʃsa/ ‘to fear, to be afraid of’
/ʰtʃhə/ ‘dog’	/ʰtɕhə/ ‘water’	/ʰtʃshə/ ‘bed’
/ʰtʃhue/ ‘thou’	/ʰtɕhue ʰtʃsa/ ‘to be tired’	/ʰtʃshue/ ‘to meet, to come across’
/ʌndʒu/ ‘quick’	/ʌndʒu-ʰwã/ ‘tail’	/ʌndʒu/ ‘to walk’
/ʰtɕi/ ‘one’ (no contrast with /ʰtʃi/)		/ʰtʃsi/ ‘monkey; to ask; to wrap around’
/ʰtɕə/ ‘ten; to scoop’ (no contrast with /ʰtʃə/)		/ʰtʃsə/ ‘knife; to wash; to write’
/ʰtʃõ/ ‘wall’ (no contrast with /ʰtɕõ/)		/ʰtʃõ/ ‘cold’
/ʌdzõ/ (no contrast with /ʌdzõ/) ¹² ‘bowels’		/ʌdzõ/ ‘village’

(3) Fricatives

Kami fricatives are pronounced at five different places of articulation: dental, palato-alveolar, alveo-palatal, velar(-uvular), glottal. Dental, palato-alveolar, alveo-palatal, and velar fricatives contrast in voicing (viz. /s/ vs. /z/, /ʃ/ vs. /ʒ/, /ç/ vs. /ʒ/, /x/ vs. /ɣ/). The voiceless glottal fricative /h/ does not have a voiced counterpart. Consider some examples of the former three voiceless-voiced pairs:

/ʌsa/ ‘to shed (tears)’	/ʌza/ ‘yak’ ¹³
/ʌʃ/ ‘bird; chicken’	/ʌʒ/ ‘spouse’
/ʰçĩ/ ‘wood’	/ʰʒĩ/ ‘later, hereafter’

I analyze the velar fricatives as having two allophonic realizations, viz. [x] and [χ], and [ɣ] and [ʒ]. The uvular pronunciation is common in the word-initial position before back vowels, whereas the velar pronunciation is common in the word-initial position with the front vowel /ɛ/, and in the second-syllable-initial position with all vowels.¹⁴ In the word-initial position, my main consultant accepts [x] and [χ] to be exchanged without a change or loss of meaning, e.g. [ʰxu]~[ʰχu] ‘food, cooked rice’. He also accepts [ɣ] and [ʒ] to be interchanged before /ɛ/ without a change or loss of

¹² There is, however, a prenasalized cluster with this phoneme, i.e. /ʰndzõ/ ‘Moso, Na people’.

¹³ Some words with the initial /z/ in the speech of my main consultant are pronounced with the initial /dz/ by my other consultants. For example: ‘shoes, boots’: main consultant /ʌza-ʰku/, other consultants: /ʌdza-ʰku/.

¹⁴ In fact, in the latter position, velar fricatives are the lenited allophones of the velar stops, e.g. /ʰsho-ʰxõ/ ‘thatched house’ (< /ʰkhõ/ ‘house’), /ʌdu-ʰɣɛ/ ‘white stone’ (< /ʌdu/ ‘stone’, /ʌka-ʰkɛ/ ‘white’), see §3.4.1-2 for discussion.

meaning, e.g. [ʎɛ]~[ʎɛ] ‘to shave’. In other instances (when followed by non-high non-front vowels), the word-initial voiced fricative is distinctly uvular, [ʁ], e.g. [ʁɔ] ‘rainbow’. In the absence of minimal pairs in my corpus, velar and uvular fricatives can in principle be treated as allophone phonemes. Nonetheless, I argue that uvular allophones deserve a special note, given that (1) uvular phonemes are infrequent in Tibetan dialects, (2) uvular phonemes are considered one of the characteristic features of Qiangic languages, and their presence in Kami is therefore of interest for the areal hypothesis pursued in this article, and (3) in Kami, the OT origins of uvular phonemes are distinct from those of velar phonemes. For this reason, I keep velar and uvular allophones distinct in transcriptions, transcribing them as perceived. For example:

/ʎa-ʎə/ ‘uncle’	/ʎra-ʎə/ ‘sheepfold, pen; downstairs’
/ʎɔ/ ‘to slaughter’	/ʁɔ/ ‘rainbow’

The glottal voiceless fricative is infrequent and occurs for the most part in the second-syllable-initial position, where, in some instances, it appears to derive from the lenition of /pʰ/ (see §3.4.1 for further discussion). For example:

/ʰhɔ-ʎku/ ‘to understand’
/ʰhu-ʰtha/ ‘diligent, conscientious’
/ʎphu-ʰha/ ‘boar, male pig’ (</phu-/ (bound root) ‘male’, /ʰpha/ ‘pig’)

The dental, the palato-alveolar and the alveo-palatal voiceless fricatives are further distinguished by aspiration, viz. /s/ vs. /sh/, /ʃ/ vs. /ʃh/ and /ç/ vs. /çh/. For example:

/ʎsa-ʰmɔ̃/ ‘edibles’	/ʎsha-ʰmɔ̃/ ‘nail, fingernail’
/ʎʃa-ʰmɔ̃/ ‘hen’	/ʎʃha-ʰmɔ̃/ ‘broom’
/ʰçɪ/ ‘louse’	/ʰçhi/ ‘to know (to do smth), to be able’

Similar to affricates, Kami fricatives exhibit a typologically unusual contrast between the palato-alveolar and the alveo-palatal places of articulation. Also similar to affricates, this contrast is essentially maintained before non-high non-front vowels (and also before the schwa in the case of /ʒ/ and /ʒ/), whereas it is neutralized before the high front vowel /i/. For example:

/ʎça-ʰpə/ ‘thing, goods’	/ʎʃa-ʰpə/ ‘feather, plumage’
/ʎʒa-ʰnbɔ/ ‘raw’	/ʎʒa-ʰwɔ/ ‘poplar’
/ʰʒə/ ‘four’	/ʰʒə/ ‘turquoise’

/ʎçɪ/ ‘little bird; sparrow’, /ʰkɔ̃-ʰʒɪ/ ‘footprint’
--

The typologically infrequent opposition between palato-alveolar and alveo-palatal affricates and fricatives has been attested only in the speech of my main consultant. In

the speech of the remaining three consultants, words with palato-alveolar affricates in the speech of my main consultant are pronounced with alveo-palatal affricates; whereas words with palato-alveolar fricatives in the speech of my main consultant are rendered as dental fricatives in the speech of my other consultants. For example:

‘dog’: main consultant: /^htʃhə/, other consultants: /^htʃhə/

‘bird, chicken’: main consultant: /^hʃə/, other consultants: /^hʃə/

Two exceptions to this generalization can be noted: ‘sour’ and ‘wolf’. In the speech of my main consultant, these words are pronounced with a palato-alveolar voiceless fricative initial: /^hʃu-^hkua/ and /^hʃɔ/, respectively. Instead of having an otherwise regular correspondence with the voiceless dental fricative, these words in the speech of my other consultants feature a distinct initial phoneme, /s/, i.e. /^hʃu-^hkua/ ‘sour’ and /^hʃɔ/ ‘wolf’. The elimination of the palato-alveolar series in the speech of other consultants and the inclusion of a new retroflex phoneme brings the inventory of consonantal phonemes in their speech to a total of 42, as summarized in Table 3:

Bilabial	Dental	Retroflex	Alveo-palatal	Velar	Glottal
p, ph, b	t, th, d			k, kh, g	
	ts, tsh, dz	tʂ, tʂh, dz	tʃ, tʃh, dz		
	s, sh, z	ʂ	ʃ, ʃh, z	x~χ, ɣ~ʁ	h
m, hm	n, hn		ɲ, hɲ	ŋ, hŋ	
	l, hl				
w	r, hr		j		

Table 3. *Kami consonant phonemes (Other consultants)*

(4) Nasals

Kami nasals are pronounced at the bilabial, dental, alveo-palatal, and velar places of articulations.

All Kami nasals show the correlation voiced-voiceless, as the (near) minimal pairs below show. The voiceless nasals, /hm, hn, hɲ, hŋ/ normally have homorganic voiced nasal onsets but voiceless, slightly aspirated release, i.e. respectively, [mm^h], [nn^h], [ɲɲ^h], [ŋŋ^h].¹⁵

/^hmã-^hŋgi/ ‘chin, jaw’

/^hhmã-^hχu/ ‘dinner’

/^hnã/ ‘sky, heaven’

/^hhnã/ ‘snivel, snot’

/^hɲi/ ‘eye’

/^hhɲi/ ‘to ripen’

/^hɲuẽ/ ‘to hunt’

/^hhɲuẽ/ ‘front’

(5) *Kami liquids and approximants*

¹⁵ Voiceless nasals in Shǐxīng (Chirkova 2009) and in Dōngwāng (Bartee, this volume) appear to have similar phonetic values.

There are four central approximants and two lateral approximants in Kami: /w/, /j/, /r/, /hr/, /l/, /hl/. The approximants /l/ and /r/ demonstrate a two-way contrast in voicing. /hr/ is restricted to the second-syllable-initial position. Consider these examples:

/w/	/Lwɔ/ ‘fox’, /Hwu-Hli/ ‘cat’
/j/	/Ljɔ/ ‘hand’, /Lju/ ‘year’
/l/	/Hlɔ/ ‘moon; musk deer’, /Hlu/ ‘bellyband, saddle girth’
/hl/	/Hhlɔ/ ‘water or mountain spirit’, /Hhlu/ ‘to deceive, to cheat’
/r/	/La-Hra/ ‘arak, strong liquor, alcoholic drink’, /Lgu-Hre/ ‘old’
/hr/	/Lpe-Hhra/ ‘Tibetan liquor’, /Lgu-Hhrě/ ‘doorsill, threshold’

2.2.2. Complex initials

Kami complex initials are prenasalized consonants and the cluster /hj/. Only voiced stops and affricates may be prenasalized.¹⁶

The prenasalized initials are seven voiced compound initials beginning with a homorganic nasal (here notated as *n*):

nb nd ndz ndz̥ ndʒ ndʒ̥ ng

Prenasalization is contrastive, as evidenced by the (near) minimal pairs below:

/Hbɔ̃/ ‘thick, rough, coarse’	/Hnbɔ̃/ ‘large bamboo basket’
/Hdɛ/ ‘to brush; to whet (a knife)’	/Hndɛ/ ‘to shiver, to tremble’
/Ldzui/ ‘to herd, to drive (animals)’	/Lndzui/ ‘finger’
/Ldzɔ̃/ ‘village’	/Lndzɔ̃/ ‘to have one’s fill’
/Ldʒɔ̃/ ‘intestines, bowels’	/Lndʒu/ ‘quick’
/Hdzi/ ‘heavy’	/Lndzi/ ‘penis’
/Hgu/ ‘door’	/Hngu/ ‘head’

The cluster /hj/ occurs infrequently, e.g. /Hhjo/ ‘god, Buddha’, /Hhjã/ ‘shoe’, /ja-Hhjo/ ‘tool, instrument’, /Hma-Lhjũ/ ‘to drop, to fall’.

Seen in the context of Khams dialects (Zhāng 1993; Hú 1991: 191-198; Gésāng and Gésāng 2002: 73-82), Kami consonant phonemes for the most part confirm to the characteristic tendencies displayed by the group, namely: (1) stops, affricates, fricatives, and nasals all contrast in voicing; (2) voiceless stops, affricates and fricatives also contrast in aspiration (with the exception of /x~χ/); (3) consonant

¹⁶ I note, however, one exception with a prenasalized voiceless aspirated stop: /Hta-Hnthui/ [Hta-Hŋthui] ‘reins’.

clusters are by and large restricted to prenasalized clusters (in Kami, with an additional cluster /hʃ/).

On a more erratic side, Kami (1) has a large number of consonantal phonemes, (2) exhibits the typologically unusual opposition between the palato-alveolar and the alveo-palatal places of articulation, and (3) has rather unusual uvular allophones of velar fricatives.

2.3. Rhymes

Kami has ten oral vowel phonemes, six nasal vowel phonemes, and five diphthongs (including one nasal diphthong, viz. /uẽ/), in all 21 finals. The vowel phonemes are charted in Table 4.

oral	i	e	ɛ	a	ə	ʊ	u	ʏ	o	ɔ
nasal	ĩ	ẽ		ã		ũ	ũ			õ
diphthong	ei, ui	ue		ua						
nasal diphthong		uẽ								

Table 4. Kami rhymes (Main consultant)

After palatal initials, phonemes /u/, /ũ/, /ui/, /ue/, and /uẽ/ are phonetically [y], [ỹ], [yi], [ye], and [yẽ], respectively. For example, /ɭju/ [ɭjy] ‘year’, /ɭhɲỹ-ɰwã/ [ɭhɲỹ-ɰwã] ‘bamboo’, /ɭɲue~ɰɲue/ [ɭɲye~ɰɲye] ‘two’.

Of the above phonemes, /a/, /i/, /u/, /ɔ/ and /ue/ have been attested in the word-initial position. Oral, nasal and diphthong phonemes in Kami are discussed presently:

(1) Oral vowels

The phoneme /ɔ/ has two allophonic realizations in free variation /ɔ/ and /ɑɔ/, respectively. /o/ is phonetically [ou], /ʊ/ is phonetically [ʊʏ], and /ʏ/ is phonetically [ʏʷ].

Close and close-mid back vowels contrast in rounding, i.e. /u/ vs. /ʊ/, and /o/ vs. /ʏ/. For example:

/u/: /ɰtu/ ‘to cut off’, /ɰdu/ ‘stone’, /ɰku/ ‘to carve, to engrave’, /ɰsu/ ‘tooth’

/ʊ/: /ɰtʊ/ ‘poison’, /ɰdʊ/ ‘to poke, to stab’, /ɰngu ɰkʊ/ ‘to nod’, /ɰsw/ ‘to bark’

/o/: /ɰto/ ‘to be hungry’, /ɰtha-ɰko/ ‘vertical’, /ɰso/ ‘fate’

/ʏ/: /ɰthʏ/ ‘fireplace, stove, hearth’, /ɰkʏ/ ‘to cover’, /ɰsʏ/ ‘shallow’

The mid vowels contrast two degrees of vowel height: /e/ vs /ɛ/ and /o/ vs /ɔ/, as in the following examples:

/e/: /ɰte/ ‘to drive away, to chase’, /ɰde/ ‘plate’, /ɰke/ ‘voice’, /ɰse/ ‘to kill’

/ɛ/: /^htɛ/ ‘flag; to win’, /^hdɛ/ ‘to rub, to smear’, /^hkɛ/ ‘fat (meat)’, /^hsɛ-^hwɔ/ ‘new’
 /o/: /^hto/ ‘to be hungry’, /^htha-^hko/ ‘vertical’, /^hso/ ‘fate’
 /ɔ/: /^htɔ/ ‘horse’, /^hndɔ/ ‘arrow’, /^hkɔ/ ‘gutter; pillar’, /^hʒu-^hsɔ/ ‘widow’

Here are examples of the remaining oral vowel phonemes:

/i/: /^htɕi/ ‘steelyard’, /^hdi/ ‘cooking pot’, /^hki/ ‘thread’, /^hsi/ ‘bright’
 /ə/: /^hpə-^htə/ ‘calf’, /^hndə/ ‘to be; to sit; to dwell’, /^hɕi-^hkə-^hrə/ ‘fine’, /^hsə-^hpɔ/ ‘belly’
 /a/: /^hta/ ‘tiger; mark’, /^hda/ ‘to lick’, /^hka (ɕi)/ ‘(one) cent’, /^hsa/ ‘to burn; hot’

(2) Nasal vowels

The phoneme /ũ/ is unfrequent. /ã/ is phonetically [ã̃]. Consider the following examples of nasal vowels:

/ĩ/: /^htĩ/ ‘above’, /^hdĩ/ ‘to fly’, /^hɕĩ/ ‘wood’
 /ẽ/: /^htẽ/ ‘cover, quilt’, /^hdẽ/ ‘seven’, /^hkẽ/ ‘to chase after’, /^hsẽ/ ‘to breast-feed’
 /ã/: /^htã/ ‘tense’, /^hdã/ ‘to tie up, to bind up’, /^hjei-^hkã/ ‘difficult, hard’, /^hsã/ ‘otter’
 /ũ/: /^hthũ/ ‘to drink’, /^hduũ/ ‘to hit’, /^hkuũ/ ‘to hide something’, /^ha-^hsuũ/ ‘aunt’
 /ũ/: /^hdũ/ ‘weed, grass’, /^hsuũ/ ‘three’
 /õ/: /^htõ/ ‘bear’, /^hdõ/ ‘face’, /^hkõ/ ‘foot’, /^hsõ/ ‘hemp’

(3) Diphthongs

In terms of relative sonority of the two sounds involved, Kami diphthongs distinguish between (1) two falling (or descending) diphthongs, namely /ei/ (/ej/) and /ui/ (/uj/), and (2) three rising (or ascending) diphthongs, namely /ue/ (/we/), /uẽ/ (/wẽ/), /ua/ (/wa/).

The diphthong /ua/ co-occurs only with velar stops, e.g. /^hgua-^hʃu/ ‘yak’, /^hkhua-^hla/ ‘(wooden) basin’, the suffix /kua/ in some adjectives, e.g. /^hsa-^hkua/ ‘hard’. Marginally, there is also the diphthong [ie] ([je]), attested in a handful of words, e.g. [^hkie] ‘ladder’, [ɕhie] ‘back, behind, outside’.

Consider examples of the remaining diphthongs:

/ei/: /^htei/ ‘that, there’, /^hkei/ ‘clothes’, /^hɕei/ ‘plow’
 /ui/: /^hmo-^hthui/ ‘matches’, /^hphɔ-^hdui/ ‘blister’, /^hsui/ ‘side’
 /ue/: /^hpha-^htue/ ‘to disappear’, /^hja-^hkue/ ‘bracelet’, /^hʃue/ ‘to use’
 /uẽ/: /^hnduẽ/ ‘to read out loud’, /^hkuẽ/ ‘to wear’, /^hsuẽ-^hlu/ ‘pea’

The inventory of vowel phonemes in the speech of my main consultant is again the most elaborated among all surveyed consultants. In the speech of my other

consultants, /ei/ merges with /e/, and /ü/ merges with /õ/. This yields the inventory of 19 phonemes, as charted in Table 5.

oral	i	e	ɛ	a	ə	u	ʊ	ʏ	o	ɔ
nasal	ĩ	ẽ		ã			ũ			õ
diphthong	ui	ue		ua						
nasal diphthong		uẽ								

Table 5. *Kami rhymes (Other consultants)*

One final point concerning vowel phonemes is that in the majority of cases, vowel phonemes remain unchanged whether in monosyllabic words or, in the same root, in the first syllable of a disyllabic word. One notable exception is /ɔ/, which, in the latter position, frequently changes to /a/. For example, /ʌʃɔ/ ‘bird’ vs. /ʌʃa-ʰpə/ ‘feather, plumage’.

Seen against the background of the best-documented Khams dialects (Gésāng 1989; Hú 1991: 192; Qú 1991: 7, 16, 88-89; Zhāng 1993: 303-304; Gésāng and Gésāng 2002: 76-79), Kami vowel inventory again confirms most features that are held as characteristic of the Khams group. In its more extended system (that of my main consultant), Kami has five vowels (a, i, u, e, o). It also has many innovative vowels (e.g. /ɛ/ and /ə/) and many diphthongs. Vowel length is not contrastive in this dialect.

On a more erratic side, Kami does not make the distinction between the front and the back *a*: /a/ vs. /ɑ/, maintained by many Khams dialects (e.g. Gésāng and Gésāng 2002: 77). Furthermore, Kami has an unusually large inventory of vowel phonemes. In addition, a striking feature of this dialect is that it does not have the phonemic glottal stop in the coda position.

2.4. Tone and prosodic organization

Kami is a tonal language with the phonological word as the domain for the contrastive tones. Kami has a simple tonal system, contrasting two tones in monosyllabic words: High vs. Low.¹⁷ This robust opposition is confirmed in the speech of all my language consultants. The precise phonetic values of the tones, on the other hand, vary among the consultants. The opposition is (1) that between a low rising (13) and a high level tone (55) in the speech of my main consultant, (2) that between a low rising (13) and a high falling (53) tone in the speech of two other consultant, and (3) that between a mid-level (33) and a high falling (53) tone in the speech of the remaining consultant. The binary contrast is here treated as the register opposition, notationally, /L/ vs. /H/.¹⁸ Consider these examples:

¹⁷ In addition a small number of monosyllabic roots with voiced initials have unstable tones, e.g. /ʌŋ ue-ʰŋue/ ‘two’, /ʌdẽ-ʰdẽ/ ‘seven’ (to be further discussed in §3.3).

¹⁸ In many Tibetan dialects, when uttered in isolation, low-register syllables are characterized by a rise in pitch, whereas high-register syllables are characterized by a fall in pitch (Sun 1997: 491, 499). Low register roots and words in Kami are here analyzed as combining a lexical low tone and a boundary H tone, which is added to the (phonological) word post-lexically. The addition of post-lexical H tone stems from the prohibition of all L-words in this language. On monosyllabic phonological

/Lgu/ ‘to kneel’	/Hgu/ ‘to divide, to split’
/Ltu/ ‘poison’	/Htu/ ‘to spurt, to spray’
/Ltʂa/ ‘precipile, cliff’	/Htʂa/ ‘to fear, to be afraid of’
/Lɕi/ ‘field, land’	/Hɕi/ ‘wood, tree’
/Lɲi/ ‘fire’	/Hɲi/ ‘eye’

Phonological words of more than one syllable in length contrast three tonal patterns, which are realized as sequences of level tones, one on each syllable, namely:

- (1) /H-H/, e.g. /Hpha Hχɔ/ ‘to slaughter a pig’, /Hti-Hdzi/ ‘wine pot’
- (2) /L-H/, e.g. /Lpha-Hχɔ/ ‘pork’, /Lpha-Hgue/ ‘wild pig’, /Lti-Hdzi/ ‘cigarette’
- (3) /H-L/, e.g. /Hpha-Lχɔ/ ‘to slaughter’, /Hpha-Lgue/ ‘to turn one’s head, to turn round’

Sequences of more than two syllables fall into the following two kinds of situations:

- (1) Lexical words of over two syllables may have one of these three tone patterns on disyllabic words extended over the entire word:

/H...H/, e.g. /Hfa-Hbu-Hlo/ ‘beige, light blue-grey’

/L...H/, e.g. /Lɛ-Lse-Hɕi/ ‘mulberry tree’

/H...L/, e.g. /Hkhɔ Lma-Ltsɔ/ ‘to shut the mouth’, /Hpi Ltɔ-Lso/ ‘log raft’

- (2) On the other hand, more frequently, compounds of over two syllables have one of the three tonal patterns on the leftmost two syllables. The remaining syllables lose their tones and are treated here as extrametrical syllables. Phonetically, these syllables are realized on a low pitch. They are here analyzed as supplied with a phonological L tone before the phonetics. For example, /Lnbu-Hru Ltɕɔ/ ‘scented tea’ (< /Lnbu-Hru/ ‘flower’, /Ltɕɔ/ ‘tea’); /Ldʒa-Hɣɛ Lxu-Lwɔ/ ‘traditional Tibetan hat’ (> /Ldʒa-Hɣɛ/ ‘India’, /Lxu-Hwɔ/ ‘hat’).

In addition, even polysyllabic prosodic domains can be divided into sequences of two syllables, each with its own tonal pattern, e.g. /Hwu-Hli# Lndzu-Hwã/ ‘reed, cattail’ (> /Hwu-Hli/ ‘cat’, /Lndzu-Hwã/ ‘tail’), /Hku-Hwɔ# Lza-Hku/ ‘leather shoes’ (> /Hku-Hwɔ/ ‘leather’, /Lza-Hku/ ‘shoes, boots’). This suggests that Kami has a strong preference towards disyllabicity in its prosodic organization, with the disyllabic foot being the building block for the prosodic structure of Kami.

Altogether, lexical words are characterized by stable tone patterns, which are lexically encoded, whereas the tone pattern of a compound or a group of words making up one prosodic domain is characterized by a certain degree of variability.

words with /L/ tone, both the lexical L tone and the boundary H tone crowd on the only syllable there is, e.g. /Lɲi/ ‘fire’. On phonological words of two syllables or more, the boundary tone is assigned to the final syllable of the word, e.g. /Lɲi Hnbɛ/ ‘to catch fire, to be on fire’ (< /Lɲi/ ‘fire’, /Lnbɛ/ ‘to catch’).

This variability is one of the sources for the dissimilarity in tonal patterns between the consultants. For example, the word ‘dragonfly’ was recorded as /^Htɕhə-^Lnbə ^Lgu-^Hdū/ for my main consultant, and as /^Htɕhə-^Hnbə ^Lgu-^Ldū/ for another consultant.

Overall in Tibetan, as argued by Sun (1997: 489), the primary register contrast is borne by the word-initial syllable, whereas tone is neutralized on all remaining syllables. Kami appears to confirm, in part, to this generalization. The tonal pattern of at least some polysyllabic words can be analyzed as conditioned by the lexical tone of the first syllable. If the tone of the first syllable is /H/, the tone of all following syllables will also be H. If the tone of the first syllable is /L/, the tone of all following syllables will also be L. In addition, in the latter case, the final syllable of the polysyllabic domain will carry the post-lexical H tone (see footnote 18).¹⁹ Here are some examples:

/^Hkɔ̃/ ‘foot’ + /^Hzi/ ‘trace’ > /^Hkɔ̃-^Hzi/ ‘footprint’
 /^Hkɔ̃/ ‘foot’ + /^Lndzui/ ‘finger’ > /^Hkɔ̃-^Hndzui/ ‘toe’
 /^Ljo/ ‘hand’ + /^Hzi/ ‘trace’ > /^Lja-^Hzi/ ‘hand print, finger print’
 /^Lza/ ‘yak’ + /^Hɕɔ/ ‘meat’ > /^Lza-^Hɕɔ/ ‘yak meat’

Notably, this analysis has many counterexamples, chiefly resulting from a clear preference of my main consultant for the /L-H/ tonal pattern on disyllabic nouns, regardless of the tone of the word-initial syllable. For example:

/^Hpha/ ‘pig’ + /^Hɕɔ/ ‘meat’ > /^Lpha-^Hɕɔ/ ‘pork’ (expected /^Hpha-^Hɕɔ/)
 /^Hto/ ‘horse’ + /^Lro/ ‘pen, ring’ > /^Lto-^Hro/ ‘horse corral, stable’ (expected, /^Hto-^Hro/)

Furthermore, the analysis of the tonal pattern in polysyllabic domains as conditioned by the tone of the word-initial syllable falls short of explaining the origin of the third tonal pattern, viz. /H-L/. This tonal pattern by and large occurs on disyllabic verbs (formed with a directional prefix) and verb-object compounds. If the contrastive tonal patterns on polysyllabic domains were directly related to the two lexical tones, disyllabic verbs formed with directional prefixes would exhibit two distinct tonal patterns, correlated with the two contrastive lexical tones of the verb roots, with the surface tones of toneless verbal prefixes conditioned by the lexical tone of the verb root. (Kami verbal prefixes are here analyzed as lexically unspecified for tone, as elsewhere in Tibetan.) This is, however, not the case, as the tonal pattern of disyllabic verbs in the speech of my main consultant is in most instances /H-L/, irrespective of the lexical tone of the root.²⁰ For example:

¹⁹ Formally, this process (also shared with the neighboring Shīxīng language, Chirkova and Michaud 2009) can be accounted for as left-to-right tone spreading. In this analysis, tonal patterns in polysyllabic domains are phonetic implementation of the lexical H and L tones on monosyllables. In other words, the /H-H/ and the /L-H/ tonal patterns are the extension of the lexical tones /H/ and /L/, respectively. The mode of association of tones to syllables as one-to-one mapping of tones to available syllables, followed by the spreading of the last tone and the addition of a boundary H tone, which cannot spread and which is added to the final syllable of the domain post-lexically.

²⁰ In careful speech, the verb root may be pronounced with the etymological tone on the verbal root and the high tone on the prefix, e.g. [pha⁵⁵-thē⁵⁵], /^Hpha-^Hthē/, ‘to pull up’, [pha⁵⁵-ba¹³], /^Hpha-^Lba/, ‘put down’.

/ ^H thē/ ‘to pull’	/ ^L ʌ/ ‘to put, to place’
/ ^H ja- ^L thē/ ‘to pull up’	/ ^H ja- ^L ʌ/ ‘to put upward’
/ ^H ma- ^L thē/ ‘to pull down’	/ ^H ma- ^L ʌ/ ‘to put down’
/ ^H tsha- ^L thē/ ‘to pull towards oneself’	/ ^H tsha- ^L ʌ/ ‘to put near oneself’
/ ^H pha- ^L thē/ ‘to pull away from oneself’	/ ^H pha- ^L ʌ/ ‘to put away from oneself’

In some cases, the tonal pattern of a dissyllabic verb appears to be lexically marked, and again unrelated to the lexical tone of the verbal root. For example:

/^Hma-^Lɲi/ ‘to fall asleep’ (> /^Lɲi/ ‘to sleep’) vs. /^Lma-^Hɲi/ ‘to swallow (down)’ (> /^Lɲi/ ‘to swallow’)

Altogether, I note that in verbs formed through prefixation, the syllables carrying /L/ tone differ from those carrying /H/ tone in prominence (duration and intensity). In other words, the syllable carrying /H/ tone is longer and louder than the syllable with /L/ tone in the same word. The distinction in prominence is here taken as indication of the stressed status of the syllable carrying the H tone and the unstressed status of the toneless prefixes carrying the phonological L tone.²¹

To account for these observations, I propose to analyse the prosodic organization of Kami as combining (1) a word-tone system, whereby the primary register contrast is conditioned by the tone of the word-initial syllable, as widespread in Tibetan dialects, with (2) a system of stress accent, iambic, or right-prominent on nominal constructions, and trochaic, or left prominent on verbal constructions, with some instances of lexically marked stress placement. This combination of these two competing strategies in the speech of my consultant is another source for dissimilarities in tonal patterns between my consultants. For example, the word ‘summer’ is /^Lʒɛ-^Hkhɔ/ for my main consultant (i.e. with an iambic nominal stress pattern) and /^Hzɛ-^Hkhɔ/ for my other consultants (the tone pattern of this word is conditioned by the lexical tone of the first syllable, see §3.3).²²

Seen in an areal context, the prosodic system of Kami is similar to those of neighboring Qiangic languages, all of which, to a different extent, combine a tone system with a stress system. The prosodic system of Kami is particularly close to that of its immediate geographic neighbor Shǐxīng (Chirkova and Michaud 2009). The important dissimilarity between the two languages is the location of stress, which is domain-initial in Shǐxīng and variable in Kami, depending on the syntactic organization of the expression.

²¹ The stressed-unstressed distinction, with the respective H-L tonal correlation, was frequently observed in word elicitation. This concerns instances in which one monosyllabic (lexical) word is contrasted with the remaining words in one polysyllabic tonal domain, as in the following example: /^Hsū# ^Ltɕi ^Lɲue ^Hsū/ ‘three, as in one, two, three’ (< /^Htɕi/ ‘one’, /^Lɲue~^Hɲue/ ‘two’, /^Hsū/ ‘three’).

One additional observation is that an unstressed free root is longer in duration than an unstressed bound root. For example, the pair /^Lpha-^Hri/ ‘to tear up’ (< /pha-/ (bound root) directional prefix, /^Hri/ ‘to tear up’) vs. /^Lpha-^Hri/ ‘flour for feeding pigs’ (< /^Hpha/ ‘pig’, /^Hri/ ‘flour’) is not homophonous.

²² A system of stress accent has been described for some Amdo dialects, and Zhongu, Sun (2003: 778).

Seen against the background of Kham dialects, Kami has a rather impoverished tonal system. For example, Bātáng has been described as having four tones on monosyllables, namely (1) high even (high long, 55), (2) high falling (high short, 53), (3) low rising (low long, 13), (4) low rising-falling (low short, 23), and (5) an additional light tone (11) on extrametrical syllables (Gésāng 1989: 350-351).²³

A similar tonal system with four contrastive tones on monosyllables, contrasting two level and two contour tones, has also been proposed by Gésāng and Gésāng (2002: 107-110) for Dégé. However, Häslér (1999: 29) reports that in her acoustic study of the tones in the Dégé dialect, she was unable to identify contour differences between the four tones as suggested in the Chinese literature. She furthermore suggests that the distinctive features of the prosodic organization of Dégé are rather syllable length and two register tones, High and Low. The same analysis in terms of syllable length and register distinction is also likely to be applicable to the prosodic organization of Bātáng. In this context, the two conspicuous features of the prosodic organization of Kami are (1) the absence of contrastive length, and (2) the presence of a stress-based system.

3. Phonological history

This section presents a phonological history of Kami recovered through a comparison with the phonological structure of OT.

Similar to other Khams dialects, the extremely complicated syllable structure of OT, viz. (b)(Cp)C(M)V(C)(s/d), was depleted to evolve in Kami into a simpler syllable structure of the (C)(C)V(V) type.²⁴ The major developments include gradual disappearance of both prefixal consonants and consonantal codas (conceivably, through the processes of weakening and assimilation, that are likely to have proceeded through the consecutive stages of devoicing, spirantization, loss of obstruency, and attrition). The elision of prefixal consonants led to the development of high tone, whereas the disappearance of consonantal codas led to the development of innovative vowels and diphthongs.

One inevitable consequence of the drastic simplification of the OT syllable canon is extensive homophony in Kami monosyllabic words. For example, the words /^htsu/ and /^htsi/ have three distinct meaning each. /^htsu/ (1) ‘top of the head’, <gtsug>; (2) ‘to stick, to set a plant in the ground; to stab’, <btsugs>; (3) ‘to squat’, <tsog?>. /^htsi/ (1) ‘monkey’, <spre’u>, (2) ‘to ask’, <’dri>, (3) ‘to wrap around’, <dkri>.

²³ For example: [ka⁵⁵] <ka ba> ‘pillar’, [ka⁷⁵³] <bkag> ‘to hinder’, [ka¹³] <gar> ‘where’, <gag> [ka²²³] ‘to obstruct, to hinder’ (Gésāng 1989: 350-352, 354-356).

²⁴ Within the OT syllable canon, (b)(Cp)C(M)V(C)(s/d), according to convention, I distinguish between the following phonological slots: Cp: prefixal consonants, *g-*, *d-*, *b-*, *r-*, *l-*, *s-*, *n-* (WT *a-chung*), of which *r-*, *l-* and *s-* can further be combined with the pre-prefixal consonant *b-*; C: root initial, which can be filled by any WT consonant; M: medials *-w-*, *-y-* and *-r-*; V: nucleus vowel, which may be filled by any WT vowel; C: consonantal codas, *-b-*, *-d-*, *-g-*, *-m-*, *-n-*, *-ŋ-*, *-r-*, *-l-*, *-s-*; of which grave consonants may further combine with *-s-*, and coronal consonants may further combine with *-d-*. Overall, the development of OT consonantal clusters in the prefixal position (i.e. *bCp-*) and in the coda position (i.e. *-Cs/d*) in Kami is that of a simple consonantal prefix and a simple consonantal coda, respectively. For example, <brgya> ‘hundred’ /^hdʒo/ vs. <rgya> /^hdʒo/; <bzang> /^hzõ/ ‘good’ vs. <zangs> /^hsõ/ ‘copper’. For this reason, OT consonantal clusters in the prefixal position and in the coda position need not concern us.

3.1. History of Kami onsets

The main developments of OT onsets were conditioned by the presence or absence of OT prefixes. Unprefixed voiceless stops and affricates remained unchanged and high-toned, whereas unprefixed voiceless fricatives became high-toned and aspirated. Unprefixed voiced obstruents became devoiced and low-toned.

The major trend for root initials with oral prefixal consonants (*g-*, *d-*, *b-*, *r-*, *l-*, *s-*) consisted for these prefixal consonants to disappear, irrespective of their voicing or of that of the root initial. In addition, the dental spirant prefix *s-* conditioned the development of voiceless reflexes of nasal initials. Before being elided, the prefixes had acted as a buffer against devoicing of the following root initials, yielding modern voiced obstruents and sonorants. Nasal prefixal consonants (*m-* and *n-*), on the other hand, mostly gave rise to modern prenasalized clusters. Altogether, these are common Khams developments, e.g. Hú (1991: 191-198), Zhāng (1993), and Gésāng and Gésāng (2002: 72-91). (A summary table of Kami initial consonants and their OT origins is provided in Appendix 1.)

3.1.1. OT simple initials

3.1.1.1. OT obstruents

OT obstruents include bilabial, dental, velar, and glottal stops; dental and palato-alveolar affricates, and dental, palato-alveolar, and glottal fricatives.

OT syllables with a glottal stop onset (corresponding to syllables with the *a-chen* as their base in WT, e.g. Beyer 1992: 57, footnote 3) are realized as vowel-initial syllables in Kami, preceded by a non-phonemic glottal stop, unmarked in the transcriptions. For example:

<a ma> /^ha-^hmǝ/ ‘mother’

<o ma> /^hu-^hǝ/ ‘milk’

(1) Stops and affricates

OT stops and affricates remain unchanged in Kami. Consider some examples:

<ba> /^hpɔ/ ‘cow’

<pi wang> /^hpi-^hwǝ/ ‘guitar, lute, violin’

<spu> /^hpə/ ‘(animal) hair, fur’

<phag> /^hpha/ ‘pig’

<dar> /^htɛ/ ‘flag’

<rdo> /^hdu/ ‘stone’

<rta> /^htɔ/ ‘horse’

<stag> /^hta/ ‘tiger’

<thab> /^hthɣ/ ‘fireplace, stove, hearth’

<ga> /^lka~^lkɛ/ ‘where’
 <sga> /^hgɔ/ ‘saddle’
 <ka> ‘pillar’, <rka> ‘gully, gutter’, both /^hkɔ/
 <kha> /^hkhɔ/ ‘mouth’

 <rdzong> /^hdzɔ̃/ ‘county’
 <tshang> /^htshɔ̃/ ‘household, family; nest’
 <rtsa> /^htsɔ/ ‘root’

In addition, the OT initial *dz-* at times develops into /z-/ in Kami, e.g. <rdza ma> /^lza-^hɔ̃/ ‘clay baking pot’, <rdzi ma> /^lzə-^hɔ̃/ ‘eyebrow; eyelash’.²⁵

<ja> /^ltɕɔ/ ‘tea’
 <ljid> /^hdzi/ ‘heavy’
 <lcags> /^htɕa/ ‘iron’
 <bcu> /^htɕə/ ‘to scoop up, to ladle out’
 <cha> /^htɕhɔ/ ‘pair’

(2) *Fricatives*

OT unprefixal voiceless dental fricative became aspirated in Kami, whereas its voiced counterpart, *z-*, became devoiced. Prefixal dental fricatives preserved the original quality of the root initial (in terms of voicing and aspiration) and became high-toned. Consider some relevant Kami examples:

<zag> /^lsa/ ‘to shed (tears)’
 <bzi> /^lzə/ ‘to be drunk’
 <sa> /^hshɔ/ ‘earth, land’
 <bsad> /^hse/ ‘to kill’

Some exceptions to this altogether pervasive change include <so> /^hsu/ ‘tooth’ and <so ma> /^hsɔ̃/ ‘hemp’.

The development of OT palato-alveolar fricatives is extremely variegated among Khams dialects, with at least two distinct paths of development (in all cases, prefixal OT fricatives preserve the original voicing and aspiration quality of the initial):

(1) velar fricatives, as in Dégé (Häsler 1999: 33, 38) and Bātáng (Gésāng 1989: 339)

²⁵ It is conceivable that some words of unclear Tibetan etymology that exhibit the speaker-dependent *dz~z* variation, as in /^ldza-^hku/~^lza-^hku/ ‘shoes, boots’, may ultimately derive from etymons with the OT initial *dz-*.

(2) retroflex fricatives, as in dialects of Dìqìng Prefecture, represented here by Zhōngdiàn (Lù 1990, Wáng 1996, Hongladarom 1996), and Dōngwāng (Bartee, this volume)

In both cases, the development may be complicated by the process of palatalization of the initial before the original OT high front vowels *or* before modern high front vowels. This process may be phonologically conditioned, as is the case in some Dégé dialects that have fronted and palatalized allophone phonemes before high vowels, and velarized allophone phonemes before back vowels (Häsler 1999: 15-16; Gésāng and Gésāng 2002: 97). Alternatively, such a split may be phonemicized, as in Zhongu Tibetan 熱務溝 <zho ngu> (Sun 2003: 782). In this dialect, OT palato-alveolar spirants turned into retroflexes in most phonological environments, except before modern high front vowels, where they remained palato-alveolar.

The developments of OT palato-alveolar fricatives in Kami are characterized by a similar phonemic split, which turned the original OT palato-alveolar fricatives into alveo-palatal fricatives before the original OT high front vowels and into uvular fricatives elsewhere. Notably, in the latter environment, viz. before non-high non-front vowels, Kami reflexes of OT voiceless aspirated palato-alveolar fricatives are identical to those of OT voiceless plain palato-alveolar fricatives.²⁶ For example:

<zhim> /^hçẽ/ ‘tasty, delicious’

<bzhi> /^hzə/ ‘four’

<shi> /^hçhə/ ‘to die’²⁷

<zho> /^hxu/, [ˀxu]~[ˀχu] ‘yoghurt’

<gzhu> /^hʁə/, [ˀʁə] ‘bow’

<sha> /^hχɔ/, [ˀχɔ] ‘meat’

<bsha'> /^hχɔ/, [ˀχɔ] ‘to slaughter’

The retroflex reflexes of OT palato-alveolar fricatives in the dialects of Dìqìng Prefecture, together with some sporadic instances of affrication of uvular initials in Kami, e.g. /^hχa/ [ˀχ^aa] <zhaŋ> ‘night’, suggest that there was some rhotic quality present in the original OT sound.²⁸ A Qiangic neighbour of Kami, Lizu, evidences a parallel development, whereby uvular phonemes in the Mǔlǐ dialect of Lizu correspond to retroflex phonemes in another dialect of this language (spoken in the county of Gānlù) (Chirkova 2008). A similar (conceivably, areal) motivation underlying the development of uvular rather than retroflex reflexes in Kami and Lizu may be called for.

²⁶ In addition, the ongoing process of palatalization before modern high front vowels continues to transform some words with uvular initials into those with alveo-palatal or velar initials. For example: <bshad> /^hçe/ ‘to speak’, <shad> /^hçe/ ‘to comb’, <bzhar> /^hçɛ/, [ˀçɛ]~[ˀʁɛ] ‘to shave’.

²⁷ Some exceptions include <shig> /^hçi/ ‘louse’, <shing> /^hçĩ/ ‘wood’, <phyi> /^hçj/ ‘to be late’, in that these words lack aspiration.

²⁸ For instance, these development of OT palato-alveolar fricatives in Kami may tentatively be taken as evidence of the postinitial *-r-* occurring after palato-alveolar fricatives in Proto-Tibetan (Beyer 1992: 86).

Uvulars have been attested in many peripheral Khams dialects spoken in the multi-lingual historical border areas between Tibet and China, that are currently known as the “ethnic corridor” of Sichuān and Yúnnán provinces. For example, Yǎjiāng 雅江 <nyag chu kha>, Acuo (2008); Shibàzi 石壩子 <kun sngon> (Sōngpān 松潘), Huá and Gǎzàngtā (1997); Zhongu (Sōngpān), Sun (2003: 782-783). Consequently, as argued by Jackson Sun (2003: 782), it remains a possibility, that some instances of these uvulars represent retention of ancient consonantal contrasts which predate standard Written Tibetan. In his discussion of Zhongu uvular phonemes, Sun (2003: 783-783) proposes three test words that often contain uvular onsets in the Tibetan dialects that have phonemic uvulars, namely: ‘snow’, ‘bitter’, and ‘understand’. Notably, the three words do not have uvular reflexes in Kami, viz. /^hkha-^hwɔ/ ‘snow’, /^hkha-^htu/ ‘bitter’, and /^hhɔ-^lku/ ‘to understand’. Neither do the same test words have uvular reflexes in the Qiangic languages of Mùlǐ: Shǐxīng, Púmǐ, Lizu, and Nàmùzī, with the only exception of ‘bitter’, Shǐxīng /^hqhao-^lsǔ/, Nàmùzī /^luo³¹-^qha³¹/. At the same time, what appears to be a common areal feature underlying the velar-uvular distinction in Kami and in the Qiangic languages of Mùlǐ is a pronounced tendency to uvularize velars before low vowels, possibly in connection with some rhotic quality of the original rhyme, cf. Púmǐ (Lù 2000: 43-44), Lizu (Sūn 1982: 243). This feature may have been phonemicized in some varieties, giving rise to a full-fledged uvular series, e.g. Shǐxīng (Huáng and Rénzēng 1991).

Finally, OT glottal fricative (WT *h-*) remains unchanged in Kami. For example:

<ha ko> /^hhɔ-^lku/ ‘to understand’

<hur thag> /^hhu-^ltha/ ‘diligent, conscientious’

<ham> /^hpha-^hhã/ ‘to become meldewed’ (with the directional prefix /^hpha/ ‘outward’)

3.1.1.2. OT sonorants

OT sonorants include four nasals (*m*, *n*, *ɲ*, and *ŋ*), two liquids (*r*, *l*), and two glides (*w*, *j*).

(1) OT nasals

OT simplex nasals were generally kept as such in Kami, unless preceded by the prefixed *s-*, which transformed them into voiceless nasals. This appears to be a common development in Khams dialects, all of which have symmetrical pairs of voiced and voiceless nasals at four places of articulation (e.g. Bātáng, Gésāng 1989: 339; Dégé, Häsler 1999: 44; Dōngwāng, Barte, this volume). This feature is therefore promoted to one of the characteristic traits of the entire group (e.g. Gésāng and Gésāng 2002: 74). For example:

<ma mgal> /^hmã-^hŋgi/ ‘chin, jaw’

<gnam> /^hnã/ ‘sky, heaven’

<mig> /^hɲi/ ‘eye’

<rngon> /^hɲuẽ/ ‘to hunt’

<smag? bshos?> /^hhmã-^hχu/ ‘dinner’

<snabs> /^hhnã/ ‘snivel, snot’

<smin> /^hhɲi/ ‘to ripen’

<sngon> /^hhɲuẽ/ ‘front’

(2) OT liquids

The development of OT *l-* was conditioned by the presence or absence of a prefixal consonant. Unprefixed *l-* has undergone a relatively unusual development, whereby it changed to Kami /j/, e.g.:

<lag> /^hɔ/ ‘hand’

<lo> /^hju/ ‘year’

On the other hand, when preceded by an OT consonantal prefix, the root initial *l-* was transferred into Kami /l/. For example:²⁹

<gla> /^hlɔ/ ‘musk deer’

<glo> /^hlu/ ‘bellyband, saddle girth’

While until recently held as infrequent and unusual, the change from OT *l-* to *j-* in unprefixed syllables is being discovered in a growing number of dialects, centering around the historical frontier areas between Tibet and China, which is also the area of distribution of Qiangic languages. Tibetan dialects, in which this change has been documented include Báimǎ (Zhāng 1994a: 13, 1997; Huáng and Zhāng 1995: 91), Dōngwāng (Bartee, this volume), and many dialects of Dìqíng Prefecture and of Déróng 得榮 <sde rong>, Xiāngchéng 鄉城 <phyag phreng>, and Dàoichéng <dab pa> Counties, as reported by Suzuki (2008).

OT *r-* remains unchanged in Kami, e.g.:

<ra> /^hrɔ/ ‘sheep; garden’

<bu ram> /^hpə-^hrā/ ‘brown sugar’

(3) OT approximants

The OT glide *w-* remained unchanged in Kami. The glide *y-*, on the other hand, underwent a rather unusual development, whereby it changed to spirant /ʒ/ (/z/ in the speech of my other consultants). (A similar development has also been reported in Zhongu, Sun 2003: 797, and Dōngwāng, Bartee, this volume.) Consider some Kami examples:

<wa> /^hwɔ/ ‘fox’

<yob> /^hʒu/ (/^hzu/) ‘stirrup, steps’

OT syllables with no consonantal initial (WT *a-chung*) mostly correspond to syllables beginning with a vowel in Kami. One exception is the root <‘og> ‘low, below, underneath’, Kami /^hxɣ/. For example:

²⁹ The WT *sr-* and *sl-* clusters are traditionally analyzed as the root initial *s-* followed by medials *-r-* and *-l-*. They are therefore discussed in the section on consonant clusters (§3.1.3).

<'od> /^lue/ 'light, rays'
<'ug pa> /^hu-^hhu/ 'owl'
<'og lpags?> /^lxɣ-^hpa/ 'under lip'

3.1.2. OT cluster initials

3.1.2.1. OT clusters with prefixal *m-* and *n-*

OT nasal prefixes *m-* and *n-* merged before obstruent root initials, resulting in Kami prenasalized consonants.³⁰ The nasal prefix *m-* elided before another nasal. For example:

<mgo> /^hngu/ 'head'
<mdzod> /^hndzue/ 'room, chamber'

<mna'> /^hnõ/ 'oath'
<mnar> /^hnɛ/ 'to press'

<'dar> /^hndɛ/ 'to shiver, to tremble'
<'bri> /^hndzə/ 'female yak'

Some additional observations concerning the developments of OT clusters with nasal prefixes in Kami can be made:

(1) When prefixed to a voiceless aspirated stop (and in some instance, also to a voiced stop), *m-* and *n-* often elide without any ostensible trace. Consequently, modern Kami reflexes of such initial clusters exhibit developments of a simple root initial, as if a nasal prefix were not there in the first place.³¹ For example:

<'khrud> /^htɕə/ 'to wash'
<'thong> /^hthũ/ 'to drink'
<'phug> /^hphu/ 'to punch a hole'
<'bri> /^htɕə/ 'to write'

<mchin pa> /^htɕhi-^hnbo/ 'liver'
<mthong> /^hthõ/ 'to see'
<mtsho> /^htshu/ 'lake'
<mkhris pa> /^ltɕhi-^hpə/ 'gall bladder'

³⁰ One exception is the word /^hta-^hnthui/ [ʰta-^hŋthui] 'reins', <rtā mthur>.

³¹ A similar development has also been reported for Dégé (Häsler 1999: 34), Zhōngdiàn (Wáng 1996: 62), and Dōngwāng (Batee, this volume).

(2) *m-* and *n-* prefixed to a voiced root initial, in many instances fail to condition the development of high tone, as in the following words (to be further discussed in §3.3):

<'grang> /ʎndzɔ̃/ 'to have one's fill'

<'bu> /ʎnbə/ 'insect, bug'

<mje> /ʎndzi/ 'penis'

<mdzub> /ʎndzui/ 'finger'

(3) Some words related to Tibetan etymons with a prenasalized cluster initial with the prefixed *n-*, may have a plain nasal initial reflex in Kami, which is furthermore mostly in free variation with a prenasalized cluster reflex, and which is homorganic with the initial of the corresponding nasal cluster. For example, <'di> /ʎnde~ʎne/ 'this', <'bag> /ʎnba~ʎma/ 'mask', <sbrang> /ʎnbɔ̃~ʎmɔ̃/ 'bee; wasp' (the change from *sbr-* to /ʎb~m/ is discussed in §3.1.3).

(4) Finally, some WT words with a plain initial or those with an initial preceeded by an oral prefixed consonant have Kami equivalents with a prenasalized initial cluster. For example, <zam pa> /ʎndza-ʎnbə/, <me tog> /ʎnbu-ʎru/ 'flower', <thang rag> /ʎndu-ʎra/ 'silver fir', <dgun ka> /ʎnga-ʎngə/ 'winter', <pus mo> /ʎpa-ʎnbu/ 'knee', <phu thung> or <phu dung> /ʎphə-ʎndü/ 'sleeve'.

3.1.2.2. OT cluster initials with medials (-w-, -r-, -y-)

(1) medial -w- (*wa zur*)

WT *wa zur*, whose precise OT phonetic value remains uncertain, and which at least in some instances appears to be a purely graphic convention to distinguish certain homophones, has zero reflex in Kami, as in most Tibetan dialects. For example:

<dang po> /ʎtɕ-ʎnbu/ 'first'

<dwangs mo> /ʎtɕ-ʎmɔ/ 'clear'

<sha> 'meat' /ʎɕɔ/

<shwa ba> 'deer' /ʎɕɔ/

(2) medial -r- (*Kr-*, *dr-*, *Pr-*)

OT *Pr-*, *Tr-* and *Kr-* clusters all merged as retroflexes in Kami (the developments of the OT spirant-based clusters *sr-* and *hr-* are considered in §3.1.3). For example:

<skra> /ʎtɕɔ/ '(human) hair'

<khrag> /ʎtɕha/ 'blood'

<gro> /ʎtɕu/ 'wheat'

<drug> /^htʂw/ ‘six’
 <‘phrad> /^htʂhue/ ‘to meet’
 <brag> /^htʂa/ ‘rock, cliff’
 <sbrang> /^hdzɔ̃/ ‘honey; sugar’

(3) medial -y- (*Py-*, *Ky-*, *my-*)

The palatal medial -y- could combine with bilabial and velar stops, as well as with the bilabial nasal *m-*. The bilabial nasal *m-*, followed by the medial -y-, went to Kami /ɲ/, as in /^hhɲi-^hnbɔ/ <smyon pa> ‘madman, lunatic’.

OT velar stops taking the -y- medial were transformed into palato-alveolar affricates in the speech of my main consultant and into alveo-palatal affricates in the speech of my other consultants. For example:

<gyang> /^htʂ/ (/^htʂɔ̃/) ‘wall’
 <rgya> ‘Chinese’, <brgya> ‘hundred’: /^hdzɔ/ (/^hdzɔ̃/)
 <bkyags> /^hja-^htʂa/ ‘to lift, to raise’
 <khyod> /^htʂhue/ (/^htʂhe/, note the irregular tone of this form) ‘thou, second person singular pronoun’

OT bilabial stops, on the other hand, were transformed into palato-alveolar fricatives in the speech of my main consultant and into dental fricatives in the speech of my other consultants. For example.³²

<bya> /^hʂ/ (/^hʂɔ/) ‘bird; chicken’
 <dbyar ka> /^hʂɛ-^hkhɔ/ (/^hʂɛ-^hkhɔ/) ‘summer’
 <dpyang> /^hma-^hʂ/ (/^hja-^hʂɔ̃/) ‘to hang’
 <phyags> /^hʂha/ (/^hsha/) ‘to sweep’
 <‘phyen> /^hʂhẽ/ (/^hshẽ/) ‘fart’

Before the original OT front vowels *i* and *e*, modern reflexes of OT *Ky-* and *Py-* clusters merged with those of OT palato-alveolars. For example:

<byi’u> or <bye> /^hʂi/ (/^hʂi-^hka/ or /^hʂi-^hka/) ‘little bird; sparrow’
 <phye> /^hʂi/ (/^hja-^hsi/) ‘to close’ (note the irregular lack of aspiration in this word)
 <shig> /^hʂi/ (also /^hʂi/ for my other consultants) ‘louse’

In addition, the ongoing process of palatalization before modern high front vowels continues to transform some (mostly high frequency) words with palato-alveolar

³² One exception can be noted, namely <phyi> ‘outside, back’ /^hphie/. The WT root <phyi> has two reflexes in Kami: (1) /^hphie/ in the meaning ‘outside, back’, and (2) /^hʂə/ in the meaning ‘to be late’. Note that the latter reflex is irregular in that it lacks aspiration.

initials into those with alveo-palatal initials. For example: <brgyad> /^Hdze/ ‘eight’, <rgyan bzhang> /^Htɕɛ̃ ʌɣa/ ‘to place a bet’.

Altogether, it is conceivable that the complex developments attested in the speech of my main consultant reflect a stage predating those in the speech of my other consultants. This would entail that Kami reflexes of OT *Ky*- and *Py*- clusters (i.e. palato-alveolar affricates and fricatives) were originally distinct from those of OT palato-alveolar affricates and fricatives (i.e. alveo-palatal affricates and fricatives and uvular fricatives in Kami). Subsequently, a sound change may have occurred to avoid the typologically highly marked opposition between palato-alveolars and alveo-palatals, a change that converted palato-alveolar affricates into alveo-palatal affricates, and palato-alveolar fricatives into dental fricatives. Tentatively, it is further possible that the latter change (i.e. from palato-alveolar fricatives to dental fricatives) was motivated by the stability of the latter series (i.e. dental fricatives) in terms of the overall number of words with dental fricative initials (so that the motivation was to join the existing series, rather than creating a new series).

3.1.3. Miscellaneous changes of OT initial clusters

This subsection is dedicated to the development in Kami of OT initials and clusters that are known for the heterogeneity of their modern reflexes (Zhāng 1996, Sun 2003: 787-790). It includes the WT letter *m*-, the clusters *lh*-, *sl*-, *sr*-, *hr*-, *zl*-, the prefixed *Ky*- and *Py*- clusters and the cluster *sbr*-. The emphasis is on comparing Kami reflexes of these clusters with those in Zhōngdiàn and Dōngwāng, as potentially diagnostic of the purported close relationship between these dialects.

(1) *m*-

WT *m*- stands in part for an earlier OT cluster *my*-, as reflected in Old Tibetan texts and modern Tibetan dialects. WT *m*- before the original front vowels is realized in Kami as /ɲ/, merging with the reflexes of WT *my*- clusters. Before the original non-front vowels, on the other hand, WT *m*- is realized as Kami /m/.³³ For example:

<ming> /ʌɲũ/ ‘name’

<me> /ʌɲi/ ‘fire’

<mar> /ʌmɛ/ ‘butter’

<mo khyi> /ʌmu-^Htʃhə/ ‘bitch, female dog’

(2) *lh*-

On the basis of dialectal data, the WT script sequence *lh*- has been argued to have once represented a proto-sonorant cluster (Beyer 1992: 46, footnote 9; Zhāng 1996: 23; Sun 2003: 787-788). Kami offers additional evidence to this claim. In this dialect, WT *lh*- has two reflexes: (1) one as a cluster, /hʃ/, and (2) another as a voiceless lateral

³³ This is a common development in many Khams dialects, e.g. Dégé (Häsler 1999: 43), Zhōngdiàn (Wáng 1996: 57).

fricative, /hl/.³⁴ Both changes can be observed in the modern Kami reflexes of the WT etymon *lha* ‘god, deity’, representing two distinct lexical layers: (1) one presumably more archaic, <lha> /^hhjo/ ‘god, Buddha’, and (2) another, more recent, /^hhlɔ/. The latter word, /^hhlɔ/, refers to ‘lesser’ gods, mountain and water spirits.

Overall, /hʃj/, is attested only in a handful of words, e.g. <lham> /^hhʃjã/ ‘shoes, boots’; whereas /hl/, is more frequent. For example:

<lhan> /^hhlẽ/ ‘to paste, to stick, to glue’

<lhud?> /^hhli/ ‘to take off’³⁵

<lho> /^hhlu/ ‘south’

(3) *sl-*

Most Khams dialects have two reflexes of the OT cluster *sl-*, i.e. *ts-* and *hl-*. Kami, however, has only one reflex of this OT cluster, /hl/, hence merging with modern reflexes of the WT *lh-* cluster.³⁶ Consider the following Kami examples:

<sleb> /^hhle/ ‘to arrive’

<bslab> /^hhlɿ/ ‘to teach’

(4) *hr-*

The only example in my data that potentially reflects the OT cluster *hr-*, ‘to tear up, to rip’, WT <hral> or <ral>, yields the initial /r/ in Kami, /^hpha-^hri/.³⁷

(5) *sr-*

The OT cluster *sr-* was transferred into Kami /s/, hence developing a reflex identical to that of the OT simple initial *z-*, albeit with a different tone.³⁸ Words related to WT etymons with the *sr-* cluster are high-toned in Kami, whereas words related to WT etymons with the initial *z-* are low toned. For example:

³⁴ This is identical to Dōngwāng (Bartee, this volume), whereas in Zhōngdiàn, WT *lh-* was transferred into /ʃ/ and /t/ (Wáng 1996: 62).

³⁵ Compare: Bātáng [hly⁷⁵³], tentatively from <lhud?>, Gésāng (1989: 345).

³⁶ One more source of Kami /hl/ is the OT *rl-* cluster (conceivably, through the intermediate change from OT *rl-* to *sl-*). For example, <rlag> /^hhla/ ‘to take apart, to dismantle’, <rba rlabs> /^hpa-^hhlɿ/ ‘wave’.

The development of the OT cluster *sl-* in Kami is identical to the development of this cluster in Bātáng (Gésāng 1989: 339), Dégé (Häsler 1999: 46), and Zhōngdiàn (Wáng 1996: 59). In Dōngwāng, on the other hand, *sl-* developed into /ʃ/ and /h/ (Bartee, this volume).

³⁷ To compare, OT *hr-* becomes /ʃ/ in Zhōngdiàn (Wáng 1996: 62), and /hr/ in Dōngwāng (Bartee, this volume).

³⁸ This development is identical to that in Zhōngdiàn (Wáng 1996: 61), Dōngwāng (Bartee, this volume), Bātáng (Gésāng 1989: 339) and Dégé (Häsler 1999: 33).

<srab> /^Hsɿ/ ‘shallow’

<zab mo> /^Lsɿ-^Hmu/ ‘deep’

<srog> /^Hso/ ‘life, destiny’

<zug> /^Lsu/ ‘to bark’

(6) *zl-*

Similar to the OT cluster *lh-*, the OT cluster *zl-* has two reflexes in Kami: (1) /l/, as in the word for ‘moon’, <zla> /^Hlɔ/; and (2) the cluster /nd/ for the word ‘month’, <zla ba> /^Lnda-^Hwɔ/. The latter change is a regular development in most varieties of Khams Tibetan. The former change is less frequent. Notably, it is shared by Kami with Dōngwāng (Bartee, this volume), which also has two reflexes of *zl-*, which are furthermore identical to those in Kami.

(7) *Prefixed Ky- and Py- clusters*

OT complex initial *Ky-* and *Py-* clusters with oral prefixes by and large merged in Kami with the reflexes of OT unprefixed *Ky-* and *Py-* clusters. This is to say that they became palato-alveolar fricatives in the speech of my main consultant and dental stops in the speech of my other consultants. For example:

<skyi> /^Hfə/ (/^Hsə/) ‘to borrow (money)’

<skiid po> /^Hçi-^Hpu/ (/^Hsi-^Hpu/) ‘comfortable’

<dpyi> /^Hfə/ (/^Hsə/) ‘hip’

<dbyar kha> /^Lzɛ-^Hkhɔ/ (/^Hzɛ-^Hkhɔ/) ‘summer’

At the same time, some of the OT *Ky-* and *Py-* clusters with the OT prefix *s-* show an irregular development in the speech of my other consultants, whereby they were transferred into /ʃ/ instead of the otherwise expected /s/. Compare:

<bya> /^Lɔ/ ‘bird’ vs. <spyang> /^Hʃ/ ‘wolf’ (my main consultant)

<bya> /^Lso/ ‘bird’ vs. <spyang> /^Hʃɔ/ ‘wolf’ (my other consultants)

<skyr> /^Hfɯ-^Hkua/ ‘sour’ vs. <skyuɡ> /^Hfɯ/ ‘to vomit’ (my main consultant)

<skyr> /^Hʃu-^Hkua/ ‘sour’ vs. <skyuɡ> /^Hsu/ ‘to vomit’ (my other consultants)

The development of OT unprefixed *Ky-* and *Py-* clusters in Kami are identical to that in Zhōngdiàn (Wáng 1990: 62). Unfortunately, Wáng (1990) does not mention the fate of the OT *sky-* and *spy-* clusters in this dialect. Dōngwāng (Bartee, this volume), on the hand, exhibits distinct developments, whereby (1) OT unprefixed *Ky-* clusters were transferred into alveo-palatal fricatives, (2) unprefixed *Py-* clusters were transferred into dental fricatives, and (3) prefixed *Ky-* and *Py-* clusters merged into /s/.

(8) *sbr-*

The development of the OT cluster *sbr-* is complex in Kami, with two different types of reflexes. On the one hand, it exhibits the regular development of OT *Pr-* clusters into a retroflex. For example:

<sbrul> ‘snake’ /^Hdz̥u-^Hl̥ē/

On the other hand, in one word, <sbrang ma> ‘bee; wasp’, *sbr-* developed into Kami /nb~m/, viz. /^Lnb̥ō~^Lm̥ō/. A similar development of the *sbr-* cluster in this word has been attested in a number of peripheral Tibetan dialects, e.g. /nbuma/ in Dári 達日 <dar lag> (Gogog <mgo log>, Qīnghǎi Province), /nba⁴se³/ in Déqīn <bde chen> (Díqìng) (Zhāng 1996: 24), or /bing³⁵ma⁵⁵~bing⁵⁵ma⁵³/ in Ménbā 門巴 <mon pa> (Tibet) (Lù 2002: 356). This is, for this reason, an example of retention by periphery.

Similar to the WT words <lha> and <zla>, WT <sbrang> has two reflexes in Kami: /^Lnb̥ō~^Lm̥ō/ for ‘bee; wasp’, and /^Hdz̥ō/ for ‘honey; sugar’.³⁹

No characteristic changes of the clusters considered in this section appear to be shared exclusively by Kami, Zhōngdiàn, Dōngwāng, and not by other dialects. Hence, if the three dialects can be grouped into one cluster, as proposed by Qú and Jīn (1981), the considered changes bear no witness to it.

3.2. History of Kami rhymes

In conformity with general Khams developments, the original complex WT rhyme structure, yielding over 70 distinct rhymes, has been drastically simplified in Kami. All original consonantal codas were lost, transforming all closed syllables into open syllables. All OT simple rhymes developed shifted vowel qualities, whereas various OT closed rhymes containing old codas were transformed to replenish the vacated vowel space and to generate innovative vowels or diphthongs. The observed correspondences between OT and modern Kami rhymes in monosyllabic words are summarized in Table 6. The diphthong /ua/ has been attested only in roots of uncertain etymology. For this reason, this diphthong is not included in the table below.

Kami	OT
i	al, ib(s), id, ig(s), il, ir, is, e, el, es, ud, ul, ol
e	ad, eb(s), ed, er, ul, od
ɛ	ar
a	ag(s), eg(s)
ə	i, u, us
ɯ	ug(s), ig(s), ul
u	o, ub(s), ug(s), ob(s)
ɤ	ab(s), og(s), od
o	og(s), ob(s)

³⁹ To compare, in the neighbouring Zhōngdiàn (Wáng 1996: 62) and Dōngwāng (Bartee, this volume), *sbr-* was uniformly transferred into a voiced retroflex fricative.

ɔ	<i>a, a⁴⁰</i>
ĩ	<i>ing, eng</i>
ē	<i>an, en, em(s), in, ing, im(s), un, on</i>
ā	<i>am(s), root vowel+-ma</i>
ũ	<i>ung</i>
ũ	<i>um(s)</i>
ō	<i>ang(s), om(s), ong, root vowel+-ma/-mo</i>
ei	<i>as, el, ul, ol, os</i>
ui	<i>ub(s), ur</i>
ue	<i>is, od, or</i>
uē	<i>on</i>

Table 6. *Kami rhymes and their OT origins*

In disyllabic words, sound changes in the first syllable of the word may be distinct from those summarized in Table 6. One reason for this dissimilarity is the process of resyllabification, as discussed in §3.4.3. For example, <skam po> /^Hka-^Hnbu/ ‘dry’ or <‘khor lo> /^Hkhu-^Hlu/ ‘wheel’. In addition, a recurrent yet marginal change observed in the first syllable of disyllabic words is that of the original OT rhyme in the first syllable into Kami /a/. For example, <sen mo> /^Lsha-^Hmō/ ‘nail, fingernail’, <pus mo> /^Hpa-^Hnbu/ ‘knee’, <thod pa> /^Ltha-^Hpō/ ‘forehead’.

(1) *OT simplex vowels*

All five OT simple rhymes *a, i, e, u* and *o* developed shifted vowel qualities in Kami. OT *-a* developed into Kami /ɔ/, *-i* to /ə/, *-e* to /i/, *-u* to /ə/ and *-o* to /u/.⁴¹ Conforming to the important areal pattern in the Amdo and Khams regions, Kami merged the OT high vowels *i* and *u* into schwa (cf. a similar development in Zhongu, Sun 2003: 791). For example:

<ba> / ^L pɔ/ ‘cow’	<ra> / ^L rɔ/ ‘sheep; garden’
<byi’u> or <bye> / ^L ci/ ‘sparrow’	<spre’u> / ^H tʃi/ ‘monkey’
<‘bri> / ^H ndzə/ ‘female yak’	<ri> / ^L rə/ ‘mountain’
<bu> / ^H pə/ ‘son’	<lu> / ^L jə/ ‘to cough’
<‘bo> / ^L pu/ ‘to overflow, to spill’	<ro> / ^L ru/ ‘corpse’

(2) *OT syllables with consonantal codas*

As in other Khams dialects (Gésāng 1989: 349-350; Gésāng and Gésāng 2002: 78), the depletion of OT consonantal codas in Kami resulted in the development of (i)

⁴⁰ WT *a-chung*, used to write the absence of a consonant in the syllable-initial, word-medial or coda position, is known to have no attestable influence on the development of the rhyme, which is that of a simple nucleus vowel (e.g. Dégé, Häsler 1999: 55; Yùshù <yul shul>, Huáng et al. 1994: 121).

⁴¹ One exception to the *a* to /ɔ/ change is <ga-gar> ‘where’, Kami /^Lka-^Lkɛ/.

innovative vowels, e.g. OT *-ar* > Kami /ɛ/, e.g. <dar> /ʰtɛ/, and *-ang* > /õ/, e.g. <tshang> /ʰtshõ/ ‘family, house; nest’, and (ii) diphthongs. The developments of OT closed rhymes containing consonantal codas are summarized in Table 7. (Table 7 lists modern Kami reflexes supported by the majority of examples. Sporadic sound changes are listed in footnotes.) The variation between the modern reflexes of the OT rhymes *-od*, *-or* and *-on* (a simple vowel, /e/ and /ẽ/, vs. a diphthong, /ue/ vs. /uẽ/, respectively) appears to be phonologically conditioned by the modern initial of the word. Namely, words with bilabial initials cannot combine with the rising diphthong. For example, <bod> /ʰpe/ ‘Tibet, Tibetan’ vs. <mdzod> /ʰndzue/ ‘room, chamber’, <bor> /ʰpe/ ‘to throw, to toss, to discard’ vs. <lag kor> /ʰja-ʰkue/ ‘bracelet’, <dpon> /ʰpẽ/ ‘official’ vs. <rngon> /ʰŋuẽ/ ‘to hunt’.

	b(s)	d	g(s)	l	r	s	n	ng(s)	m(s)
a	ɣ	e	a	i ⁴²	ɛ	ei ⁴³	ẽ	õ	ã
i	i	i	i ⁴⁴	i	i	i ⁴⁵	ẽ	ĩ ⁴⁶	ẽ
e	e	e	a ⁴⁷	ei or i ⁴⁸	e	i	ẽ	ĩ	ẽ
u	ui or u ⁴⁹	i	u ⁵⁰	ei/e/i/u ⁵¹	ui	i or e ⁵²	ẽ	ũ	ũ
o	u or o ⁵³	e or ue ⁵⁴	o ⁵⁵	ei or i ⁵⁶	e or ue	ei	ẽ or uẽ	õ	õ

⁴² Some sporadic examples of the change from OT *-al* to Kami /e/ have also been attested. For example, /ʰkhe-ʰlɛ/ <mkhal ?> ‘kidney’, /ʰbu-ʰtche/ <sub chal> ‘cymbals’.

⁴³ An exception to this change is the word ‘ladder’, <skas>, Kami /ʰke/ [ʰkie].

⁴⁴ An alternative development of this OT rhyme in Kami, as attested in one single word, is /u/, <kha tig> /ʰkha-ʰtu/ ‘bitter’.

⁴⁵ A different development of this OT rhyme in Kami, attested in one single word, is /ue/, i.e. <gnyis> /ʰŋue-ʰŋue/ ‘two’.

⁴⁶ An alternative development of this rhyme in some Kami words is /ẽ/, e.g. <ring> /ʰrẽ/ ‘long’.

⁴⁷ For example, <sreg> /ʰsa/ ‘to burn; hot (as of weather); spicy (as of food)’, <dzeg> /ʰndza/ ‘to climb’, <dreg> or <breg> /ʰdza/ ‘to cut one’s hair’.

⁴⁸ For example, <shel> /ʰchei/ ‘glass’, <khrel> /ʰtshi/ ‘shy, bashful’.

⁴⁹ For example, <mdzub> /ʰndzui/ ‘finger’, <gtub> /ʰtu/ ‘to cut off, to severe; to cut up, to slice’.

⁵⁰ Some sporadic exceptions to this sound change include <dug> /ʰndə/ ‘to be; to sit; to dwell’, and <dbug> /ʰbu/ ‘breath’.

⁵¹ For example, <shul> /ʰchei/ ‘mark, trace’, <dnkul> /ʰŋe/ ‘silver; money’, <gul> /ʰŋgi/ ‘to push’, <brtul> /ʰtɛ-ʰtu/ ‘blunt’.

⁵² For example, <lus po> /ʰli-ʰpu/ ‘body’, <rus pa> /ʰrɛ-ʰpo/ ‘bone’.

⁵³ There are only two examples of this rhyme in the sample, <yob> /ʰzu/ ‘stirrup, steps’ and <spobs> /ʰpo/ ‘to dare, to have courage’.

⁵⁴ A different development of this rhyme is attested in the word /ʰhlɣ/ <lhod> ‘relaxed, loose’.

⁵⁵ For example, <srog> /ʰso/ ‘life, fate, destiny’. In a small number of words, this regular reflex of the OT rhyme *-og*, viz. /o/, appears to have followed an additional change, viz. from /o/ to /u/, as in <me tog> /ʰnbu-ʰru/ ‘flower’, <thog> /ʰthu/ ‘grain, crops’. Finally, some words with this OT rhyme resulted in Kami /ɣ/, e.g. <og> /ʰxɣ/ ‘below’.

Table 7. OT rhymes with consonantal codas and their Kami reflexes

The marginally attested diphthong [ie] is likely to result from the ongoing process of palatalization conditioned by modern Kami high front vowels. Hence, <skas> /^hke/ [k^hkie] ‘ladder’ is likely to have developed through the following stages: <skas> > /kej/ > /ke/ > [kje].

Overall, the drastic rhyme attrition is considered as one of the characteristic features of Khams dialects (e.g. Gésāng and Gésāng 2002: 78). While the precise developments of OT closed syllables containing codas are extremely variegated in Khams, the major trends, as characteristic for such well documented Khams dialects, as Bātáng (Gésāng 1989: 348) and Dégé (Häsler 1999: 51-75), can be summarized as follows (Hú 1991: 192):

OT *-b/-d/-g* > V? (short checked syllables)

OT *-m/-n/-ŋ* > \tilde{V} (long nasalized syllables)

OT *-r/-l/-s* > \emptyset (long open syllables)

In addition, a number of OT closed syllables containing codas have developed into modern diphthong finals, e.g. Bātáng [eĩ] derives from OT *-en* and *-an*; [eiʔ] from *-ed*, and [auʔ] from *-ab* and *-ob* (Gésāng 1989: 349).

The number of diphthongs deriving from original OT closed syllables with codas varies considerably among Khams dialects and can thus be of interest for subgrouping purposes. It appears that dialects with large inventories of diphthongs are centered around Gānnán 甘南 <kan lho> Tibetan Autonomous Prefecture in Gānsù Province (represented by such dialects as Zhuóní 卓尼 <co ne> and Zhōuqǔ 舟曲 <'brug chu>) and around Díqìng Prefecture, with the dialects of which Kami is grouped in one sub-cluster (Qú 1991: 25-26). For example, Zhōngdiàn, one of the best-recorded Díqìng dialects has, in different analyses, as many of 23 diphthongs (Lù 1990: 150), or 11 or 9 diphthongs (Wáng 1996: 63-64; Hongladarom 1996: 76, respectively). The major source for diphthongs in these dialects is OT rhymes with the codas *-s*, *-l*, *-n*, and *-d*. Consider some examples from Qú (1991: 45-47):

OT *-Vb* > *-Vu*, e.g. Zhōngdiàn <thab> [thou⁵³] ‘solution, means, method’

OT *-Vl* > *-Vi*, e.g. Zhōngdiàn <skol> [kui⁵⁵] ‘boil’, <drel> [tʂui¹³] ‘donkey’

OT *-Vd* > *-Ve*, e.g. Zhōuqǔ <bdud> [tye²²] ‘demon’

OT *-Vn* > *-Ve*, e.g. Zhōuqǔ <gon> [kye⁴⁴] ‘put on, wear’, <dran> [tʂie⁴⁴] ‘think’

OT *-os* > *-ue/-ui*, e.g. <dgos> ‘to want’: Zhōngdiàn [gue⁵⁵], Dōngwāng [gui⁵³]

The developments of OT rhymes with consonantal codas in Kami are similar to those described in Qú (1991: 25-26). One way to account for these developments in Kami is to hypothesize that *all* OT closed syllables with consonantal codas developed through

⁵⁶ For example, <gshol> /^hçei/ ‘plow’, <sol ba> /^hshi-^hwɔ/ ‘charcoal’, <skol> /^hki/ ‘to boil, to stew’.

a stage of diphthong reflexes of the original OT rhymes.⁵⁷ In this analysis, the original OT rhymes developed into diphthongs, in which the first target reflected the original OT nucleus vowel, and the second target reflected the original OT coda. In addition, OT rhymes with back rounded vowels *u* and *o* developed into rising diphthongs, e.g. <me thur> /^lmo-^hthui/ ‘matches’, <rna kor> /^hna-^hgue/ ‘round earrings’. OT nasal codas contributed to the nasalization of the second target, e.g. <'don> /^hnduẽ/ ‘to read out loud, to learn’. Notably, when the trajectory between the two targets in a diphthong was large, the two targets coalesced into one target, resulting in many cases into an innovative vowel, e.g. OT *-ab* > Kami /ɤ/, OT *-ar* > Kami /ɛ/. When, on the other hand, the trajectory between the two targets was short, Kami retained a diphthong, e.g. OT *-el* > Kami /ej/.

Based on the developments as summarized in Table 7, the development of OT consonantal codas in Kami can be schematically presented as follows:

- (a) *-l*, *-r*, *-s* coalesced in /i/, e.g. <ru^lpha-^hri/ ‘to rot’ (with the directional prefix /pha-/ ‘outward’), <zur> /^lsui/ ‘corner’, <? lus> /^hwu-^hli/ ‘cat’</sup></sup></sup></sup>
- (b) *-d* developed into /e/, e.g. <red> /^lre/ ‘copula verb’, whereas *-n* developed into /ẽ/, e.g. <'dren> /^hndzẽ/ ‘to thread (a needle)’</sup></sup>
- (c) grave codas (*-b*, *-m*, *-g*, *-ng*) developed into /u/ (with a further distinction in the degree of rounding in the reflexes of bilabial and velar codas), e.g. <gtub> /^htu/ ‘to cut off, to severe; to cut up, to slice’, <mig btsu^m> /^hni-^htsũ/ ‘to blink, to wink’, <gtsug> /^htsu/ ‘calvaria, top of the head’, <dung> /^ltũ/ ‘conch shell’</sup></sup></sup></sup></sup>

The diphthong /ua/ occurs only in words of unclear etymology. For example, /^lgua-^hju/ ‘yak’ and /^lkhua-^hla/ ‘basin’, cf. Shǐxīng /^lqhua-^hla/, Púmǐ /^{khua³⁵la³⁵/, Lizu /^lqhua-^hla/.}</sup></sup></sup></sup></sup></sup></sup></sup>

The development of OT closed syllables with codas in Kami with no modern glottal stop codas and no feature of length is quite unique both as compared to the best-documented Khams dialects and to the neighbouring dialects of Dìqìng Prefecture. The development of OT rhymes with consonantal codas in Kami is closely related to the development of tones in this dialect, as discussed in the following section.

3.3. Development of tones

Kami tones fall under two registers (High and Low). Their development is conditioned by two factors: (1) desonorization of initial consonants, and (2) the loss of preradicals. Both are among the major trends in the development of tonal registers in Tibetan dialects (cf. Huáng 1995: 50; e.g. Dégé, Häsler 1999: 75).

The main trends in the development of tonal registers in Kami, as elsewhere in Khams, are for OT syllables with obstruent onsets to induce low register when the

⁵⁷ These developments are also seen in other dialects with many diphthong reflexes of OT rhymes with codas (Qú 1991). In Kami, they additionally include (i) many innovative vowels (of which some are phonetically diphthongized), (ii) many diphthongs, (iii) absence of glottal stop codas.

latter were voiced, and high register otherwise. In addition, OT syllables with sonorant onsets developed low register if prefixal consonants were absent, and high register otherwise. For example:

<nga> / ^h ŋɔ̃/ ‘I’	<lnga> / ^h ŋɔ̃/ ‘five’
<zhing> / ^h çĩ/ ‘land’	<shing> / ^h çĩ/ ‘wood, tree’
<nyan> / ^h ŋe/ ‘to listen’	<dngul> / ^h ŋe/ ‘silver; money’

Some of Kami tones appear irregular from the point of view of standard written Tibetan orthography. These irregular cases further fall into three categories:

(1) high tone in words related to WT words with voiced initial in the absence of a prefix, e.g. <mig> /^hŋi/ ‘eye’, <bu> /^hpə/ ‘son’

(2) low tone in words with a voiceless initial related to WT unprefixated words with a voiceless initial or to WT words with a voiceless prefix, e.g. <char pa> /^htɕhɔ/ ‘rain’, <shwa ba> ‘deer’ /^hɕɔ/, <sna> /^hhnã/ ‘nose’

(3) low tone (or variable tone) in words related to WT words with a voiced prefixal consonant and a voiced initial, e.g. <dbug> /^hbu/ ‘breath’, <dbun> /^hdẽ~^hdẽ/ ‘seven’, <grang> /^hndzɔ̃/ ‘to have one’s fill’, <mdzub> /^hndzui/ ‘finger’, <dgon> /^hguẽ/ ‘abbey’

These three categories are considered in turn below.

(1) The first category covers those etymons that had a prefix in OT, whereas this prefix is no longer reflected in WT. One of the most frequently quoted examples of such etymons is WT *mig* ‘eye’. The reflexes of this word in many dialects point to the OT form **C-myig*. This word is also attested as *dmyig* or *gmyig* in Dūnhuáng manuscripts (Huáng et al. 1994: 121). In Khams dialects, this word often carries a high tone reflex in Khams dialects, as it does in Kami, hence equally pointing to an earlier prefix.

The same explanation may be in order in the case of the word for ‘son’, /^hpə/, WT <bu>, or in the case of the word for ‘body’, WT <lus po>, variously /^hli-^hpu/, for my main consultant, or /^hli-^hpu/ for my other consultants. The latter word is irregular both in terms of its initial (for the OT unprefixated root initial *l-* normally becomes /j/ in Kami) and in terms of its high tone (the /L-H/ tone patten for the main consultant may be due to the right-prominent stress pattern). An elided prefixal consonant potentially offers an explanation for both the unchanged initial and the high tone.

(2) The second category groups together cases, in which low tone is conditioned by one of the morphologically opaque OT nominal suffixes *-ba*, *-bo*, *-bu*, *-pa*, *-po*, *-ma*, *-mo*, *-i*, and *-u*. Two additional points are in order. First, the initial of all suffixes may lenite to *-w-* (in the case of *-pa*, *-po* through the intermediate stage of voicing, and in the case of *-ma*, *-mo* with an accompanying nasalization). For example:

- (i) *-b-* > *-w-*, e.g. <kha ba> /^lkha-^hwɔ/ ‘snow’
- (ii) *-p-* > *-b-* > *-w-*, e.g. <sgog pa> > *sgog ba > /^lgu-^hwɔ/ ‘garlic’, <thag pa> > *thag ba > /^ltha-^hwɔ/ ‘rope’
- (iii) *-m-* > *-w-* (+ nasalization), e.g. <tsher ma> /^ltshə-^hwã/ ‘thorn’, <ba mo> /^lpã/ ‘frost’, <so ma> /^hsõ/ ‘hemp’

Second, the outcome of the changes above, i.e. the intervocalic *-w-*, may be further lenited to zero, leading to the coalescence of open root syllable with the prefix into a diphthong, e.g. [ɔɔ] as in /^lthɔ/ [thɔɔ¹³] ‘rope’, or the simple vowel [ɔ], without a trace of lengthening.⁵⁸ For example: <shwa ba> /^lχɔ/ ‘deer’, <char pa> > *char ba > /^ltɕhɔ/ ‘rain’, <sna ba> or <sna ma> /^lhnã/ ‘nose’.⁵⁹

Coalescence of open root syllables with the OT nominal suffixes is the predominant source of modern long tones in Tibetan dialects, analyzed as low register induced by rhyme length (Huáng 1995: 57; Sun 2001: 40). In view of Kami disyllabic examples such as /^lkha-^hwɔ/ ‘snow’ and /^ltha-^hwɔ/ ‘rope’, in which low register appears to have developed before coalescence, somewhat surprisingly suggests that low register may be induced by a suffix with a voiced initial, with syllable coalescence and length being secondary results in this process.⁶⁰ Alternatively, such words may be examples of a contracted syllable expanded again at a later stage (see §3.4.3).

(3) The third category groups together words related to WT etymons with a voiced initial and a voiced prefixal consonant. It can be further distinguished into:

(i) words with variable tones, e.g.:

<gnyis> /^lɲue~^hɲue/ ‘two’

<dbun> /^ldẽ~^hdẽ/ ‘seven’

(ii) words with a modern voiced initial and a low tone, e.g.:

<dbugs> /^lbu/ ‘breath’ (this word is irregular in terms of the development of the OT rhyme)

<'bu> /^lnbə/ ‘insect, bug’

⁵⁸ /^lthɔ/ [thɔɔ¹³] is a variant reading of /^ltha-^hwɔ/ ‘rope’.

⁵⁹ The nasalization of the rhyme triggered by the nasal onset, as possibly exemplified by <sna> /^lhnã/ ‘nose’, is another idiosyncratic feature of Kami. This development is attested in a considerable number of basic vocabulary words, e.g. <nya> /^lɲõ/ ‘fish’, <ngu> /^lɲũ/ ‘to cry’, <nga> /^lɲõ/ ‘I’, <lnga> /^hɲõ/ ‘five’, <ma> ‘mother’, <rma> ‘wound, injury’, both /^lmõ/.

⁶⁰ For some consultants, the process of syllable coalescence does lead to a long vowel, i.e. [kɰo:¹¹] ‘snow’. As length is not contrastive in this dialect and the number of words undergoing syllables coalescence is restricted (hence precluding such syllables as a source for the rise of contrastive length), it is conceivable that such words with non-phonemic long vowels will lose the feature length to develop into an open syllable with a low tone, similar to the examples above, i.e. /^lkɰo/.

(iii) words with a modern voiceless initial and a low tone, e.g.:

<'bo> /^lpu/ 'to overflow, to spill'

<'bud> /^lpi/ 'to go out'

The development of OT clusters consisting of voiced initials and voiced prefixes is known for its heterogeneity in Tibetan dialects. This development, conditioned by the gradual process of devoicing of OT voiced obstruents, in which process prefixed obstruents are affected later than simplex obstruents (Sun 2001: 39), may variously lead to unstable tones, as in Dégé (Gésāng and Gésāng 2002: 109) and Kami, or to a distinct mid register, as in Zádūō (Sun 2001: 38), and, possibly, Dōngwāng (Bartee, this volume).⁶¹

The situation in Kami is characterized by the pronounced tendency to correlate the endpoint of the process of devoicing with a stable low tone (cf. Häsler 1999: 88, footnote 13), as in the word <'bo> /^lpu/ 'to overflow, to spill'. Before the process of devoicing is completed, syllables with variable tones in Kami may tentatively be considered as atonal at this point of their development.

3.4. Word-internal phonological processes

Comparison with WT etymons reveals in Kami a number of phonological processes that target intervocalic consonants in the second-syllable-initial position. These processes include spirantization, voicing, which, in turn, may be accompanied by spirantization, and resyllabification. In terms of frequency in the corpus, spirantization, and voicing affecting velar stop initials, on the one hand, and resyllabification involving WT nominal suffixes, on the other hand, are most common. Altogether, these processes are not regular in Kami, and for some initials, even marginal and sporadic. All these processes in Kami have close parallels both in the best-recorded Khams dialects (Bātāng, Gésāng 1989: 340-342; Dégé, Häsler 1999: 13-16, Gésāng and Gésāng 2002: 99-102) and in the dialects of Dìqìng Prefecture (Zhōngdiàn, Lù 1990: 156-158; Dōngwāng, Bartee, this volume).

3.4.1. Spirantization

The process of spirantization primarily targets the voiceless aspirated velar stop /kh/, which, in the second-syllable-initial position, is often produced as a velar fricative, e.g.:

<sog khang> /^hsho-^hxǔ/ 'thatched house'

<pho khebs> /^hphu-^hxe/ 'quilt, blanket'

<a khu> /^la-^hxə/ 'uncle'

<du khug> /^lti-^hxu/ 'pipe'

⁶¹ Zádūō 雜多 Tibetan <rdza rdo> is spoken in Yùshù, Qīnghǎi Province.

Compared to, for instance, Dégé, where aspirated velar stops in the second-syllable-initial position are exceedingly rare and possibly limited to careful speech (Häsler 1999: 14), this process is irregular in Kami, where aspirated velar stops in the second-syllable position are common. For example:

<sman khang> /^Hhmẽ-^Hkhõ/ ‘hospital’

<gru khug> /^Ltʂə-^Hkhw/ ‘elbow’

<a ? rang> /^La-^Lkhə-^Hrã/ ‘we, first person plural inclusive pronoun’

The remaining examples of spirantization are sporadic. They include:

(1) the change of /pʰ/ to /h/, e.g.:

<pho phag> /^Lphu-^Hha/ ‘boar, hog, male pig’

<mo phag> /^Lmu-^Hha/ ‘sow, swine’

<dpal? phor> /^Lpi-^Hhue/ ‘incense burner, perfuming pan’

(2) /tʂ/ to /ɲj/ or /j/, e.g.:

<lag cha> /^Lja-^Hɲjə/ ‘tool, instrument’

<mig chu> /^Hni-^Hɲjə/ ~ /^Hni-^Htʂə/ ‘tears’

<rdza chu> /^Ldza-^Hjə/ ~ /^Ldza-^Htʂə/ ‘Mekong’

<kha chu> /^Hkha-^Hjə/ ‘saliva’

(3) /n/ or /ɲ/ to /j/

<gnang nyin> /^Hnõ-^Hɲi/ ‘the day after tomorrow’

<na ning> /^Lna-^Hɲi/ ‘last year’

3.4.2. Voicing and spirantization

The sporadic process of word-internal voicing changes voiceless unaspirated stops and fricatives into their voiced counterparts, e.g.:

<rna kor> /^Hna-^Hgœ/ ‘round earrings’

<ka to ra> /^Hka-^Hdə-^Hrɔ/ ‘metal dish, round copper basin’

<chu bya> /^Htʂə-^Hʒɔ/ ‘water bird, crane, swan, goose’

Voiced and, at times, also voiceless unaspirated stops became voiced. The process of voicing can be accompanied by that of spirantization. For example:

<rdo dkar> /^Ldu-^Hkɛ~^Ldu-^Hɣɛ/ ‘white stone’⁶²

⁶² The same development involving the word for ‘white’ <dkar> has been described for Bātáng (Gésāng 1989: 341), Zhōngdiàn (Lù 1990: 156), and Zhongu, (Sun 2003: 793).

<rgya gar> /^Ldʒa-^Hɣɛ/ ‘India’

<dkiyl kung?> or <dkiyl gung?> /^Htʃi-^Hɣyũ/ ‘center, middle part’

To this category also belongs the word ‘rabbit’. Despite its WT spelling as <ri bong>, dialectal reflexes of this word suggest rather a voiceless velar stop initial in the second syllable. For example, in Lhasa Tibetan /ri¹³koŋ⁵⁵/ (Zhāng 1996: 24), Ménbā /re³⁵koŋ⁵⁵~ri³⁵koŋ⁵⁵/ (Lù 2002: 354), Bātáng /zɿ⁵⁵-ɣũ⁵⁵/, Kami /^Lrə-^Hɣyũ/.

Also to this category belong cases of intervocalic voicing involving OT suffixes, i.e. of *-p-* to *-b-*, with a subsequent spirantization of *-b-* to *-w-*, as discussed above.

The process of the intervocalic voicing of /t/ to /d/ is further followed in a number of words by the rhotacism of /d/ to /r/. Some relevant examples include <mchu to> /^Htʃhə-^Hru/ ‘lips’, <me tog> /^Lnbu-^Hru/ ‘flower’, <sgo them> /^Lgu-^Hhrē/ ‘doorsill, threshold’, <go thal> ‘ashes/cinders in a hearth’ > Kami /^Lku-^Hhre/ ‘hearth’, <dus deng?> /^Lta-^Hhrē/ ‘then, today’.

3.4.3 Resyllabification

The process of resyllabification applies with great frequency in Kami disyllabic words. It can be further distinguished into, on the one hand, compressions of earlier disyllabic collocations or expansions of an earlier monosyllabic form, and, on the other hand, syllable boundary re-adjustment, making the original coda part of the following onset syllable. Resyllabification is very common in OT as in modern Tibetan dialects (e.g. OT, Beyer 1992: 96; Bātáng, Gésāng 1989: 340; Zhōngdiàn, Lù 1990: 156).

(1) Compressions and expansions

Kami provides additional evidence on the so-called “syllabism cycle” in Tibetan, whereby words alternately compressed and expanded into monosyllabic and disyllabic forms (Beyer 1992: 96). Syllable coalescence involving the open root coalescence with nominal suffixes has been discussed and exemplified in §3.3. An example of coalescence of two distinct nominal roots into one monosyllable is <spu rug> /^Htʃhu/ ‘Tibetan woolen cloth’.

The process of expansion of earlier monosyllabic forms into disyllabic forms in the surveyed sample has been essentially noted in connection with the consonant codas *-r* and *-b*. For example:

<phor> > *pho ri > /^Lpha-^Hrə/ ‘bowl’

<'dar> > *'da ri > /^Lnda-^Hrə/ ‘malaria’

<srab leb> > *sra bi leb > /^Hsə-^Hbə-^Hle/ ‘flat’

(2) Syllable boundary re-adjustment

The process of syllable boundary re-adjustment, whereby the original coda makes part of the following onset, creates consonant clusters in the second-syllable initial position. These newly formed initial clusters further follow the regular development of such clusters in non-resyllabified words. A nasal vowel or a nasal coda in the first syllable leads to the formation of prenasalized clusters in the second-syllable-initial position. For example:

<bum pa> > *bu mba > /^lpa-^hnbɔ/ ‘vase’

<rngon khyi> > *rngo ngyi > /^hŋue-^hndzə/ ‘hunting dog’

<nyin gung> > *nyi ngung > /^lni-^hngũ/ ‘noon, midday, afternoon’

An oral coda in combination with the initial *l*- preserves the initial quality of this initial, e.g. <'khor lo> > *kho rlo /^hkhu-^hlu/ ‘wheel’.

An oral coda in combination with a voiceless fricative initial acts as a buffer against aspiration of this initial, e.g. <yug sa> > *yu gsa /^lʒu-^hsɔ/ ‘widow’.

An oral coda in combination with the initial *r*- in some cases develops into a retroflex initial, e.g. <phug ron> > *phu gron > /^lphu-^hdzuẽ/ ‘pigeon’.

Finally, the coda *-d* in combination with the initial *r*- has been attested in one case to develop into Kami /hr/, i.e. <bod rag> /^lpe-^hhra/ ‘Tibetan liquor’, cf. <a rag> /^ha-^hra/ ‘arak, strong liquor, alcoholic drink’.

3.5. Irregularities, dialect mixture

Most Kami words are readily identifiable with known Tibetan roots with the knowledge of (regular and more sporadic) sound correspondences and phonological processes in disyllabic words as outlined above. The percentage of Kami words of unclear origin is relatively low and makes up approximately 15% in the surveyed sample of ca. 2,000 words. Compared to other peripheral dialects, such as Bāsōng <brag gsum> (Qú et al. 1989), Yùshù (Huáng et al. 1994), Báimǎ (Zhāng 1994, 1997; Huáng and Zhāng 1995), or Zhongu (Sun 2003: 792), this percentage is relatively insignificant.

Kami by and large evidences regular changes with the phonological system of OT. The major source of irregularities and multiple sound correspondences is dialect interference, leading to the stratification of Kami lexicon into at least two basic layers: (1) one indigenous and altogether relatively archaic (and exhibiting such changes as OT *lh*- to Kami /hʃ/, *zl*- to /l/, *sbr*- to /nb~m/), and (2) one of mostly culturally-bound inter-dialectal loans.⁶³ The latter layer is further stratifiable into a number of sub-layers as per different sound change, suggesting different donor dialects. Consider some examples:

⁶³ The stratification of Kami lexicon is an issue of considerable complexity, given the sheer number of sound changes discussed above. The challenging task of grouping various changes per layer merits a separate study.

<rma bya> /^Hma-^Hjɔ/ ‘peacock’ (OT *by-* > /j/,⁶⁴ Kami *by-* > /ʃ/)
 <bya ba?> /^Lca-^Hpə/ ‘thing (to do), activity, task’ (OT *by-* > /ɕ/, Kami *by-* > /ʃ/)
 <sbrang yab> /^Ldzã-^Hjʌ/ ‘mosquito net’ (OT *y-* > /j/, Kami *y-* > /z/)
 <g.yung drung> /^Hjuũ-^Hdzũ/ ‘swastika’ (OT *g.y* > /j/, Kami *g.y* > /z/)
 <tshe ring zhwa mo> /^Htshə-^Hrē ^Lca-^Hmu/ ‘traditional Tibetan hat’ (OT *zh(w)-* > /ɕ/,
 Kami *zh(w)* > /x/)

Kami words with unclear etymology, on the other hand, are dispersed all over the lexicon, including:

(1) a small number of basic vocabulary items, e.g. /^Ha-^Hmi/ ‘breast’ (by extension, also ‘milk’), cf. WT <snying ga> or <nu ma>; /^La-^Hju/ ‘good’, cf. WT <bzang po> or <yag po>; /^La-^Hbɛ/ ‘bad’, cf. WT <ngan> or <sdug po>

(2) some cultural vocabulary, e.g. /^Hpi/ ‘boat’, cf. WT <gru>⁶⁵

(3) a number of kinship terms, e.g. /^Ha-^Hnbu/ ‘maternal uncle’, cf. WT <zhang> (see §4.1)

(4) as common in peripheral dialects, some animal and plant names, e.g. /^Lphə-^Lwu-^Lma-^Hki/ ‘bat’, cf. WT <lpags bye'u> or <rga wang krad kyi>, /^Lku-^Hdu/ ‘walnut’, cf. WT <star kha>.

The following observations about the Kami words of obscure origin can be made.

(1) Some words of unclear origin (including those that belong to basic lexicon) are shared with the neighbouring dialects of Dìqìng Prefecture. Consider some examples from Kami and Dōngwāng:

‘breast’: Kami /^Ha-^Hmi/, Dōngwāng /mi⁷⁵³/

‘good’: Kami /^La-^Hju/, Dōngwāng /a¹³ŋō⁵⁵/

‘bad’: Kami /^La-^Hbɛ/, Dōngwāng /a⁵⁵bæ⁷⁵⁵/

‘maternal uncle’: Kami /^Ha-^Hnbu/, Dōngwāng /a⁵⁵mbə^{55/66}/

⁶⁴ The change from WT *b* to /j/ is attested in a restricted number of Kami basic vocabulary words, e.g. <mtsher pa> /^Ltsha-^Hjɔ/ ‘spleen’, or ‘frog’, <sbal pa> /^Lbi-^Hjɔ/, where the intervocal *-p-*, conceivably, first changed to *-b-*, and then to /j/.

⁶⁵ Based on the entry for ‘boat’ in Dài and Huáng (1992: 201), that lists this word in 50 Sino-Tibetan languages, the word for ‘boat’ in Kami bears a surface resemblance with the root ‘boat’ in some little-researched languages of the border areas between China and India, e.g. Taraon [peŋ³⁵], Idu [peŋ³⁵].

⁶⁶ Tentatively, this may be an irregular development of WT <zhang bu>, cf. Bātáng [xã¹³mbɔ⁵³].

(2) Perhaps, somewhat surprisingly, most of remaining words of unclear origin are not shared with the neighboring Qiangic languages. For example, ‘walnut’, Kami /^lku-^hdu/, Shǐxīng /^lqha-^hra/, Lizu /^hkha-^lrə/, Púmǐ /^lkha-^hra/.

Furthermore, local Qiangic languages appear, at times, to have donors for their Tibetan loanwords other than Kami. This is evidenced by the dissimilarity of the loan and the corresponding Kami word, and by sound correspondences of the loan with OT, which are distinct from those in Kami. For example, the word for ‘the universe, the external world’ is /^hdzi-^htɛ-^hkhɔ̃/ in Shǐxīng, WT <’jig rten khams>, and /^lndzã-^hfi/ in Kami, WT <’dzam gling>. The word for ‘flower’ is /^lnbu-^hru/ in Kami, and /^lme-^htɕuo/ or /^lme-^htuo/ in Lizu, and /mi⁵⁵-tɕo¹¹/ in Nàmùzī, WT <me tog>.

4. Areal lexical and structural features

This section focuses on those salient lexical and structural features in Kami, noted in the surveyed sample, that may result from language contact in the area. It essentially focuses on kinship terminology, areal calques, and directional prefixes.⁶⁷

4.1. Lexical features

4.1.1. Kinship terminology

A comprehensive account (functional and historical) of the Kami kinship system and associated terminology is beyond the scope of this article, since collecting and interpreting sufficient genealogical data was impossible in the course of my linguistically-oriented fieldwork. Nonetheless, some mention of Kami kinship terms, be it even preliminary, is warranted in the context of the present discussion, given the exceptional status of Kami kinship terminology in the Tibetan context and its clear links to the kinship systems in neighboring languages.

Compared to kinship terminology, as reflected in Written Tibetan, Kami kinships terms are idiosyncratic. While some of them are traceable to WT, e.g. /^ha-^hni/, <a mes> ‘forefather’; /^la-^hxə/, <a khu> ‘paternal uncle’; some appear unrelatable to any Tibetan etymon, e.g. /^la-^hju/ ‘elder brother’, cf. WT <jo jo>, /^la-^hzi/ ‘elder sister’, cf. WT <gcen mo> or <a cag >.⁶⁸

Altogether, as far as the written language is concerned, WT kinship terms have been analyzed as reflecting a partilineal exogamous social structure with a clear distinction between father’s side and mother’s side, and an emphasis on a continuous vertical line from grandfather to the father’s sons (e.g. Nagano 1994: 105).

At odds with this conclusion, studies on peripheral Tibetan societies in central and southern Tibet (along with Tibetan communities in Nepal and India), reveal rather bilateral kinship systems (e.g. Aziz 1978, Goldstein 1971 and Levine 1988). In these

⁶⁷ I use the term ‘calque’ to refer to compounds and phrases shared by a number of Mùlǐ languages that consist of language specific words in conformity with some shared model. For the moment, I leave aside the issue of the source of this model.

⁶⁸ The words for ‘older brother’ and ‘older sister’ are shared by Kami with Dōngwāng, /a¹³ji⁵⁵/ and /a¹³zi⁵⁵/, respectively (Bartee, this volume), and also by Kami with Shǐxīng, /^la-^hju/ and /^ha-^hzi/, respectively.

systems, descent reckoning is highly limited in its application, it is not simply patrilineal, and it operates chiefly at the periphery of society, among the nobles and outcasts. It is therefore not surprising that it is the marginal pattern of the society's elite, related to hierarchy, rank and lineage, that is reflected in the written language.

While our knowledge of Kham and Amdo societies remains sketchy, on-going anthropological and ethnographic work on non-Tibetan societies of South-West China (the Moso, the Yí, the Púmǐ), including those of Mǔlǐ, suggests a high degree of uniformity underlying areal kinship practices (Hsu 1998, McKhann 1998, Lu 2000, Wellens 2006). The following characteristics of these societies are most notable:

(1) a substantial degree of bilateral kinship reckoning underlying all local social systems (McKhann 1998: 41)

(2) regional preference for cross-cousin marriage, together with high incidence of polygamous marriage: mainly fraternal or adelphic polyandry (in which two or more brothers take one wife), and to a lesser extent sororal polygyny (where sisters marry one husband) (Wellens 2003: 125)

(3) residentially based principles of social organization, or 'houses', which are both residential and kinship groups

(4) interplay of two kinship ideologies: the one bilateral and related to the 'house', and the other unilateral (matrilineal or patrilineal depending on the group) and concerned with hierarchy and rank (Hsu 1998: 90)

The social organization of the Kami conforms to this profile. The importance of 'house', the residential and kinship group, can be glimpsed through the fact that every house in the Kami area is assigned a name, /ʎni-ʰtshǒ ʎnũ/ <mi tshong ming> 'house name'. The name of the house, together with the village name, is ascribed to all its occupants. It is the name of the house by which one is known in one's own locality and in the wider community. In Shuǐluò, this practice is shared at least by the Kami, the Shǐxīng, and the Púmǐ. Take as an example the full name of my main language consultant, Mr. Yáng Lǚróng Duōdīng /ʎtʂhi-ʰra# ʰja-ʎǒ# ʰlu-ʰzũ# ʎthu-ʰdǐ/. His two Tibetan names, /ʰlu-ʰzũ ʎthu-ʰdǐ/ <blo bzang stobs ldan>, are preceded by his native village name, /ʎtʂhi-ʰra/ Qílā, and his house name in the village, /ʰja-ʎǒ/. (In addition, having worked many years in the local administration, my main consultant also has a Chinese family name, Yáng 楊.)

The regional preference for cross-cousin marriage is also reflected in Kami kinship terminology.

The kinship system of the Kami is an ego-focused bilateral kindred simple system with distinctions according to the sex of the kin, according to the relative generation, and according to the age of the kin in relation to ego. Among siblings, the distinction according to the sex of the kin applies only to older siblings, whereas younger siblings are uniformly referred to as /ʎnũ/ 'younger brother or sister'. (The same distinction is also characteristic, among others, for the Shǐxīng, /ʰgǒ/ 'younger brother or sister'.)

Father's brothers are called /^la-^hxə/, <a khu> regardless of their respective age. The mother's brothers, again regardless of their respective age, are called /^la-^hnbu/, <zhang bu>?, which is also the term for father's sister's husband. Father's sister is called /^ha-^hrě/, which is also the term for mother's brother's wife.⁶⁹ Finally, mother's sister is called /^la-^hsū/, <a sru mo>, which is also the term for father's brother's wife. In sum, in this classification, ego's mother's sister's husband is his father's brother and his father's brother's wife is his mother's sister. If taken to reflect the ideal norm, as kinship terminology normally does, the ideal norm for the Kami is cross-cousin marriage, consisting of sister's exchange. In practice, however, it is polygamous marriage that appears most widespread among the Kami.

At odds with the kinship terminology as reflected in WT with its emphasis on a continuous vertical line from grandfather to the father's sons, the emphasis in the Kami system is rather on the mother's line, with the term /^ha-^hmō/ standing for the continuous vertical line from 'grandmother' to 'sister': 'grandmother', 'father's elder brother's wife' (who at the same time is called /^ha-^hrě/) and 'ego's second sister'. /^la-^hsū/ is at the same time 'maternal aunt' and '(male) ego's younger sister'.

In sum, Kami kinship terminology reveals a (etymologically) hybrid system, reflecting the areal pattern of social organization shared by all local Mülī groups.

4.1.2. Areal calques

A characteristic areal lexical feature is the high incidence of common patterns in word formation, common semantic distinctions and extensions, and calques. A further distinction may be drawn between those distinctions which are shared by Kami with *all* Qiangic languages, and those distinctions that are shared by Kami with *some* neighboring Qiangic languages and not with some other Qiangic languages of Mülī.

(1) Word-formation: Diminutives

A pervasive areal pattern is to form diminutives with the diminutive suffix, derived from the word for 'child'.

In Kami, the word for 'child' is /^la-^hka/. The Tibetan etymology of this word is not clear.⁷⁰ The root /ka/ of this word is used as a diminutive suffix. For example, /^ltʃhə-^hka/ 'puppy', <khyi ?>; 'kitten' /^lwu-^hka/, <?>. To compare, in Shǐxīng, the word for '(male) child, man' is /^l-zǒ/. This root is used as a diminutive suffix in a fashion similar to Kami, /^hkhuɜ-^l-zǒ/ 'puppy' (</^hl^hkhuɜ/ 'dog'), /^lma-^l-zɪ-^h-zǒ/ 'kitten' (</^lma-^h-zɪ/ 'cat').

⁶⁹ As suggested to me by Guillaume Jacques, the word /^ha-^hrě/ may be related to WT <sring> 'sister', which, in turn, stems from an earlier form <*ring>.

⁷⁰ This word is shared by Kami with Dōngwāng, /a¹³ka⁵³/. However, the root /ka/ does not appear to be used in the formation of diminutives in this dialect. Dōngwāng uses the WT root <phrug> instead.

Both the WT diminutive root <phrug>, e.g. /^lwu-^htʂhə/ ‘kitten’, and the WT word for ‘child’ <a wo>, Kami /^ha-^hwə/, are also attested in the recorded sample. However, they are far less frequent than /^la-^hka/ and /ka/.

(2) Common semantic distinctions and extensions

Here is an incomplete list of characteristic examples of common semantic distinctions and extensions:

The verb ‘to float’ is a semantic extension of the verb ‘to fly’ (this homophony is already characteristic of WT). Both verbs are /^hdī/, WT <lding> in Kami. The same applies to Lizu: /^hbze/ ‘to fly’ vs. /^hde-^lbze-^lbze/ ‘to float’ (</de-/ is a directional prefix, meaning ‘upward’). The two verbs are, however, distinct in Shǐxīng: /^hdzē/ ‘to fly’ and /^hpu/ ‘to float’.

The noun ‘mute’ (by extension, also ‘dumb person, idiot’) distinguishes between a male mute and a female mute, respectively, Kami: /^lpə-^hku/ <bu skugs> and /^lmə-^hku/ <mu skugs>, Shǐxīng: /^lzō-^htʂɜ/ and /^hmi-^ltʂɜ/; or Púmǐ: /^hdzu³³yiã⁵⁵/ and /^hmɛ⁵⁵yiã⁵⁵/. Conversely, this distinction is not made in Lizu, /^lzə-^hkæ/ ‘mute’, or in Nàmùzī, /^la-^hqa/ ‘mute’.

(3) Calques

The verb ‘to flow’ is a nominal predicate expression consisting of the noun ‘water’ and the verb ‘to go’, e.g. in Kami /^htʂhə ^lndzu/ <chu 'gro>, in Shǐxīng /^hdzɜ ^hbi=^hji/ (</dzɜ/ ‘water’, /^lbi/ ‘walk’, /ji/ is the progressive marker), or in Nàmùzī [ndzɪ⁵⁵=qhæ¹¹ bje⁵⁵] (< [ndzɪ⁵⁵] ‘water’, /qhæ/, (bound root) measure word for elongated objects; [bje⁵⁵] ‘walk, go’).

The verb ‘to give birth’ in Kami literally means ‘to see (the child’s) face’, /^hdō ^lthō/ (</dō-^hku/ <gdong ?> ‘face’, /^hthō/ <mthong> ‘to see’). This formation has an exact parallel in Shǐxīng: /^lza-^lmi ^lphã-^hdō/ (</za-^hmi/ ‘child’, /^hphã/ ‘face’, /^ldō/ ‘see’). On the other hand, this calque is not shared by Lizu, which has a monosyllabic root, /^hdzi/, to express the meaning ‘to give birth’.

The few examples mentioned in this section suggest that it is a promising direction to consider Kami lexicon in its areal context in a more systematic fashion.

One more salient areal pattern adapted in the form of morphemic substitution in Kami is the use of verbal directional prefixes, as discussed in the following section.

4.2. Directional prefixes and miscellaneous morphosyntactic innovations

The use of directional prefixes is one of the quintessential Qiangic features. In Huáng Bùfán’s (1994) analysis, the fact that this areally dominant yet strikingly non-Tibetan

feature is also shared by Kami, suggests that its presence in Kami is due to language contact.⁷¹

The following additional observations concerning the use of directional prefixes in Kami can be made.

(1) The use of directional prefixes is characterized by a certain degree of geographical, temporal and/or individual variation. This is evidenced by dissimilarities between my own recent fieldwork and Huáng's (1994) Kami data based on her fieldwork in the late 1980s. (Unfortunately, Huáng does not specify which sub-dialect of Kami she worked on.) Notably, of the five Kami directional prefixes quoted by Huáng, only four are shared with my data, namely, (i) /phæ-/ <phar> 'towards oneself', (ii) /tshæ-/ <tshar> 'away from oneself', (iii) /jæ-/ <jar> 'upward', and (iv) /mæ-/ <mar> 'downward'. The fifth prefix quoted by Huáng, /tæ¹³-/ 'to the place of origin', which she analyzes as derived from the verb <bsdad> 'to dwell, to sit' and which is said to co-occur with verbs of posture, has not been attested in the speech of my language consultants. At the same time, my consultants marginally use one directional prefix that is not attested by Huáng: /nõ-/ 'inward', <nang>, as in /^Hnõ-^Lthě/ 'to look inside'.

(2) Dissimilarity of sound changes in Kami basic lexicon and directional prefixes, i.e. /ja-/ 'upward', from <yar> 'upwards, above, up' vs. <g.yar> /ʒɛ/ (/ʌzɛ/) 'to borrow (objects)'.

(3) Restricted scope of use and lower degree of grammaticalization, as compared to directional prefixes in the neighboring languages.

In Kami, most verbs do not require to be accompanied by a directional prefix when quoted in isolation, e.g. /^Hjõ/ <long> 'to take, to hold', /^Htshi/ <khrid> 'to lead', /^Lgu/ 'to kneel' (the Tibetan etymology of this root is unclear). The use of directional prefixes on verbs serves either (i) to distinguish various meanings correlated with one stem, e.g. <jus> /^Hndzə/ 'to grab, to seize, to grasp' vs. /^Lja-^Hndzə/ 'to pick up' vs. /^Ltsha-^Hndzə/ 'to hold' or (ii) to denote telicity and perfectivity, as in the example below, or to form imperative, as in /^Hma-^Lndə/, <mar 'dug>, 'sit down!':

- (1) ^Hphu# ^Lki-^Hsɛ# ^Lma-^Hõ# ^Lbi-^Hjɔ# ^Lpa-^Hku# ^Lʒu# ^Lma=^Hre#, ^Lkhə=^Hi# ^Lmə-^Hjõ=^Lʌə#
^Lni=^Hnõ# ^Lpha-^Hsa.
- | | | | | |
|----------------------|----------------------------------|---------------------------------|----------------------------------|----------------------------------|
| ^H phu | ^L ki- ^H sɛ | ^L ma- ^H õ | ^L bi- ^H jɔ | ^L pa- ^H ku |
| ? | <i>ge sar</i> | <i>mar 'ong</i> | <i>sbal pa</i> | <i>lpags ko</i> |
| <i>personal.name</i> | <i>personal.name</i> | downward-come | frog | skin |
- ^Lʒu ^Lma=^Hre ^Lkhə=^Hi ^Lmə-^Hjõ=^Lʌə ^Lni=^Hnõ ^Lpha-^Hsa

⁷¹ The presence of directional prefixes in Kami is not altogether unparalleled in other Tibetan dialects. A relatively well known case is Báimă (Huáng and Zhāng 1995: 112-113), which has as many as 13 directional prefixes. Zhongu, on the other hand, exhibits a development of imperative markers from WT directional terms (Sun 2003: 797, footnote 51).

<i>yod</i>	<i>ma=red</i>	<i>kho='i</i>	<i>mo-?=?</i>	<i>me=nang</i>	<i>phar sreg</i>
have	NEG.PST=COP	3SG=GEN	woman-?=ERG	fire=inside	outward-burn

‘When King Gesar returned home, the frog skin was already gone, it was burned by his wife.’

To compare, Shǐxīng has a more grammaticalized system of directional prefixes: (i) Shǐxīng has a larger number of directional prefixes (six in total), most of which (five) are used with high frequency, both on verbs in isolation and in connected speech; (ii) Shǐxīng’s directional prefixes are associated with a larger range of contexts; (iii) They are more clearly associated with the grammatical meaning (with one prefix, /lɜ-/ , denoting the perfective meaning exclusively); (iv) The use of directional prefixes in Shǐxīng is more more obligatory than optional (see Chirkova 2009 for an overview).

In sum, directional prefixes in Kami are characterized by geographical, temporal and/or individual variation, relatively low degree of grammaticalization and sound correspondences distinct from those in the basic lexicon. Hence, directional prefixes in Kami are altogether a relatively marginal and possibly recent feature.

Some additional distinct morphosyntactic innovations of Kami, as compared to its kin Tibetan dialects, are:

(1) the inclusive-exclusive distinction in the first person plural pronoun, viz. the exclusive form /lŋa-^Hrã/ <nga rang>, and the inclusive form /la-^Lkhə-^Hrã/ <? rang> (of unclear Tibetan origin);

(ii) the marginal use of measure words, /lŋə-^Hngu ʌtɕi/ ‘one person’ <mi mgo gcig>, where /^Hngu/, WT <mgo>, is used as a measure word to count people;

(iii) the unusual types of adjective formation; these include (a) extensive use of reduplication (expressing intensification), e.g. /lhŋũ-^Hhŋũ/ <sngon sngon> ‘green, blue’, /lɜ̃-^Hɜ̃/ <yang yang> ‘light’; (b) adjective formation with the prefix *a-*, e.g. /la-^Hŋu/ ‘good’, /la-^Hbɛ/ ‘bad’; (c) formation of adjectives of dimensional extent (i.e. those that form a semantic field of opposites, e.g. *deep-shallow*, *long-short*), whereby the negative extensives are partly or completely replaced by forms derived from the positive ones, e.g. /^Htsõ/ <gtsang> ‘clean’, /la-^Htsõ/ <mi gtsang> ‘dirty’.⁷² Taken in the areal context, all three types are characteristic for Nosu (Bradley 1995) as well as the neighboring Qiangic languages.

(iv) Finally, one more morphosyntactic innovation of Kami is an elaborate system of existential verbs, reflecting evidentiality distinctions (old knowledge vs. new knowledge). More precisely, Kami has a set of neutral existential verbs (for old knowledge) and a corresponding set of etymologically related verbs (tentatively, with an evidential morpheme coalesced with the verb root) for new knowledge, e.g. /lɜu/

⁷² The majority of such adjectives are formed with the past (and imperative) negative marker /ma/, as in this example. A handful of adjectives are also formed with the non-past negative marker /mu/, e.g. /mu-^Hgɔ/ ‘disagreeable, disgusting’ (from <mi>, negator, and <dga> ‘to like’).

<yod> ‘to have, to possess (by the speaker)’ vs. /-zã/ <yod.ʔ> ‘to exist out there, beyond the speaker’s control’.⁷³

To sum up, Kami has a number of features that are not widely shared by Tibetan dialects, whether at large or in the Kami neighborhood (e.g. Dōngwāng and Zhōngdiàn), but they are shared between Kami and neighbouring Qiangic languages of Mùli.⁷⁴ The shared features are arguably areal ‘models’, filled by language-specific non-cognate forms and differing by specific semantic contexts and the degree of grammaticalization per language. Notably, not all such features are shared by all Qiangic languages and Kami, which potentially enables us to determine the degree of contact between Kami and individual Qiangic languages.

5. Summary and discussion

Characteristic features of Kami as dissimilar from general Khams tendencies (such as the development of OT cluster with the preradical *s*- and a nasal root initial into voiceless nasals) can be summarized as follows:

- (1) Conditioned split of OT palato-alveolars, leading to the development of distinct uvular reflexes before OT non-high non-front vowels
- (2) OT *Ky*- and *Py*- clusters became palato-alveolar affricates and fricatives, respectively, for some speakers, and alveo-palatal affricates and dental fricatives, respectively, for some other speakers. For the latter category of speakers, in some words, OT *sky*- became /s̺/
- (3) OT *y*- became /z̺/ for some speakers and /z/ for some other speakers
- (4) The unprefixated OT root initial *l*- became /j/
- (5) OT *lh*- became /hj/ and /hl/. In the latter case, some reflexes of OT *lh*- merged with the reflexes of the OT cluster *sl*-
- (6) OT *zl*- became /l/ and /nd/
- (7) OT *sbr*- became /nb~m/ and /dz/
- (8) OT closed syllables with consonantal codas developed into innovative vowels and diphthongs, without glottal stop codas or contrastive vowel length
- (9) The development in (8) conditioned a simple tone system with the basic register distinction, High vs. Low (and a number of atonal roots from OT prefixed clusters with a voiced initial, undergoing the process of devoicing)

⁷³ The peculiar forms and functions of existential verbs appear to be a widespread feature of many Khams dialects (Hongladarom 2007: 123).

⁷⁴ The issue of whether or not these features are also shared by the local Na and Nosu varieties requires further investigation.

(10) A register tone system is combined in Kami with a system of metrical stress (with a iambic pattern for nominal constructions and a trochaic pattern for verbal constructions)

(11) Presence in Kami of directional prefixes, marginally, also measure words, non-Tibetan types of adjective formation, an elaborate system of existential verbs reflecting evidentiality distinctions (old knowledge vs. new knowledge).

These characteristic features can be further divided into retentions, such as (5)-(7), and innovations. Innovations can be further divided into those specific to Kami, such as (1) and (8)-(10), and those that are attested in other peripheral Tibetan dialects, such as (3) and (4).

In terms of its connection to the dialects of Dìqìng Prefecture, of which only Zhōngdiàn and Dōngwāng have been documented to date, and with which Kami has been argued to constitute one sub-cluster, the following conclusions can be made. In view of its characteristic developments as summarized above, Kami is highly distinct from Zhōngdiàn. At the same time, Kami is closer Dōngwāng, with which dialect it shares some retentions, i.e. (5) and (6), some innovations, i.e. (3) and (4), and some words of unclear Tibetan etymology. Conversely, the innovative developments, as well as also some words of unclear Tibetan etymology, shared by Kami and Dōngwāng, are not restricted to these two dialects, and have been attested in other Tibetan dialects spoken in the historical frontier areas between Tibet and China. For instance, the change from OT *y-* to *z-* is also attested in Zhongu, whereas the change from OT *l-* to *j-* is also known for Báimǎ. All in all, based on my preliminary findings, classification of Zhōngdiàn, Dōngwāng, and Kami into one sub-cluster of Khams dialects on linguistic grounds (e.g. phonological and lexical isoglosses), as opposed to, for instance, their geographic proximity, does not appear warranted. Instead, the possibility of the Tibetan dialects of the “ethnic corridor” forming one group defined by a number of characteristic traits appears more promising.⁷⁵

Finally, those (mostly morphosyntactic) innovations that do not appear to be shared by Kami with other documented Tibetan dialects, such as (8), (10) and (11), can be by and large transparently attributed to areal diffusion. Spoken in the geographical zone occupied by Qiangic languages, Kami appears to possess almost an entire set of features which are held as characteristic of the Qiangic subgroup, as outlined in Sūn (1983, 2001), namely: (1) large consonant and vowel inventories; (2) uvular phonemes; (3) a distinction between prenasalized and plain consonants; (4) tones (or, rather, stress-based prosodic systems); (5) diminutives formed with the root for ‘child’; (6) extensive use of reduplication in word formation; (7) measure words; (8) case forms of personal pronouns (which feature is, in fact, common in many Khams dialects, as shown by Gésāng and Gésāng (2002: 83), and has therefore not been included in the above overview); (9) directional prefixes; (10) multiple existential (locative) verbs.

⁷⁵ In addition to some phonological isoglosses delimiting this area (e.g. uvular phonemes, changes from OT *l-* to *j-*, OT *y-* to *z-*, OT *Py-* to *s-*), I tentatively propose some lexical similarities, as exemplified by Kami and Zhongu, two dialects situated in the southern and northern extremities of the area. For example, both dialects share the word for ‘bad’ of uncertain Tibetan etymology, Kami /^la-^hbɛ/, Zhongu /a-bɛ/. In the disyllabic form for ‘kidney’, WT <mkhal ma>, the second syllable is /lɛ/ in both dialects, Kami /^hkhe-^hlɛ/, Zhongu /^htʃhi-lɛ/ (Sun 2003: 816, 834), whereas other Tibetan dialects show *-ma* suffix. Kami and Zhongu share the unusual suffix /kwa/, Kami /-kua/, Zhongu /-qo/ (Sun 2003: 782).

That a Tibetan dialect shares this set of features with non-Tibetic languages warrants examining in greater detail the hypothesis that these features delineate an areal group, rather a phylogenetic group. This further entails that, if taken to be an areal group, the scope of Qiangic is not restricted to the little-known obscure languages spoken in the multi-lingual historical frontier areas between Tibet and China, and needs to be enlarged to include the local varieties of better known languages, such as Kami (Tibetan) or the local varieties of Na and Ngwi. The number of characteristic features of the area should also be reconsidered in order to, on the one hand, single out non-trivial characteristic features (i.e. those that are typologically unusual and therefore unlikely to be due to chance, such as stress-based prosodic systems), and, on the other hand, take into account those features which may be present in some, but absent in some other languages (as I observed in the discussion on calques, above). This will potentially fragment the area into those languages that, in terms of the overall number of features, are more central to the area, and those that are more marginal.

While necessary work to uncover these sets of non-trivial features is yet to be undertaken, I would like to tentatively suggest possible directions for further research. As observed in the case of Kami, the areal Qiangic features that it possesses (such as directional prefixes), appear to vary with respect to the degree of their grammaticalization. This enables a diachronic interpretation of the process of grammaticalization as it is spread in physical space as the path in grammatical space along which the grammaticalization process has proceeded (cf. Dahl 2001). This may furthermore shed some light on the intriguing issue of the source of the areal features and patterns. At the same time, given that *Sprachbünde* are rarely if ever a uniform phenomenon linguistically, socially, or historically, and that the history of area-wide and local contact situations in Mùlǐ (as in Qiangic at large) were particularly complex over time, it is most likely that multiple causation and multiple motivations for the attested patterns need to be argued for. This is to say that different features are likely to have arisen in different places at different times and then spread differentially within the Qiangic *Sprachbund* (cf. Thomason 2000 for Balkan languages).

Future studies may reveal the exact scenario(s) of language contact and the precise genetic affiliation(s) of the obscure languages currently grouped under the label “Qiangic”. In this article, I merely tried to show that further progress in our understanding of the history and affiliation(s) of these languages and the complex multilingual area in which they are spoken, is contingent upon in-depth work on all of its languages, approached holistically and as fundamentally relational to each other. In this process, languages of better understood affiliation, such as Kami Tibetan, will continue to play an important role as a litmus test for contact-induced change.

Abbreviations

- > changes into
- < develops from
- indicates that the syllables that a dash connects constitute one single word
- ~ indicates free variation between two forms
- ,
- ;
- ? indicates a morpheme whose meaning is unclear or, if attached to a word, signals that the meaning or the etymon that this word represents is tentative
- * unattested form which has been historically reconstructed or, in the word list, a combination of two etymons that is not attested in WT (as based on the

	Rangjung Yeshe Tibetan-English dictionary, www.nitartha.org/dictionary.html)
#	indicates a juncture between two tonal domains
=	separates an enclitic from its host word
3	third person singular pronoun
C	consonant
COP	copula
ERG	ergative
GEN	genitive
IMP	imperative
INTR	intransitive
K	velar
M	medial
MC	Middle Chinese, in Baxter (1992) notation
N	noun
NEG	negation
OT	Old Tibetan
P	labial
PST	past
SWM	South-West Mandarin, represented by the dialect of Mùlǐ, recorded by Lǐ Lán 李藍 (p.c.)
TR	transitive
V	vowel (in the main part of the article) or verb (in the English-Kami word list)
WT	Written Tibetan

References

- Acuo, Yeshes Vodgsal Atshogs, 意西微薩·阿錯. 2008. Chéngzhāng Zàngyǔ de yīnxì 程章藏語的音系 / The phonological system of Chengzhang Tibetan. Paper presented at the Workshop on Tibeto-Burman languages of Sichuan, Institute of Linguistics, Academia Sinica, Taipei, Taiwan. November 21-22, 2008.
- Aziz, Barbara Nimri. 1978. *Tibetan Frontier Families: Reflections of Three Generations from D'ing-ri*. New Delhi: Vikas.
- Baxter, William H. 1992. *A Handbook of Old Chinese Phonology*. Berlin: Mouton de Gruyter.
- Beyer, Stephan V. 1992. *The Classical Tibetan Language*. Albany: State University of New York Press.
- Bradley, David. 1995. Grammaticalisation of extent in Mran-Ni. *Linguistics of the Tibeto-Burman Area* 18.1: 1-28.
- Chirkova, Katia. 2008. Essential characteristics of Lizu, a Qiangic language of Western Sichuan. Paper presented at the Workshop on Tibeto-Burman languages of Sichuan, Institute of Linguistics, Academia Sinica, Taipei, Taiwan. November 21-22, 2008.
- . 2009. Shǐxīng, a Sino-Tibetan language of South-West China: A grammatical sketch with two appended texts". *Linguistics of the Tibeto-Burman Area* 32.1: 1-90.
- Chirkova, Katia, and Alexis Michaud. 2009. Approaching the prosodic system of Shǐxīng. *Language and Linguistics* 10.3: 539-568.
- Dài Qìngxià 戴慶夏, and Huáng Bùfán 黃布凡 (eds.) 1992. *Zàng-Mián Yǔzú Yǔyán Cihùi* 《藏緬語族語言詞彙》 / *A Tibeto-Burman Lexicon*. Běijīng 北京: Zhōngyāng Mínzú Xuéyuàn Chūbǎnshè 中央民族學院出版社.

- Dahl, Östen. 2001. Principles of areal typology. *Language Typology and Language Universals, Sprachtypologie und Sprachliche Universalien: An International Handbook*, ed. by Martin Haspelmath, Ekkehard Koenig, Wulf Oesterreicher, & Wolfgang Raible, 1456-1470. Berlin & New York: Walter de Gruyter.
- Denwood, Philip. 1999. *Tibetan*. Amsterdam & Philadelphia: John Benjamins.
- Gésāng Jūmiǎn 格桑居冕 (skal bzang 'gyur med). 1964. *Zàngyǔ Fāngyán Gàiyào* 《藏語方言概要》 / *Bod kyi yul skad gces bsdus* / *Essentials of Tibetan Dialects*. Běijīng 北京: Zhōngyāng Mínzú Xuéyuàn Yǔwénxì 中央民族學院語文係.
- . 1989. Phonological analysis of Batang Tibetan. *Acta Orientalia Academiae Scientiarum Hung.* 18.2-3: 331-358.
- Gésāng Jūmiǎn 格桑居冕 (skal bzang 'gyur med), and Gésāng Yāngjīng 格桑央京 (skal bzang dbyangs chan). 2002. *Zàngyǔ Fāngyán Gàilùn* 《藏語方言概論》 / *Bod kyi yul skad rnamb shad* / *An Introduction to Tibetan Dialects*. Běijīng 北京: Mínzú Chūbǎnshè 民族出版社.
- Goldstein, Melvyn C. 1971. Stratification, polyandry, and family structure in Central Tibet. *Southwestern Journal of Anthropology* 27.1: 64-74.
- Hall, T. Allen. 1997. *The Phonology of Coronals*. Amsterdam: John Benjamins.
- Haller, Felix. 1999. A brief comparison of register tone in Central Tibetan and Kham Tibetan. *Linguistics of the Tibeto-Burman Area* 22.2: 77-98.
- Häsler, Katrin Louise. 1999. *A Grammar of the Tibetan Sde.dge Dialect*. Berne University: Ph.D. dissertation.
- Hongladarom, Krisadawan. 1996. Rgyalthag Tibetan of Yunnan: A preliminary report. *Linguistics of the Tibeto-Burman Area* 19.2: 69-92.
- . 2007. Grammatical peculiarities of two dialects of southern Kham Tibetan. *Linguistics of the Himalayas and Beyond*, ed. by Roland Bielmeier, and Felix Haller, 119-152. Berlin & New York: Mouton de Gruyter.
- Hsu, Elisabeth. 1998. Moso and Naxi: the House. *Naxi and Moso Ethnography*, ed. by Michael Oppitz, and Elisabeth Hsu, 67-99. Zürich: Völkerkundemuseum Zürich.
- Hú Tǎn 胡坦. 1991. *Zàngyǔ* 《藏語》 [The Tibetan language]. *Hàn-Zàng Yǔ Gàilùn* 《漢藏語概論》 [A General Introduction to Sino-Tibetan Languages], ed. by Mǎ Xuéliáng 馬學良, vol. 2, 109-207. Běijīng 北京: Běijīng Dàxué Chūbǎnshè 北京大學出版社.
- Huá Kǎn 華侃, and Gǎzàngtā 尕藏他. 1997. *Zàngyǔ Sōngpānhuà de yīnxì hé yǔyīn de lìshǐ yǎnbìan* 藏語松潘話的音系和語音的歷史演變 [Sound system of Sōngpān Tibetan and its historical development]. *Zhōngguó Zàngxué* 《中國藏學》 [Tibetology in China] 29.2: 134-44.
- Huáng Bùfán 黃布凡. 1991. *Qiāngyǔ zhī yǔyán* 《羌語支》 [Qiangic Languages]. *Hàn-Zàng Yǔ Gàilùn* 《漢藏語概論》 [A general introduction to Sino-Tibetan languages], ed. by Mǎ Xuéliáng 馬學良, vol. 2, 208-369. Běijīng 北京: Běijīng Dàxué Chūbǎnshè 北京大學出版社.
- . 1994. *Zàng-Miǎn yǔ dòngcí de qūxiàng fànchóu* 藏緬語動詞的趨向範疇 [The category of directionality in Tibeto-Burman verbs]. *Zàng-Miǎn Yǔ Xīn Lùn* 《藏緬語新論》 [Recent Contributions to Tibeto-Burman Studies], ed. by Mǎ Xuéliáng 馬學良, 133-151. Běijīng 北京: Zhongyang Minzu Daxue Chubanshe.

- . 1995. Conditions for tonogenesis and tone split in Tibetan dialects. *Linguistics of the Tibeto-Burman Area* 18.1: 43-62.
- Huáng Bùfán 黃布凡, and Rénzēng Wāngmǔ 仁增旺姆. 1991. Shǐxīngyǔ 史興語 [The Shǐxīng language]. *Zàng-Miányǔ shíwú zhǒng* 《藏緬語十五種》 / *Fifteen Tibeto-Burman Languages*, ed. by Dài Qìngxìà 戴慶夏, Huáng Bùfán 黃布凡, Fù Àilán 傅愛蘭, Rénzēng Wāngmǔ 仁增旺姆 & Liú Júhuáng 劉菊黃, 174-197. Běijīng 北京: Běijīng Yànshān Chūbǎnshè 北京燕山出版社.
- Huáng Bùfán 黃布凡, Suǒnán Jiāngcái 索南江才, and Zhāng Míng huì 張明慧. 1994. Yùshù Zàngyǔ de yǔyīn tèdiǎn hán lìshǐ yǎnbiàn guīlǜ 玉樹藏語的語音特點含歷史演變規律 [Characteristics of Yushu Tibetan phonology and its rules of historical change]. *Zhōngguó Zàngxué* 《中國藏學》 [Tibetology in China] 26.2: 111-134.
- Huáng Bùfán 黃布凡, and Zhāng Míng huì 張明慧. 1995. Báimǎhuà zhīshǔ wèntí yánjiū 白馬話支屬問題研究 [A study of the genetic affiliation of Báimǎ]. *Zhōngguó Zàngxué* 《中國藏學》 [Tibetology in China] 2: 79-118.
- Kessler, Peter. 1986. *The Historical Kingdom of Mili*. Zürich, Tibet-Institut Rikon, Laufende Arbeiten zu einem Ethnohistorischen Atlas Tibets (EAT).
- Levine, Nancy E. 1988. *The Dynamics of Polyandry: Kinship, Domesticity, and Population on the Tibetan Border*. Chicago: University of Chicago Press.
- Lù Shào zūn 陸紹尊. 1990. Zàngyǔ Zhōngdiàn huà de yǔyīn tèdiǎn 藏語中甸話的語音特點 [Phonological characteristics of rGyal-thang Tibetan]. *Yǔyán Yánjiū* 《語言研究》 [Linguistic Study] 2: 147-159.
- . 2001. *Púmǐyǔ fāngyán yánjiū* 《普米語方言研究》 [A Dialectal Study of the Púmǐ Language]. Běijīng 北京: Mínzú Chūbǎnshè 民族出版社.
- . 2002. *Ménbāyǔ fāngyán yánjiū* 《門巴語方言研究》 [A Dialectal Study of the Ménbā Language]. Běijīng 北京: Mínzú Chūbǎnshè 民族出版社.
- Lu Hui. 2001. Preferential bilateral-cross-cousin marriage among the Nuosu in Liangshan. *Perspectives on the Yi of Southwest China*, ed. by Stevan Harrell, 68-80. Berkeley, Los Angeles & London: University of California Press.
- McKhann, Charles. 1998. Naxi, Rerkua, Moso, Meng: Kinship, politics and ritual on the Yunnan-Sichuan frontier. *Naxi and Moso Ethnography*, ed. by Michael Oppitz, and Elizabeth Hsu, 23-45. Zürich: Völkerkundemuseum Zürich.
- Mùlǐ Zàngzú Zìzhìxiàn Zhì Biānzúǎn Wěiyuánhuì 木里藏族自治州誌編纂委員會 [Mùlǐ Tibetan Autonomous County Gazetteers Editing and Compiling Committee] (eds.). 1995. *Mùlǐ Zàngzú Zìzhìxiàn Zhì* 《木里藏族自治州誌》 [Gazetteers of Mùlǐ Tibetan Autonomous County]. Chéngdū 成都: Sìchuān Rénmín Chūbǎnshè 四川人民出版社.
- Nagano Sadako. 1994. A note on the Tibetan kinship terms *khu* and *zhang*. *Linguistics of the Tibeto-Burman Area* 17.2: 103-115.
- Qú Āitáng 瞿靄堂. 1991. *Zàngyǔ Yùnmǔ Yánjiū* 《藏語韻母研究》 [A Study of Tibetan Rhymes]. Xīníng 西寧: Qīnghǎi Mínzú Chūbǎnshè 青海民族出版社.
- Qú Āitáng 瞿靄堂, and Jīn Xiàojìng 金效靜. 1981. Zàngyǔ fāngyán de yánjiū fāngfǎ 藏語方言的研究方法 [Methods in the study of the Tibetan dialects]. *Xīnán Mínyuàn Xuébào* 《西南民院學報》 [Scholarly Journal of the Southwest Institute for Nationalities] 3: 76-83.

- Qú Āitáng 瞿霽堂, Gòng Què 共確, Yì Xī 益西, & Jié Áng 結昂. 1989. Wèizàng fāngyán de xīn túyǔ—Jì zuìjìn fāxiàn de Bāsōnghuà 衛藏方言的新土語——記最近發現的巴松話 [A new subdialect of Central Tibetan: On the newly discovered Basong dialect]. *Mínzú Yǔwén* 《民族語文》 [Minority Languages] 3: 39-61.
- Spengen, Wim van. 2002. Frontier history of Southern Kham: Banditry and war in the multi-ethnic fringe lands of Chatring, Mili, and Gyelthang, 1890-1940. *Khams pa Histories*, ed. by Lawrence Epstein, 7-29. Leiden, Boston & Köln: Brill.
- Sun, Jackson T.-S. 孫天心. 1997. Typology of tone in Tibetan. *Chinese Languages and Linguistics IV: Typological Studies of Languages in China*, 485-521. Symposium Series of the Institute of History and Philology, Academia Sinica, Number 2. Taipei: Academia Sinica.
- . 2001. Variegated tonal developments in Tibetan. *Language Variation: Papers on Variation and Change in the Sinosphere and in the Indosphere in Honor of James A. Matisoff*, ed. by David Bradley, Randy LaPolla, Boyd Michailovsky, & Graham Thurgood, 35-51. Pacific Linguistics. Canberra: Australian National University.
- . 2003. Phonological profile of Zhongu: A new Tibetan dialect of Northern Sichuan. *Language and Linguistics* 4.4: 769-836.
- Sūn Hóngkāi 孫宏開. 1982. Ērsū (Duōxù) huà jiǎnjiè 爾蘇（多續）話簡介 [An outline of Ērsū (Duōxù)]. *Yǔyán Yánjiū* 《語言研究》 [Linguistic Study] 2: 241-264.
- . 1983a. Liùjiāng liúyù de mínzú yǔyán jí qí xìshǔ fēnlèi 六江流域的民族語言及其係屬分類 [Minority languages of the six river valley and their genetic classification]. *Mínzú Xuébào* 《民族學報》 [Scholarly Journal of Nationalities] 3: 99-274.
- . 1983b. Chuān xī mínzú zǒuláng dìqū de yǔyán 川西民族走廊地區的語言 [Languages of the ethnic corridor of Western Sìchuān]. *Xīnán Mínzú Yánjiū* [Studies on the Southwest Nationalities] 《西南民族研究》, ed. by Zhōngguó Xīnán Mínzú Yánjiū Xuéhuì 民族研究學會 [Association of Studies on China Southwest Nationalities], 429-454. Chéngdū 成都: Sìchuān Mínzú Chūbǎnshè 四川民族出版社.
- . 2001. Lùn Zàng-Mián yǔzú zhōng de Qiāng yǔzhī yǔyán 論藏緬語族中的羌語支語言 [On the Qiangic branch of the Tibet-Burman language family]. *Language and Linguistics* 2.1: 157-181.
- Suzuki Hiroyuki. 2008. /l-/j/ interchange in Shangri-La Tibetan. Paper presented at the 41st ICSTLL Conference, SOAS, London, 18-21 September 2008.
- Thomason, Sarah Grey. 2000. Linguistic areas and language history. *Languages in Contact*, ed. by Dicky Gilbers, John Nerbonne, & Jos Schaecken, 311-327. Amsterdam: Rodopi.
- Thurgood, Graham. 2003. A subgrouping of the Sino-Tibetan languages: The interaction between language contact, change, and inheritance. *The Sino-Tibetan Languages*, ed. by Graham Thurgood, & Randy J. LaPolla, 3-21. London: Routledge.
- Wang Xiaosong. 1996. Prolegomenon to Rgyalthang Tibetan phonology. *Linguistics of the Tibeto-Burman Area* 19.2: 55-67.
- Wellens, Koen. 2006. *Consecrating the Premi House: Ritual, Community and the State in the Borderlands of East Tibet*. University of Oslo: Ph.D. dissertation.

- Wylie, Turrell. 1959. A standard system of Tibetan transcription. *Harvard Journal of Asiatic Studies* 22: 261-267.
- Xiè Jiànyóu 谢建猷. 1992. Mùlǐ duōyǔ shèqū 木裏多語社區 [On the multi-lingual community of Mùlǐ]. *Mínzú Yǔwén Yánjiū Xīntàn* 《民族語文研究新探》 [Advances in Studies on Minority Languages of China], ed. by Mǎ Xuéliáng 馬學良 et al., 47-58. Chéngdū 成都: Sìchuān Mínzú Chūbǎnshè 四川民族出版社.
- Zhāng Jìchuān 張繼川. 1993. Zàngyǔ fāngyán fēnlèi guǎnjiàn 藏語方言分類管見 [Opinions on the classification of Tibetan dialects]. *Mínzú Yǔwén Lùnwénjí* 《民族語文論文集》 [Papers on Minority Languages], ed. by Dài Qìngxià 戴慶夏, Luó Měizhēn 羅美珍, Yáng Yìngxīn 楊應新, 297-309. Běijīng 北京: Central College of Nationalities Press 中央民族學院出版社.
- . 1994a. Báimǎhuà yǔ Zàngyǔ (shàng) 白馬話與藏語（上） [Báimǎ and Tibetan (Part 1)]. *Mínzú Yǔwén* 《民族語文》 [Minority Languages] 2: 11-24.
- . 1994b. Báimǎhuà yǔ Zàngyǔ (xià) 白馬話與藏語（下） [Báimǎ and Tibetan (Part 2)]. *Mínzú Yǔwén* 《民族語文》 [Minority Languages] 3: 58-67.
- . 1996. Gǔdài Zàngyǔ fāngyīn chābié yǔ zhèngzìfǎ 古代藏語方音差別與正字法 [Old Tibetan dialectal differences and Tibetan orthography]. *Mínzú Yǔwén* 《民族語文》 [Minority Languages] 3: 22-24.
- . 1997. Particularités phonétiques du Báimǎ. *Cahiers de Linguistique—Asie Orientale* 26.1: 131-153.