THE DUHUMBI PERSPECTIVE ON PROTO-WESTERN KHO-BWA RHYMES

ABSTRACT

The Western Kho-Bwa languages form a small, coherent sub-group of linguistic varieties belonging to the Tibeto-Burman language family. They are spoken in West Kameng district of the state of Arunachal Pradesh in Northeast India. The total Western Kho-Bwa speaker population is less than 6,000 and all varieties are endangered.

This paper presents almost 100 sound correspondences, mainly between the two Western Kho-Bwa varieties Duhumbi and Khoitam, with additional evidence from other Western Kho-Bwa varieties and other Tibeto-Burman languages whenever deemed illustrative. On basis of these sound correspondences, I propose 256 Western Kho-Bwa proto-forms in this paper.

The more remarkable feature about the Western Kho-Bwa reconstructions is the degree to which rhymes can actually be reconstructed, which can be largely attributed to the conservative preservation of plosive, nasal, approximant and fricative rhymes in Duhumbi and Khispi and the highly divergent vocal cognates of these rhymes in the Sartang and Sherdukpen varieties.

1. INTRODUCTION

This paper presents a concise overview of the main sound correspondences that have been identified for the Western Kho-Bwa rhymes.

The Kho-Bwa languages. In 1952, Stonor, basing himself on local sources, reported that two languages spoken by the small communities in the Eastern Himalayas known as ‘Sulung’ and ‘Khowa’ are mutually intelligible. But it was not until the last two decades of the previous century that the first linguistic materials on Bugun (a.k.a. Khowa), Puroik (a.k.a. Sulung), Sherdukpen and Sartang (a.k.a. Boot Monpa or Butpa) became available: the works of the Indian language officers Deuri (1983), Tayeng (1990) and Dondrup (1988, 1990, 2004). On the Chinese side, the first Puroik data were published as part of the large-scale survey Tibeto-Burman Phonology and Lexicon (Sün et al. 1991). Based on these materials and his own data, Jackson Sun (1992, 1993) was the first to suggest that Puroik, Bugun, Sherdukpen and ‘Lishpa-Butpa’ (with data for Lishpa probably derived from the short wordlist in Das Gupta’s 1968 description of Central Monpa, i.e. Dirang Tshangla) might belong together as a coherent linguistic group.1 After Sun, other researchers adopted the same view (Rutgers 1999; Burling 2003)2. Van Driem (2001) named this group ‘Kho-Bwa cluster’, after his proposed reconstructions for ‘water’ and ‘fire’. Although the exact phonological shape of the reconstructions *kho ‘water’ and *bwa ‘fire’ needs to be established, we follow Lieberherr and Bodt (2017) and others before them in using Kho-Bwa as a label for these languages. Aside from already having some currency, it has the advantage of not being biased toward one language like ‘Bugunish’ (Sun 1993), or a region like ‘Kamengic’ (Blench / Post 2014; Post / Burling 2017). Furthermore, Kho-Bwa offers an exhaustive definition of the group, namely

1 More recent publications, at the time unavailable to Sun, include the Puroik description from China by Li (2004), the Sherdukpen description by Jacquesson (2015) and the elicited wordlists of different varieties in the report by Abraham et al. (2018).
2 Note that Blench / Post (2014) and Post / Burling (2017) expressed scepticism about Puroik being part of this proposed group of languages. Nonetheless, all commonly consulted handbooks (Burling 2003; Genetti 2016; Post / Burling 2017) and the online language encyclopaedias Ethnologue (https://www.ethnologue.com/) and Glottolog (Hammarström et al. 2018) mention Kho-Bwa as a (potential) branch of Tibeto-Burman in western Arunachal Pradesh.
that any language of western Arunachal Pradesh in which the word for ‘water’ starts with \( k \) and the word for ‘fire’ starts with \( b \) is a Kho-Bwa language.

The Western Kho-Bwa languages. The Western Kho-Bwa (WKB) languages are the eight distinct linguistic varieties spoken in the western part of the Kho-Bwa speech area: the valleys of the Gongri and Tenga rivers (Bodt 2014a, 2014b). Administratively, this area falls under West Kameng district of the state of Arunachal Pradesh, India. The Western Kho-Bwa languages can be sub-divided into three subgroups: 1) Duhumbi (Duh.) and Khispi (Khs.), a.k.a. ‘Chugpa’ and ‘Lishpa’; 2) Rupa (Rup.) and Shergaon (She.), a.k.a. ‘Sherdukpen’ (Shd.); and 3) Khoina (Khn.), Jerigaon (Jer.), Khoitam (Kht.) and Rahung (Rah.), a.k.a. ‘Sartang’ (Sar.). Estimates of speaker populations range between 400 (Jerigaon) to 3,000 (Rupa). Considering the low speaker population and the rapid socio-economic and cultural changes in this area, all these varieties must be considered endangered.

The distinction between these Western Kho-Bwa languages and the ‘Eastern’ Kho-Bwa languages Puroik and Bugun is based on the phonological and lexical characteristics of these respective languages and evidenced in the clear sub-grouping that appears in Lieberherr / Bodt (2017). Although the Western Kho-Bwa languages form a distinct sub-group as opposed to both Bugun and Puroik, the evidence that Bugun and Puroik indeed belong together as ‘Eastern’ Kho-Bwa is less convincing and hence I make no claim to that extent.

This paper primarily presents correspondences between Duhumbi and Khoitam. Duhumbi has most conservatively preserved rhymes. Khoitam is representative of the Sartang and Sherdukpen varieties, that have innovated in the rhymes. Khoitam has had less contact influence from Hrusish than Khoina and Jerigaon and less contact with Bodish and Tshangla than Rupa, Shergaon and Rahung\(^3\). Wherever the Duhumbi or Khoitam evidence is absent or inconclusive, evidence from one of the other varieties is provided. Of particular significance is the evidence provided by Khoina, the variety spoken in what is generally considered the Western Kho-Bwa ‘homeland’. Khoina evidences retention of archaic phonemes or unique phonological innovations not present in any of the other varieties.

Comparative evidence is provided from attested and reconstructed languages from various sources. These include: Middle and Old Chinese (Chi.) from Baxter / Sagart (2014), Mizo (Miz., Lushai) from Lorrain (1940), Proto-Bodo-Garo (PBG) from Joseph / Burling (2006), Lashi (Las.) from Hill (2019), Tshangla (Tsh.) from my own fieldwork, Brokpa (Bro.) from my own fieldwork and Tawang Monpa (Mon.) from my own fieldwork. Tibetan forms are from various sources, including Jäschke (1992), Hill (2019) and Zhāng (1993). The sources for other, incidental, comparative data are mentioned with the form.

This paper is organised as follows: plosive rhymes (§1 – §23); open rhymes (§24 – §36); nasal rhymes (§37 – §62); fricative rhymes (§63 – §66); approximant rhymes (§67 – §77) and sound correspondences in loans (§78 – §81). Unambiguous, or ‘trivial’ correspondences, in which all varieties have the same or an easily derivable reflex, are presented first. More complex and unusual correspondences are provided after them. As will be shown, rather than the trivial correspondences, the more unusual correspondences are often the most intriguing from a historical-comparative point of view. Rather than the rule, the exception is what matters. At

\(^3\) Contact languages in the western part (influencing mainly Khispi, Duhumbi, Rahung, Rupa and Sherdukpen and to a lesser extent Khoitam and Jerigaon) include Central Bodish Brokpa (Bro.), Central Bodish Chocangaca and Tibetan (Tib.), East Bodish Tawang Monpa (Mon.) and the Dirang variety of Tshangla (Tsh.D.). Contact languages in the eastern part affecting mainly Khoina and Jerigaon are the Hrusish languages Miji (Mij.) and Hruso Aka (Hru.). Linguistic influence of Bugun and Puroik, which will be shown to be genetically related in a forthcoming paper, is negligible.
the end of the paper, a separate section is devoted to sound correspondences in suspected loan lexemes, followed by a synopsis of the evidence presented in this paper.

In this paper, cognate sets deriving from reconstructed palatalised and labialised onsets are treated on par with simple onsets when these onsets have only resulted in divergent onset reflexes. Reconstructed palatalised and labialised onsets and rhotic onset clusters are only mentioned separately in case they result in divergent rhyme reflexes. Every cognate set has a reference to the relevant onset correspondence in a separate paper on Western Kho-Bwa onsets. The evidence is generally presented in the following format:

§#. Duhumbi rhyme, Khoitam rhyme, other relevant rhymes. Duhumbi form < *reconstructed Proto-Western Kho-Bwa form ‘English gloss’, Khoitam form, other relevant Sartang and Sherdukpen forms, other relevant comparative forms (§# onset correspondence)

The notational conventions are as follows. All forms in italics are attested forms from Western Kho-Bwa languages in IPA notation. English glosses are provided between single quotation marks (‘’). The symbol (<) indicates that the form before the symbol (usually an attested from) is proposed to derive from the form following the symbol (usually a reconstructed form). A question mark (?) before a reconstructed form either indicates that this reconstruction is tentative, or that it is the reconstruction of a form that was borrowed from a contact language. A single dagger (†) refers to a not (yet) attested but hypothesised form. An asterisk (*) precedes to a reconstructed proto-form in Proto-Western Kho-Bwa. A tilde (~) indicates variant forms such as allophones or allomorphs. A period (.) separates morphemes in a single word, in which single phonemes that are thought to derive from reconstructed syllables with grammatical function (e.g. phonetically reduced prefixes in the Sartang and Sherdukpen varieties, such as s. from *sa. ‘animal prefix’) are treated as separate morphemes rather than as part of the onset. The short, glottal constricted, creaky voiced and rising pitch open vowels in the contemporary Western Kho-Bwa varieties are transcribed with a superscript glottal stop following the vowel [v’], although they would more accurately be transcribed as [̃v’]. These short vowels contrast with their long, breathy voiced, level pitch counterparts, which are represented in the Sartang and Sherdukpen varieties with [v:] although they would more accurately be transcribed as [vː]. Additional transcription symbols found in Chinese reconstructions are (‘) indicating type A syllables and (’) indicating pre-glottalised onsets. In Burmese and Tibetan transcriptions, the velar nasal is indicated by (ŋ), the palatal nasal by (ɲ), the unvoiced and voiced palatal fricatives by (š, ž) and level tone in Burmese by a macron (’) above the vowel.

The Sherdukpen varieties Rupa and Shergaon have distinctive postalveolar affricates [ʧ], [ʧʰ] and [ʣ] but no distinctive postalveolar [ʃ], [ʒ] or palatal [ɛ, ɜ] fricatives. A distinction between these postalveolar affricates and alveolar affricates [ʦ], [ʦʰ] and [ʣ] is only maintained among older speakers, with younger speakers merging the alveolar affricates with the postalveolar affricates. Similarly, only older Rupa Sherdukpen speakers maintain distinctive palatal stops [ɕː] and [ʃ], whereas these have again merged with the postalveolar affricates in Shergaon and among the younger Rupa speakers. Khispi and Duhumbi have distinctive palatal fricatives [ɛ] and [z] and palatal affricates [ʦɛ], [ʦʰɛ] and [ʣɛ]. None of the varieties maintains a distinction between postalveolar and palatal affricates and the exact phonetic value of the affricates in the proto-language is unknown. Hence, the affricates have been reconstructed as *ʦɛ, *ʦʰɛ and *ʣɛ for the alveolar series and *ɛ, *ɛʰ and *j for the postalveolar or palatal series. No such notational

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4 I.e. in Rupa, the oldest generation of speakers maintains a phonemic distinction between ʧ- and ʦ-, ʧʰ- and ʦʰ-, ʧɛ- and ʦɛ-, ʧɛʰ- and ʦɛʰ-, whereas in the younger generation ʦ- and ʧ- have merged to ʧ, ʦʰ-, ʦɛʰ- and ʨɛʰ- have merged to ʨ, and ʧɛ- and ʨɛ- have merged to ʨɛ (as in most other Sartang and Sherdukpen varieties except Khoiana). As this is an ongoing phonological process with varying actual realisations as well as significance for the reconstructions, the notation (~) was used (e.g. ʨɛ ak ~ ʨɛ ak).
convention had to be assumed for the palatal fricatives, even though these vary between \[\mathbf{ʃ}\] and \[\mathbf{ʒ}\] in Khoina and [e] and [z] in Duhumbi and Khispi, because there is hitherto no evidence that these palatal fricatives existed in the proto-language. In the IPA notation, palatal fricatives are transcribed uniformly as [e] and [z], even for Khoina. Similarly, despite the fact that some varieties have postalveolar rather than palatal affricates, the IPA transcription used in this paper uniformly uses palatal affricates \[\mathbf{ʨ}\], \[\mathbf{ʨʰ}\] and \[\mathbf{ʥ}\].

The Sartang and Sherdukpen nasalised vowels are the result of the loss of nasal codas and these nasal codas can almost invariable be reconstructed as /ŋ, n, m/ on the basis of the retained codas in Khispi and Duhumbi. Some speakers may still realise the nasal coda, whereas others may realise them solely as nasalisation of the preceding vowel. Hence, this is not reflected in the notation (e.g. \[tʰı̆ŋ\] not \[tʰı̆ː\] ~ \[tʰı̆ŋ\]). In those lexemes where the nasal is lost among all speakers, only nasalisation of the vowel is reflected in the notation (e.g. \[tʰı̆ː\] not \[tʰı̆ː\]). In those lexemes where the nasal is lost among all speakers, only nasalisation of the vowel is reflected in the notation (e.g. \[tʰı̆ː\] not \[tʰı̆ː\]). In those lexemes where the nasal is lost among all speakers, only nasalisation of the vowel is reflected in the notation (e.g. \[tʰı̆ː\] not \[tʰı̆ː\]).

The complete cognate sets, with the reflexes in all individual varieties in this paper, as well as the corresponding sound files when available, can be found in the supplementary material on the Open Access website Zenodo (DOI:).

2. **Plosive Rhymes**

Whereas rhymes with a velar coda in Duhumbi correspond to rhymes with velar codas in all other varieties, the bilabial and alveolar stop coda have been preserved in Duhumbi but resulted in divergent rhyme reflexes in the Sartang and Sherdukpen varieties, with particular poor attestations of bilabial plosive coda rhymes.

2.1. **Trivial Correspondences**

§1. *Duh. -ak, Kht. -ak.* Duhumbi rhyme -ak corresponds regularly to rhyme -ak in Khoitam, Jerigaon and Khoina have allophone [a] of vowel /a/ in reflexes of rhyme *-ak, *-an (§41 and §54) and *-as (§62).

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Duh. pʰak < *pʰak ‘liquor’, Kht. pʰak, Jer. pʰak (§6)
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Duh. dak < *zrak ‘weave’, Kht. rak, Tib. ʰṭag (pres. ʰṭhag), Bur. rak < *C-tak, Chi. 纖 tsyi< ʰtak (§13)
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Duh. tʰak < *tʰak ‘rope’, Kht. tʰak, cf. Tib. thag.pa, Tsh. tʰak.pa (§5)
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Khs. gan.dai pʰak < *pʰrak ‘forget’§, Kht. pʰlak, Rah. pʰrak (§15)
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Duh. eak < *b’ak ‘cliff’, Kht. wʰak, Khn. wʰak, Tib. brag, Tsh. brak (§38a)
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Duh. wʰak < *kʰak ‘bitter’, Kht. wʰak, Rup. cʰak ~ wʰak, Tib. kha, Bur. khā, Chi. 苦 khuX < *kʰaʔ (§50)
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Duh. wʰak < *sʰak ‘taro’, Kht. wʰak, Khn. sʰak (§46)
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5 Duhumbi has loan \textit{grandka yat} ‘to forget’, cf. Dirang Tshangla. \textit{grandka yat} ‘to forget’, Bhutan Tshangla \textit{yat} ‘to forget’.

Duh. *mʷak⁶ ‘beat’, Kht. wak (§32b)

§2. Duh. -ek, Kht. -ek. Similar to §37 (Duh. -əŋ, Kht. -əŋ), the correspondence between Duhumbi rhyme -ek and Khoitam rhyme -ək, with characteristic Khoina reflex -ajk, is regular and derives from rhyme *-ek. The palatalised onset in Duhumbi precedes rhymes -ek and -əŋ (§37).

Duh. *a.qrek ‘red’, Kht. a.hek, Jer. a.hek, Khs. a.hek, Khn. a.xajk, Tib. khrag ‘blood’, Chi. �ってしまいました *syek < *[qʰ]rAk or �AsStringAsync *xik < *[qʰ]rAk (§22a)

Duh. *zrek ‘shoot’, Kht. rek, Chi. 𙂧 *zyek < *CərAk ‘hit with bow and arrow’ (§13)

Duh. *hrek ‘louse’, Kht. hek, Khn. xajk, Tib. ʂig, Chi. 𙂧 *srît < *sɾιk (§43)

Duh. *rek ‘field’, Kht. rek, Khs. lêk, Mon. ləŋ, Tib. ẑîn < *ɬiŋ, Chi. 𙂧 *den < *ɬiŋ (§58a)

§3. Duh. -ik, Kht. -ik. Duhumbi rhyme -ik corresponds regularly to rhyme -ik in Khoitam.

Duh. *tsik ‘pinch’, Kht. wîk (§45)

Duh. *tsʰik ‘heat up’, Kht. wʰîk, Rup. tsʰîk ~ tsʰîk, Khn. tsʰik (§50b)

Duh. *dʒîk ‘ask’, Kht. zîk, Jer. dʒîk ~ dʒîk, Khn. zîk (§57)

§4. Duh. -ək, Kht. -uk. Duhumbi rhyme -ək corresponds to rhyme -uk in Khoitam when it derives from rhyme *-ok, similar to §39 (Duh. -əŋ, Kht. -uŋ).

Duh. *pʰok ‘barley’, Kht. pʰuk (§6)

Duh. *dʒok ‘stab’, Kht. dʒuk, Rup. dʒuk ~ dʒuk, Khn. dʒuk, Tib. hdzugs.pa ‘poking, prick, stab’ (§53)

Duh. ca.kʰok < *s'ia.kʰok ‘skin’, Kht. s.kuk, Khn. s.kʰuk, Tib. skog.pa ‘shell, cool’, Bur. khok < *kuk ‘bark (n.)’, Chi. 𙂧 khaewk < *[kʰ]rAk ‘hollow shell, hollow’ (§4)

Duh. ca.dʒok < *s'ia.qʰok ‘soybean’, Kht. suk⁸, Khs. ca.dʒok, Chi. 𙂧 suuwk < *s.tuk ‘pulses, beans’ (§57a)

§5. Duh. -uŋ, Kht. -uy, Khs. -uy. Duhumbi rhyme -uŋ regularly corresponds to rhyme -uy in Khoitam, with the change *-u > -uy common in the Sartang and Sherdukpen varieties, cf. also §27 (Duh. -u, Kht. -ɨ:u) and §41 (Duh. -uŋ, Kht. -uy)). Both Duhumbi and Khispi show some variation in the place of articulation of the coda.

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6 The regular rhyme reflex -ak⁶ in both Duhumbi and Khoitam, despite the need for a labialised onset to explain the divergent onset reflexes, is the main reason to postulate unvoiced onset *m-, as *mʷ- would have resulted in the rhyme reflexes of §17.

7 Also: 𙂧 [sʰêk ~ *qʰêk].

8 A contraction of *so.cjuk, cf. Jerigaon sy.juk.
Duh. duk ~ dup < *duk ‘poison’, Kht. dyk, Khs. duk, She. duk, Tib. dug, Tsh. duk (§2)
Duh. nuk < *nuk ‘sago’, Kht. nyk, Khs. mut, She. nuk, Tsh. nuj (§29)
Duh. buk < *buk ‘breath’, Kht. byk, Tib. dbugs (§3)
Duh. zuk ‘thorax’ < *zuk ‘face’, Kht. zyk, Tib. gzugs ‘form; body (Hon.)’ (§35)
Duh. uk < *puk ‘hide’, Kht. uk⁹ (§25)

§6. Duh. -et, Kht. -e², Rup. -at. Duhumbi rhyme -et regularly corresponds to Khoitam rhyme -e² and Rupa rhyme -at.

Duh. get < *grat ‘break’, Kht. ðxe², Rup. gat (§10)
Duh. cet < *s’et ‘exit’, Kht. se², Rup. sat (§38)
Duh. jet < *jat ‘flee’, Kht. je², Rup. jat, Chi. 逸 yit < *[l]i[t] ‘flee’ (§60)
Duh. veke¹⁰ < *a.mrat ‘many’, Kht. a.me², Rup. a.mat, Tib. rmad.pa ‘excellent, wonderful, marvellous’, WBur. mrat ‘be excellent, exceed; gain, profit’ (§32a)
Duh. a’tes¹¹ < *a.tʰat ‘thick’, Kht. a.t’e², Rup. a.t’at, Chi. 填 thenX < *tʰ[k][n]? ‘thick, ample’ (§5)

§7. Duh. -et, Kht. -e². The rare Duhumbi rhyme -et corresponds to Khoitam and Rupa rhyme -e².

Duh. let < *ret ‘have intercourse’, Kht. re², Rup. re², Chi. 待 trhjet < *t’ret ‘penetrate’ (§58a)

§8. Duh. -ot, Kht. -ik. Duhumbi rhyme -ot regularly corresponds to rhyme -e² in Khoitam (and Khoina, Rahung) and rhyme -e² in Jerigaon (and Rupa, Shergaon).

Duh. jot < *jot ‘be late’, Kht. je², Khs. je², Jer. je² (§60)
Duh. wot < *t’sot or *t’sot ‘make’, Kht. w’et², Khs. t’s’et², Jer. w’et², Tsh. w’et (§46 or §50b)

§9. Duh. -ut, Kht. -ik. Duhumbi rhyme -ut regularly corresponds to rhyme -ik in Khoitam and rhyme -it in Shergaon. The Duhumbi reflex makes this correspondence distinctive from the reflexes of rhyme *-us (§65), and the Shergaon reflex makes this correspondence distinctive

⁹ Preservation of rhyme -uk, not ṭ-yk in the Sartang and Sherdupken varieties in this lexeme can be explained by the glottal onset.
¹⁰ Elision of the coda -t may be conditioned by the unknown suffix -ka, i.e. *met-ka > me-ka.
¹¹ This reflex was expected to be ṭ-s’et, perhaps the coda -s is conditioned by the onset, i.e. to avoid both a dental onset and a dental coda.
¹² Elision of the coda -t is probably the result of contact language influence, cf. Brokpa [g’i]².
¹³ The rhyme reflex in all varieties suggests that the coda -r was a part of the root, not of the prefix, i.e. *sa.rg/at < *sa.grat.
from the reflexes of rhyme *-ut when preceded by a labialised onset (§18) or a palatalised onset (§15).

Duh. hut < *ʀɯt ‘blow’, Kht. mik, Jer. wik, She. mit, Bur. mhut ‘blow away’ (§41)
Duh. tɯt < *ʔtут ‘take off (clothes)’, Rup. tik, She. tit, Chi. 脫 thwat < *mә-ʔot ‘peel off’ (§?)


Duh. u.lap < *a.r̥ap ‘leaf’, Kht. a.rap, Rup. a.lap, Chi. 叶；葉 yep < *lap (§61)

2.2. Palatalised Onsets and Rhotic Onset Clusters

In several cognate sets, the rhyme reflexes are distinct when preceded by a palatalised onset or rhotic onset cluster.

§11. Duh. -ak, Kht. -uˀ, Rup. -uk. The following set has irregular rhyme reflexes, where Duhumbi has vowel /a/ but the Sartang and Sherdukpen varieties have vowel /u/, that neither fit with correspondence §1 nor with the correspondence pattern for the glottal rhyme when preceded by a nasal onset (§25), and this may be attributed to a palatalised onset. The palatalised onset would also explain the palatal nasal onset in Rupa but the dental nasal in Khoitam, with Duhumbi uniquely having preserved the velar nasal onset.


§12. Duh. -ik, Kht. -iˀ. Unlike correspondence §3 (Duh. -ik, Kht. -ik), in the following set, Duhumbi rhyme -ik corresponds to rhyme -iˀ in Khoitam and the other Sartang varieties and rhyme -eˀ in Sherdukpen. I propose this derives from a rhyme *-it preceded by a rhotic onset cluster (unlike the reflexes of *-it when preceded by a palatalised rhotic onset cluster, cf. §34a), which is also confirmed by the onset reflexes.

Duh. kʰik < *kʰrit ‘twist (udder, cane)’, Kht. ʨʰiˀ, Khn. tʂʰiˀ, Rup. kʰeˀ, She. kʰriˀ (§11)

§13. Duh. -uk, Kht. -uˀ, Rup. -yt. Perhaps the unexpected Rupa rhyme -yt not †-yk (§5 Duh. -uk, Kht. -yk) is the result of the palatalised rhotic onset cluster.

Duh. tɕʰuk < *kʰrұk ‘six’, Kht. ʨʰyk, Khn. tʂʰyk, Rup. kʰyt, Tib. drug, WBur. khrok < *kruk, Chi. ฤ ljuwk < *k.ruk (§50a)

§14. Duhumbi -at, Khn. -et. In a single cognate set, Duhumbi rhyme -at corresponds to Khoina rhyme -et¹⁶ and Rupa rhyme -at, with the unexpected Khoina and Rupa reflexes (cf. §7 Duh. -et, Kht. -eˀ) perhaps conditioned by the onset cluster.

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¹⁴ This root may be the only evidence for a palatalised onset *tˀ-, which was simplified in the Sherdukpen varieties but became an affricate in Duhumbi and Khispi. Sartang evidence is unfortunately missing.
¹⁵ The unexpected coda is perhaps assimilation to the dental plosive onset of the suffix.
¹⁶ Khoitam has direct Bodish loan le.kɔː here, cf. Tib. las.ka ‘work’ and Dirang Tshangla leː.kaː.
Duh. \textit{pat} ‘do work’ \(<\) *brat ‘work’, Khn. \textit{blet}, Rup. \textit{blat} (§14a)

§15. \textit{Duh. -ut}, Kht. -\textit{ik}. In a single cognate set, Duhumbi rhyme -\textit{ut} corresponds to rhyme -\textit{u̯} in Khoitam. The Shergaon reflex -\textit{i̯} indicates that the change from \(*-y̯\) \(<\) \(*-y\) \(-i̯\)/-\textit{i} in Shergaon took place after the change from \(*-ut\) \(-y\) (i.e. \(*-uC\) \(*-y\) \(-i\)). The distinct reflexes from §9 may be attributed to the palatalised onset.

Duh. \textit{nut} \(<\) *nʲut ‘put on (shoes, pants)’, Kht. \textit{ny̯}, She. \textit{ni̯} (§31)

2.3. \textbf{Labialised Onsets}

There are also several cognate sets, where labialised onsets result in divergent rhyme reflexes.

§16. \textit{Duh. -ɔk}, Kht. -\textit{ək}. Duhumbi rhyme -\textit{ɔk} corresponds regularly to rhyme -\textit{ək} in Khoitam when rhyme \(*-ak\) is preceded by a labialised onset.

Duh. \textit{ɔk}, Kht. \textit{ɔk}. Duhumbi rhyme -\textit{ɔk} corresponds to rhyme -\textit{ək} in Khoitam when deriving from rhyme \(*-ak\) preceded by a labialised onset, similar to the correspondence between Duhumbi -\textit{ɔk} and Khoitam -\textit{ək} in §16. Both Khoina and Duhumbi show coda plosive alternation -\textit{k} \(-p\).

Duh. \textit{ɔp}, Kht. \textit{ɔp}. In a single cognate set, Duhumbi rhyme -\textit{ut} corresponds to rhyme -\textit{ik} in Khoitam when deriving from rhyme \(*-at\) preceded by a labialised onset, similar to the correspondence between Duhumbi -\textit{at} and Khoitam -\textit{ək} in §16. Both Khoina and Duhumbi show a kind of axe’ (§43c)
§20. Duh. -et, Kht. -eʔ. In a few cognate sets, Duhumbi rhyme -et corresponds to Khoitam and Rupa rhyme -eʔ and Khoina rhyme -eʔ. I propose this correspondence derives from rhyme *-es, which has distinct reflexes when preceded by a glottal onset (§63c).

Duh. zet < *dz'es ‘tear’, Kht. zeʔ, Rup. zeʔ, Khn. zeʔ (§39a)
Duh. ts'et < *tb'ees ‘need’, Kht. teʔeʔ, Rup. ts'ʔeʔ ~ teʔeʔ, Khn. ts'ʔeʔ, Tsh. ts'ʔas (§50b)


Duh. kʰip < *kʰrep ‘cave’, Kht. teʔeʔ, Khn. ts’ʔeʔ, Rup. kʰeʔ, She. kʰeː; Chi. ɕʰ hwet < *[ɡ]ɕi[t] ‘cave, pit’ (§11)
Duh. kʰip < *kʰrep ‘cry’, Kht. teʔeʔ, Khn. ts’ʔeʔ, Rup. kʰeʔ, She. kʰeː; Tib. khrab-khrab < *kʰep ‘a person prone to weep’, Chi. ɕʰ khip < *kʰep (§11)

§21a. Duh. -ip, Kht. -eʔ. In a single cognate set, the Duhumbi rhyme -ip corresponds to rhyme -ep in Khoitam with divergent reflexes in the other Sartang and Sherdukpen varieties, including unique Khoina reflex -eʔ. The rhyme -ip is extremely rare in Duhumbi and is also the reflex of rhyme *-ep.

Duh. gip < *gip ‘fold (clothes)’, Kht. geʔp, Khn. guʔ, Rah. kik, Rup. gii, She. git (§1)

§22. Duh. -ep, Kht. -uk. Duhumbi rhyme -ep corresponds to rhyme -uk in Khoitam, similar to the correspondence between Duhumbi rhyme reflex -uk and Khoitam rhyme reflex -uk of rhyme *ok (§4).

Duh. teʔep < *teʔop ‘fishing net’, Kht. teʔuk, Khn. ts’ʔuk (§46)

§23. Duh. -up, Kht. -ep. Duhumbi rhyme -up is preserved in only a single lexeme and corresponds to rhyme -ep in Khoitam. Some unexpected rhyme reflexes indicate the ongoing phonological processes affecting this rhyme in the individual varieties.

Duh. bsj.dup < *baj.zrup ‘hearth, fireplace’, Kht. b.rjop, She. b.rʌk [tʰ.rjop], Rah. b.rjop, Khn. baː.rjø, Miz. rjop ‘fireplace shelf’ (§13)
Duh. sam.tu17 [tʰə.tap] < *sə.tup ‘rat’, Kht. s.təp, She. s.təp, Rah. s.təʔ [tʰə.tap], Khn. s.təʔ (§8)

3. Open rhymes

Open rhymes are common in all the Western Kho-Bwa varieties, but more common in the Sartang and Sherdukpen varieties which have a larger vowel inventory in open rhymes than Khispi and Duhumbi, which have often preserved the coda in the rhymes.

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17 Through a reanalysis of the coda from root to prefix and subsequent nasalisation of the coda, i.e. *sə-tup > *e-atup > *ep-tu > *em-tu > sam-tu.
3.1. TRIVIAL CORRESPONDENCES

§24. Duh. -a, Kht. -u. The Duhumbi rhyme -a regularly corresponds to Khoitam rhyme -u, in which the sound change *-a > -u is secondary and has also been attested from e.g. the Hrusish languages (Bodt / Lieberherr 2015).

Duh. ga < *ga ‘I’, Kht. gu;., Tib. ṇa, Bur. ṇā, Chi. ꭳ ngu < *ŋ’a (§1)
Duh. ea < *s’a ‘meat, animal’, Kht. su;., Tib. ša, Tsh. ea ‘meat’ (§38)
Duh. uja < *a.ja ‘wife’, Kht. aju: (§60)
Duh. kʰa < *kʰa ‘five’, Kht. kʰu:, Tib. lña, Tsh. ṇa, Bur. ṇāḥ, Chi. ꭳ nguX < *C.ŋ’a? (§4)
Duh. ḳa < *ga ‘I’, Kht. gu;., Tib. ṇa, Bur. ṇā, Chi. ꭳ nguX < *C.ŋ’a? (§1)

§25. Duh. -aˀ, Kht. -uˀ. The Duhumbi glottal constricted rhyme -aˀ regularly corresponds to Khoitam short open vowel -uˀ. I propose this correspondence derives from a glottal rhyme *-aʔ. An example of a (near-) minimal pair showing the distinctiveness of *-a vs. *-ak vs. *-aʔ would be *kʰa ‘five; shake’ vs. *ma.kʰak ‘walnut; belt’ vs. *nam.kʰaʔ ‘foxtail millet’.

Duh. ḳa < *ga ‘I’, Kht. gu;., Tib. ṇa, Bur. ṇā, Chi. ꭳ nguX < *C.ŋ’a? (§4)
Duh. waˀ < *wa ‘bird’, Kht. huˀ, Khn. fuˀ, She. huˀ, Tib. kʰwa ‘crow, raven’, Tsh. kʰa ‘bird’, Chi. 烏 ‘u < *q’a ‘crow, raven; black’ (§63)
Duh. wʰu,pʰaˀ < *wʰa,pʰra ‘ash’, Kht. wʰa,pʰuˀ, Rah. wʰa,pʰru (§15)
Duh. kʰa < *ka ‘bite’, Kht. kuˀ, Tsh. ɲam, Chi. 牙 ngae < *m-ɕ<ː>r ‘a tooth’ (§7)
When preceded by a nasal onset, Khoitam, Rahung and Thong (upper class) Sherdukpen may add an epenthetic nasal coda to the rhyme, resulting in rhyme -uŋ, not -uː.

Duh. na < *naʔ ‘be sick’, Kht. nuŋ, Rah. nuŋ, Rup. nuŋ21, Khn. ku-nuŋ22, Tsh. nan, Tib. na or sku siniː.בח ‘be sick (Hon.)’, Bur. nā ‘hurt’ (§29)

Duh. ɣa < *ŋaʔ ‘fish’, Kht. nuŋ, Rah. nuŋ, Rup. ŋuŋ23, Khn. ŋa, Tsh. ŋa, Tib. ŋa < ŋa, Bur. ŋā, Chi.št, ngio < *ŋa, PBG *ŋaʔ (§30)


Duh. di < *zriʔ ‘roast’, Kht. riː, Chi. ʃɪ tsi ēw < *S.tew ‘burn, scorch’ (§13)


Duh. kʰi < *kʰiʔ ‘borrow’, Kht. ʰčiː, Khn. ʰčiː, Rup. ʰčiː ~ ʰčiː, Tib. skyi.ba, Tsh. ʰči, OBur. kʰiː (§18)

Duh. (ʣaŋ) ʰčiː < *sija.ki ‘barking deer’, Kht. s.čiː, Khn. s.čiː, Jer. s.iː (§11a)

Duh. pei < *pʰiʔ ‘needle’, Kht. pʰiː, Rah. pʰiː (§19)

Duh. i < *ʔi ‘die’, Kht. iː, Tib. ʰʃi (pres. ʰči), Tsh. ēi, OBur. siy (§25)

Duh. pei < *pʰiʔ ‘four’, Kht. psiː, Khn. pʃiː, Tib. bži < *bʰiʔ, OBur. liː, Chi. ʰʃiH < *s.ʃi[j]- (§19b)

Khs. ea.ʔi26 < *(s)a.ʔa) bĩ ‘gall, bile’, Kht. a.ʔiː, Khn. a.ʔiː: (§38a)

Duh. zi < *ʣiʔ ‘urine’, Kht. ziː, Khn. ziː, Tib. zil < *ʣil ‘dew’, Bur. chį or Tib. g证券投资 ‘urinate’ (§39a)

18 The unexpected prefix is under influence of the honorific Tib. term chiibs.rta ‘riding horse’, i.e. *sja.taʔ > *ea.taʔ > eip.taʔ.
19 The stop coda in Duhumbi (*tca.ʔa) and Khispi (*tca.ʔa) is unexpected.
20 The nasal coda of the prefix in this lexeme may condition the variation in aspiration in the Duhumbi, Rupa and Shergaon reflexes.
21 This is the Rupa Chaw (lower class) and Shergaon reflex, the Rupa Thong (upper class) reflex is nuŋ.
23 This is the Rupa Chaw (lower class) and Shergaon reflex, the Rupa Thong (upper class) reflex is nuŋ.
24 Duhumbi na ‘heed’ may be from the same root.
25 This is the Rupa Chaw (lower class) and Shergaon reflex, the Rupa Thong (upper class) reflex is nuŋ.
26 Duhumbi has Bodish loan kʰris, cf. Tibetan mkhris.pa, Dirang Tshangla kʰris.
§27. Duh. -u, Kht. -y.: Duhumbi rhyme -u regularly corresponds to Khoitam and other Sartang and Sherdukpen rhyme -y:, with an epenthetic off-glide to vowel /y/ in Khoina when the onset is palatalised.

Duh. du < *zru ‘push’, Kht. ryː, Chi. 推 thwoj < *tʰuːj ‘push away’ (§13)

Duh. bu < *bu ‘carry’, Kht. byː, Tsh. bu (§3)

Duh. zu < *ziu ‘melt’, Kht. zyː, Khn. zyj, Tib. ṣu, Tsh. jʊ ~ zu (§39)

Duh. mu < *mu ‘mushroom’, Kht. myː, Tib. ṭa.mʊ, Tsh. ba.mʊŋ (§28)


Duh. wa < *wra ‘walk, move, go’, Kht. rɔ, Tib. ḫgro ‘go’, Chi. 于 hju < *gʷa ‘go; at’ (§65a)

§29. Duh. -eː, Kht. -iː. The Duhumbi rhyme -eː is attested in only a few lexemes and corresponds to Sartang rhyme -ɛː and Sherdukpen rhyme -aː. I propose this set derives from rhyme *-ej when preceded by a labialised onset. Regular reflexes of rhyme *-ej can be found in §67a.

Duh. beː < *bʷej ‘copula’, Kht. beː, Shd. baː (§3)

§30. Duh. -u, Kht. -oː. Duhumbi rhyme -u regularly corresponds to Khoitam rhyme -ɔː, with the Sherdukpen varieties having the characteristic rhyme -aw. I propose this correspondence derives from a labialised onset, cf. also Laufer’s law in Old Tibetan studies (Pre-Tibetan *wa- > Old Tibetan ḥo, Pre-Tibetan *gʷa-, *kʷa- > Old Tibetan go, k(ʰ)o, Pre-Tibetan *Də-wa-, *sə-

3.2. PALATALISED AND LABIALISED ONSETS AND RHOTIC ONSET CLUSTERS

In a few cognate sets, palatalised and labialised onsets explain divergent rhyme reflexes.

§28. Duh. -a, Kht. -ɔː. In a single cognate set, Duhumbi open vowel -a corresponds with Khoitam rhyme -ɔː. The irregular Sartang and Sherdukpen reflexes of rhyme *-a (i.e. not Khoitam long reflex †ruː, §24) stem from the rhotic onset cluster.

Duh. wa < *wra ‘walk, move, go’, Kht. rɔ, Tib. ḫgro ‘go’, Chi. 于 hju < *gʷa ‘go; at’ (§65a)

Whereas Khispi has preserved the inherited lexeme form for ‘brain’, Duhumbi has borrowed the Tshangla form, although the inherited form survives in the meaning of ‘paneer’ (cheese made by curdling milk with acid buttermilk).

27 Whereas Khispi has preserved the inherited lexeme form for ‘brain’, Duhumbi has borrowed the Tshangla form, although the inherited form survives in the meaning of ‘paneer’ (cheese made by curdling milk with acid buttermilk).

28 Duhumbi has kʰɛn ‘to grind’.
wa- > Old Tibetan do, so (Jacques 2013)), even though the comparative evidence from Chinese points towards a rhotic onset.

Duh. ētu < *dʰwa ‘stay, reside, live’, Kht. ēwɔ, Rup. ēzwə ~ dəzwə, Khn. ēwɔ, Chi. 居 kjo < *k(r)a ‘squat; stay, dwell’ (§53)

Duh. su < *səwə ‘search’, Kht. sɔː, Rup. saw, Lashi ˑsɔː; Chi. 搜 srjuw < *sru ‘search’ (§34)

Duh. wu < *gəwa ‘steal’, Kht. jɔː, Rup jaw (§65)

Duh. dej.ju < *daj.gəwa ‘yesterday’, Jer. dzɔ.jɔː: (§60)

Duh. bi.ju < *bi.gəwa ‘thief’, Kht. dzɔː.jɔː: (§60)

3.3. Minor Correspondences

§31. Duh. -a, Kht. -ə. In prefixes, a Duhumbi vowel -a corresponds most commonly with a Khoitam vowel -ə, although their instances where the Khoitam vowel shows vowel harmony with the vowel of the root, or is elided completely, resulting in characteristic onset clusters.

Duh. ba- < *ba- ‘negative prefix’, Kht. bə-, Tib. ma-, Tsh. ma-, Bur. ma, Chi. 無 mjʊ < *ma ‘not have’ (§3)

Duh. tʰə- < *tʰə- ‘prohibitive prefix’, Kht. tʰə- (§5)

Duh. ea- < *səa- ‘animal prefix’, Kht. sə- ~ s- (§38)

Duh. wa- ~ hə- < *pʰəwa- ‘bird prefix’²⁹, Kht. pʰə-, Rup. bə-, Khs. wa- (§43c)

§31a. Duh. -a, Kht. -an. In a single cognate set, a Duhumbi open vowel -a corresponds with Khoitam closed rhyme -an. The irregular Duhumbi and Khoitam reflexes of rhyme *-at (but Rupa and Shergaon -tɔ, cf. §6 for regular reflexes) may be explained by the dependant nature of the morpheme or may be indicative of a borrowed origin of the morpheme.


§32. Duh. -e, Kht. -u:. Rhyme -e is rare in Duhumbi and Khispì and corresponds to Sartang and Sherdukpen rhyme -u:. The Sartang and Sherdukpen rhyme reflexes indicate this must derive from an open rhyme *-a. The Khispì evidence indicates that this cognate set derives from a palatalised onset. However, it is unexplained why these lexemes do not follow onset correspondence §38a (affrication of onset *bi-) and §50 (affrication of onset *kbi-).

Duh. be < *bə ‘down’³⁰, Kht. bu:, Khs. bə, Tib. smad, Bro. [me:] (§3)

Duh. kʰə < *kʰi ‘ground level’³¹, Kht. kʰu:, Khs. kʰa (§4)

§33. Duh. -i, Kht. -iː. Duhumbi does not distinguish vowel length, but where the Duhumbi rhyme -i corresponds to Khoitam short open vowel rhyme -iː, I propose this correspondence

²⁹ E.g. in ‘chicken’ and ‘dog’, but also wild bird species such as ‘tragopan’ and ‘partridge’.
³⁰ As in, a location usually visible and on a lower plane from the point of speaking.
³¹ As in the bottom or ground level at a certain location.
these rhymes have often undergone phonetic change in the Sartang all varieties, but whereas Duhumbi and Khispi have retained bilabial and alveolar nasal rhymes, like with the plosive rhymes, rhymes with a velar nasal have been relatively well preserved in

\[ \text{\textit{§4. Nasal Rhymes}} \]

Like with the plosive rhymes, rhymes with a velar nasal have been relatively well preserved in all varieties, but whereas Duhumbi and Khispi have retained bilabial and alveolar nasal rhymes, these rhymes have often undergone phonetic change in the Sartang and Sherdukpen varieties.

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32 Deaspiration of the onset may be conditioned by the prefix, cf. Khs. \textit{wa.kʰi}.

33 Note how \textit{*pʰʷa-}, the ‘bird-prefix’, bears similarity to Tibetan \textit{bya} ‘bird’ and Burmese \textit{pyǎh} \textit{*byǎh} ‘bee’ (Hill 2019: 220).
§36. **Duh.-an, Kht.-an.** The Duhumbi rhyme -an regularly corresponds with Khoitam rhyme -an. Khoina and Jerigaon have allophone [a] in this rhyme, just like in the reflexes of rhyme *-ak (§1) and *-an (§26).

Duh. naŋ < *naŋ ‘thou (2 SG)’, Kht. naŋ, Tsh. nan, Chi. 若 nyak < *nak (§29)

Duh. u.kʰaŋ⁴⁴ < *aŋ ‘healthy, strong’, Kht. aŋ, Khn. aŋ, Chi. 刚 käng < *kʰaŋ ‘strong; hard’ (§22a)

Duh. dzam⁵⁵ < *gaŋ ‘weed’, Kht. dzəŋ, Rup. jəŋ ~ dzəŋ (§51)

Duh. waŋ < *waŋ ‘thread’, Kht. həŋ, Khn. xəŋ, Chi. 丸 hwan < *[g]ʷar ‘pellet; ball’ (§63)

Duh. bi.s.taŋ < *sʲa.taŋ ‘Puroik’, Kht. s.taŋ, Khn. s.təŋ (§8)

§37. **Duh.-ey, Kht.-ey.** Although attestations are limited, Duhumbi rhyme -ey regularly corresponds to rhyme -ey in all other varieties, except Khoina which has -ajŋ, and derives from rhyme *-en when preceded by a rhotic onset cluster. The palatalised onset in Duhumbi precedes rhymes -ek (§2) and -ey.

Duh. kʰʲəŋ < *kʰreŋ ‘horn’, Kht. ʨʰəŋ, Khn. tʂʰəŋ, Chi. 觀 kwaeng < *[k]ʷraŋ ‘drinking horn’ (§11)

Duh. tʰʲəŋ < *tʰeŋ ‘cover (v)’, Rah. kʰan.tʰəŋ ‘cover (n)’, Rup. tʰəŋ ‘cover (v)’ (§5)

§38. **Duh.-iŋ, Kht.-iŋ.** Duhumbi rhyme -iŋ regularly corresponds to Khoitam rhyme -iŋ.

Duh. biŋ < *biŋ ‘flatten (dough)’, Kht. ziŋ (§17)


Khs. hiŋ³⁷ < *hiŋ ‘wood’, Kht. hiŋ, Bur. sac < *sik, Chi. 薪 sin < *si[n] ‘firewood’ (§36)

Duh. ea.pi.lum₃₈ < *sja.niŋ ‘gums’, Rah. sa.niŋ, Rup. sa.niŋ, Khn. mə.sə.rū. ³⁹, Tib. rŋil < *rŋil, Chi. 類 ngiŋ < *niŋ (§33)

§39. **Duh.-oŋ, Kht.-oŋ.** Duhumbi rhyme -oŋ regularly corresponds to Khoitam rhyme -uŋ.

Duh. goŋ < *goŋ ‘fence’, Kht. guŋ (§1)

Duh. doŋ < *zoŋ ‘bind together’, Kht. ruŋ ‘assemble (people); pile up (things)’ (§13)

Duh. nam.pʰoŋ < *nam.pʰoŋ ‘night’, Kht. nə.pʰuŋ (§6)

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⁴⁴ Also: u.q’aŋ.
⁴⁵ A contraction of *gaŋ a.mu > *gaăm > *dzəm > dzam, see also fn. ⁴¹.
⁴⁶ The Duhumbi reflex includes the ‘human being prefix’ (§17a).
³⁷ Duhumbi has ciŋ, in analogy with Bod. cf. Tib. sini ‘tree’, Tsh. cin ‘tree, wood’, Brok. ciŋ ‘tree’.
³⁸ Loss of the coda nasal may be attributed to the final morpheme.
³⁹ Perhaps the nasalisation can be attributed to the palatalised onset.
Duh. ḵoŋ.dɔŋ < *a.qoŋ ‘egg’, Kht. a.juŋ, Khs. ą.gɔŋ, Chi. 白 lwanX < *k.r'or? (§57a)
Duh. joŋ < *joŋ ‘load’, Kht. juŋ (§60)
Duh. ca.dɔŋ < *s/a.don ‘macaque’, Kht. z.duŋ (§2)
Duh. taŋ.kɔŋ < *taŋ.koŋ ‘marten’, Kht. taŋ.kuŋ (§8)
Duh. ɔ.tɔŋ < *a.τοŋ, Kht. a.ʨuŋ, Rup. a.tsuŋ, Khs. a.tsuŋ (§45)


Duh. kʰuŋ < *kʰuŋ ‘ascend’, Kht. kʰyŋ (§4)
Duh. kʰu.tʰuŋ < *kʰa.tʰuŋ ‘ear’, Kht. kʰ.tʰyŋ (§5)
Duh. luŋ < *r̥uŋ ‘stone’, Kht. ryŋ, Jer. lyŋ, Tsh. luŋ, PBG *loŋ (2), Chi. 磯 luwk < *[r]ˤok ‘precious stone’ (§61)


Duh. den < *dan ‘know’, Kht. dan, Tib. dran ‘remember’ (§2)
Duh. ɔ.men < *a.man ‘old’, Kht. a.man, Khs. ɔ.men, Tsh. man.ma (§28)
Duh. men < *man ‘medicine’, Khs. pen, Kht. men, Rup. man, Tib. sman, Tsh. man (§32)
Duh. bɛŋ.kʰan⁴⁰ < *ban ‘dream’, Kht. ban, Tib. rmaŋ.lam, Tsh. mɔŋ.eu, Bur. mak, Chi. 夢 mjuwngH < *C.məŋ-s (§3)
Duh. ɔ.bɛŋ < *a.bɛn ‘cold’, Kht. a.wan, Rup. a.w⁴⁰an, Chi. 清 tʃjəŋH < *[ts⁵]ŋ-s (§55)
Duh. ca.kʰan < *s/a.kran ‘wild boar’, Kht. s.kan, Chi. 狂 ken < *[k]e[n] ‘pig or boar 3 years old’ (§11a)
Duh. jen < *wən ‘ashamed’, Kht. wan, Rup. wan (§66)

§42. Duh. -in, Kht. -iŋ. The Duhumbi rhyme -in regularly corresponds to rhyme -iŋ in Khoitam and all other varieties.

Duh. min < *mǐn ‘sleep’, Kht. dɛŋ, Rup. dɛŋ, Tib. rmi.lam ‘dream’, Chi. 眠 men < *m[i][ŋ] ‘shut the eyes; sleep’ (§32c)
Duh. ʧən⁴¹ < *qin ‘silver’, Kht. niŋ, Rup. niŋ, Obur. ɲuy, Chi. 銀 nging < *ŋə[n] (§30)

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⁴⁰ This is a compound of the root bɛŋ and the agent nominaliser -kʰan (cf. Tib. -mkhan, Tsh. -kʰn) with assimilation of the coda to the velar onset of suffix.

⁴¹ The attested Duhumbi form ɲɔŋ is a loan from Tsh.D. ɲɔŋ, in turn from Tib. ɲaŋ. 

§43. Duh. -ən, Kht. -ɨ. Duhumbi rhyme -ən regularly corresponds to Khoitam rhyme -ɨ, with mixed, but regular reflexes for the other Sartang and Sherduppen varieties.

Duh. ʰən < *ʰon ‘take’, Kht. ʰɨ, Rup. ʰə, She. ʰə (§5)

Duh. ʰən ‘pity’ < *hra ‘like’, Kht. hɨ, Khn. xə, She. hɨ, Chi. 恨 honH < *[m-q[ə]n]-s ‘regret’ (§43)

Duh. ən ‘fence (v), rən ‘wind, warp’ < *wən ‘fence (v)’, Kht. tʰɨ, Rup. tʰə, She. tʰə (§65b)

§44. Duh. -un, Kht. -ɨŋ. Duhumbi rhyme -un regularly corresponds to Khoitam rhyme -ɨŋ and Shergaon and Rupa rhyme -in.

Duh. bu.dun < *bʲiعون ‘human’, Kht. ʥɨ.ɨŋ, Rup. bufio.ɨn (§13)

Duh. gun.sun < *gunsun ‘sweet buckwheat’, Kht. kʰɨŋ.ɨŋ, Rup. ɡə.sun, Khn. gə.ɨŋ, Tsh. gun.sun (§45)

§45. Duh. -am, Kht. -am. Duhumbi rhyme -am regularly corresponds to Khoitam rhyme -am.

Duh. u.əm < *a.əm ‘daughter-in-law’, Kht. a.əm, Tib. chang.sa rgyag ‘marry’ (§48)

Duh. lam < *ram ‘be cold’, Kht. ram, Khn. lam, Chi. 凛 limX < *[r][ə]m ‘cold’ (§58a)

Duh. wam < *gam ‘house’, Kht. jam, Chi. 閖 yem < *[g][ə]m ‘gate over street or lane’ (§65)


Duh. nam.sum < *nam.som ‘wind’, Kht. nə.səm, Tsh. yam.su (§34)

Duh. zəm < *zəm ‘hold’, Kht. zəm, Tib. ʰdzoms.pa ‘come together, gather’ (§35)

§47. Duh. -əm, Kht. -ɨŋ. Duhumbi rhyme -əm regularly corresponds to Khoitam rhyme -ɨŋ.

Duh. təm < *tum ‘year’, Kht. tug, Mon. təm.ɨt (§8)

Duh. jəm < *jum ‘ripen’, Kht. uŋj (§60)


Duh. ha (†həm)42 < *hum ‘salt’, Kht. huy, Chi. 鹽 yem < *[ʂ][ə]m ‘salt (n.)’ or 鹽 heam < *Cə.[ʂ][ə]m ‘salty’ (§36)

4.2. Palatalised Onsets


42 Either the Duhumbi and Khs. forms are not cognate, or the unexpected reflexes may be due to a uvular onset.
Duh. biŋ < *a.биŋ ‘name’, Kht. ɚɪŋ, Rup. a.əʊŋ, Khn. ɚɑjŋ, OTib. myin, Tsh. miŋ, Mon. məŋ, Bur. maŋŋ < *menə, Chi. 名 mjiŋ < *C.menə43 (§21)

Duh. u.riŋ < *a.ɬɪŋ ‘long’, Kht. a.ɬɪŋ, Khn. a.ɬaiŋ, Tib. riŋ.po, Tsh. riŋ.bu, Chi. 鼻 ḥjwaŋ <-*[C]ɬɪŋ ‘high, distant’ (§64)

§49. Duh. -ɤŋ, Kht. -ɤŋ. In a single cognate set, Duhumbi rhyme -ɤŋ corresponds to Khoitam rhyme -ɤŋ, not -ɤŋ (§39 Duh. -ɤŋ, Kht. -ɤŋ) when preceded by a palatalised onset, but as the reflexes for ‘load’ in §39 show, not before a palatal onset.

Duh. ɤŋ < *bɤŋ ‘release’, Kht. ɤkɤŋ (§38a)

§50. Duh. -uŋ, Kht. -uŋ. Duhumbi rhyme -uŋ corresponds to Khoitam rhyme -uŋ, not -ɤŋ (§40 Duh. -uŋ, Kht. -ɤŋ) in one single cognate set, perhaps as the result of the (palatalised) uvular onset.

Duh. u.ɡyŋ < *a.qɤŋ ‘spirit; shadow’, Kht. a.ɡuŋ, Chi. 魂 hwon < *[m.]qʰɤ[n] ‘spiritual soul’ (§20)

§51. Duh. -in, Kht. -iː. In two cognate sets, Duhumbi rhyme -in corresponds to Khoitam rhyme -iː and Rupa rhyme -iː ~ -ɛː, not Khoitam rhyme -iŋ (§42 Duh. -in, Kht. -iŋ), which may be explained by the palatalised onsets.

Khs. ea.pein < *s'a.psin ‘liver’44, Kht. sə.sǐː ~ ʦʰə.sǐː45, Rup. a.təːiː ~ a.təːɛː, Tib. mɛhɛn < *m-šin (Hill 2019: 234), Bur. asaŋŋ < *sinŋ, Chi. 香 sin < *sin ‘pungent, painful’ (§19c)

Duh. eiŋ < *pɪn ‘suffice’46, Kht. ʨiː, Rup. ʨɛː ~ ʨɛː (§38b)

4.3. LABIALISED ONSETS

In one of the main minor correspondence patterns that can be observed, labialisation of the onset preceding nasal rhymes is one of the major triggers for nasalisation of the vowel in the rhyme in the Sartang and Sherdukpen varieties, with varying degrees of elision of the nasal coda.

§52. Duh. -aŋ, Kht. -uŋ, She. -ɔːː. There is a small set of cognates where Duhumbi rhyme -aŋ corresponds to Khoitam rhyme -uŋ and Khoina rhyme -ɔːː. The nasalisation of the vowel is attributed to the interaction of the labialised onset with the nasal coda. The degree to which the final nasal is still realised depends on the individual speaker, except in Shergaon which regularly has a long, open, nasalised vowel -ɔːː.

Duh. raŋ.бу < *a.ɾaŋ ‘straight’, Kht. a.ɾʊŋ, Khn. a.ɾɔŋ, She. a.rɔːː: (§64)

Duh. a.dəŋ < *a.dəŋ ‘when’, Kht. a.dʊŋ, Khn. a.dɔŋ, She. a.dɔːː: (§2)

Duh. jəŋ < *jəŋ ‘want’, Kht. jʊŋ, Khn. jɔːː: (§60)

§53. Duh. -an, Kht. -ɔːː. Duhumbi rhyme -an corresponds to Khoitam rhyme -ɔːː when preceded by a labialised onset, similar to correspondence §52. Jerigaon and Khoina have allophone [ːː]
in this correspondence, with allophone [a] also occurring in the reflexes of rhymes *-ak (§1), *-aŋ (§36) and *-an (§41).

Duh. an < *?an ‘select’, Kht. ā, Khn. ā, Chi. 揃 keanX < *kʰ[r][a]n (§25)

Duh. man < *mʷan ‘achieve’, Kht. mā; Khn. mā: (§28)

Duh. san < *sʷan ‘ten’, Kht. sā; Khn. sā; Tsh. se (§34)

Duh. †c.zan (§47 < *a.zʷan ‘white’, Kht. a.zā: (§35)

§54. Duh. -am, Kht. -ūŋ. When preceded by a labialised onset, Duhumbi rhyme -am regularly corresponds to nasalised Khoitam rhyme -ūŋ, in some lexemes and some speakers -ū:, unlike §45 (Duh. -am, Kht. -am).

Duh. kʰam < *kʰwam ‘be hungry’, Kht. kʰūŋ, Tib. skom.pa ‘be thirsty’ < skam.pa ‘be dry’ (§4)

Duh. le.ham < *laj.lam ‘footwear’ (§48), Kht. ly.lūŋ, Tib. lham (§42)

Duh. u.teʰam < *a.čʰʷam ‘black’, Kht. a.teʰū: (§52a)

Duh. kʰa.teʰam < *kʰa.čʰʷam ‘mud’, Kht. kʰ.teʰūŋ (§52)

Duh. ram < *rʷam ‘reap’, Kht. rūŋ (§64)

Duh. ham < *hʷam ‘rot; drench’, Kht. hū:, Khn. xā:, Rup. hū: (§43)

Duh. pʰam < *pʰʷam ‘lose, be defeated’, Kht. pʰūŋ, Tib. hpham.pa ‘(be) defeat(ed), lose, fail’, Chi. 米 sangH < *s-mᵃŋ-s ‘lose; destroy’ (§6)

4.4. MINOR CORRESPONDENCES

The majority of the minor correspondences concerning nasal rhymes can be explained through glottal or uvular onsets having a divergent effect on the following rhymes.


Duh. kʰiŋ < *kʰim ‘stand up’, Kht. kʰiː, Khn. ʨʰiː, Rup. kʰiː, Tib. hgrim.pa ‘wander, stroll’ (§11)

Duh. mej.čiŋ < *maj.pʰim ‘maize (‘sweet bamboo’), Kht. mə.ʨiː: (§38b)


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47 Duhumbi has loan จอŋ.kar cf. Tibetan yaŋ.dkar ‘white wash, lime’.
48 A compound of roots *lęp ‘leg, foot’ and *jam ‘shoe’.
49 An incomplete cognate set that can be added to this correspondence is Kht. kʰiː < *a.pʰim ‘sweet’, Khn. a.ʨʰiː, Rup. a.ʨʰiː ~ a.ʨiː: (Duh. jəŋ.jəŋ < Tsh. jəŋ.jəŋ)
§57. Duh. -en, Khn. -ɛː. In a single cognate set, where the Khoitam evidence is missing, Duhumbi rhyme -en corresponds to Khispi rhyme -in and Khoina rhyme -ɛː, not Khispi rhyme -en and Khoina rhyme -en (§41 Duh. -en, Kht. -an). This may be conditioned by the unvoiced onset *w-.

Duh. en ‘spill’ < *yen ‘spill’, Khs. in, Khn. xɛː; Chi. 这里面 yenX < *N-q(r)an? ‘overflow’, 直 yenX < *N-q(r)an? ‘flow out, extend’ (§26)


Duh. in < *ʔin ‘speak’, Kht. an, Chi. 詛 hen < *[g]i[n] ‘speak quickly’ (§25)

Duh. hin < *hin ‘one’, Kht. han, Chi. 一 jì < *ʔi[t] (§36)

§59. Duh. -on, Kht. -an. In a single cognate set, Duhumbi rhyme -on corresponds to Khoitam rhyme -an. I propose this irregular reflex of rhyme *-an (for regular reflexes see §41) is conditioned by the uvular onset.

Duh. ə.kbən < *a.qən ‘new’, Kht. a.fan, Jer. a.hen, Khs. ə.han, Khn. a.fen (§22)

§60. Khs. -un, Kht. -un. The following set, where the Duhumbi reflex is missing, indicates a correspondence between Khispi rhyme -un and Khoitam rhyme -un divergent to that of §44, which can be explained due to the glottal onset in this lexeme.

Khs. unx< *ʔun ‘come’, Kht. un, Chi. 畫 yen < *[g]a[n] ‘extend; go forward’ (§25)


Duh. dem < *dem ‘lap’, Kht. dīː, Rup. dēː: (§2)

5. Fricative rhymes

The only fricative phoneme that occurs in coda position is the alveolar fricative /s/. Whereas fricative rhymes have been preserved in Duhumbi and Khispi, they correspond to varied reflexes in the Sartang and Sherdukpen varieties. In general, Duhumbi fricative rhymes correspond to velar plosive rhymes in the Sartang and Sherdukpen varieties, with further glottalisation of the velar coda resulting in short open vowel rhymes. The number of attested cognate sets is limited for all fricative rhymes, hence no distinction between trivial and minor correspondences is made.

§62. Duh. -as, Kht. -ɔː. Duhumbi rhyme -as regularly corresponds to Khoitam rhyme -ɔː. Jerigaon and Khoina have allophone [a] like in reflexes of rhyme *-ak (§1), *-aj (§36) and *an (§41 and §53).

Duh. pʰas < *pʰas ‘gift’, Kht. pʰɔː (§15)

Duh. las < *las ‘soak in water’, Kht. lɔː (§58)

Duh. tas < *ŋras ‘comb’, Kht. nɔː, Tsh. nas (§24)

Duhumbi has possible Bod. loan lon, cf. Dzo. lhod ‘come’, Chi. 演 ywen < *lon ‘go along (a river)’.
Duh. *has.ta < *a.nas.da ‘slow’, Kht. a.nɔj:.du: (§40)

Duh. *was < *gas ‘wear’, Kht. jaʃ?, Rup. jaʃ?, Tib. gos < *gwas ‘clothing’, Chi. 被 hjwon < *[g]a[n] ‘long robe’ (§65)

Duh. teʷrɛt [tʰəwəs]51 < *teʰw as ‘excrete (urine, stool)’, Kht. teʰaʃ?, Khn. tʰəa', Rup. a.caʃ? ~ a.teʰaʃ? (§52a)

§63. Duh. -is, Kht. -ik. Duhumbi rhyme -is regularly corresponds to Khoitam rhyme -ik and Shergaon and Rupa rhyme -ik.

Duh. *bis < *bis ‘be numb (of limbs)’, Kht. zik, Rup. zik (§17)

Duh. *kʰis < *kʰis ‘hang around the neck’, Kht. kʰik, Rup. kʰik (§4)

Duh. *nis < *nís ‘two’, Kht. nik, Rup. nık, Tib. gñis < *nık, Tsh. jik.tsiŋ, Bur. nhac, Chi. ｎ yiŋH < *ni[j]-s (§31)

§63a. Duh. -is, Kht. -ik. Where Duhumbi rhyme -is corresponds to Khoitam rhyme -ik but Shergaon and Rupa rhyme -it, I propose this derives from rhyme *-it, not *-is. The reflexes of rhyme *-it are distinct when not preceded by a palatal onset (cf. §12).

Duh. *eis < *sít ‘seven’, Kht. sìk, Rup. sit, Chi. 七 tshit < *[tsʰ]i[t] (§38)

§63b. Duh. -is, Kht. -e:. There is a regular correspondence between the Duhumbi rhyme -is and the Khoitam rhyme -e: that cannot derive from *-is (§63, §63a), but, based on the comparative evidence, may go back to a reconstructed rhyme *-iw.

Duh. *u.lis52 < *a.liw.da ‘beautiful’, Kht. a.ле:.du, Chi. 修 sjuw < *s-liw ‘adorn’ (§58)

Duh. *ni.ei53 < *n.am/ a. síw ‘paddy rice’, Kht. nə.se:, Rah. teʰu a.se:, Khn. tsʰu.ge:,54 ፭ን syuw < *s-kìw ‘collect; harvest’ (§38)

Khs. kʰic ‘to turn back, to return’55 < *(la.) kʰiw ‘backwards’, Kht. la.kʰe: (§4)

§63c. Duh. -is, Kht. -ʔ. Where Duhumbi rhyme -is corresponds to Khoitam rhyme -ʔ, the comparative evidence indicates this may derive from a rhyme *-es when preceded by a glottal onset, with an intermediate form *-en > *-in in Sartang and Shergaon explaining the nasalisation. Reconstructed rhyme *-es has divergent outcomes when preceded by other onsets (§20).

Duh. *is < *ʔes ‘recognise’, Kht. řʔ, Tib. šes, Tsh. se, Bur. si ‘know’ (§25)

§64. Duh. -əs, Kht. -eʔ. Duhumbi rhyme -əs regularly corresponds to rhyme -eʔ in Khoitam

Duh. təs [tʰəs] < *təs ‘throw’, Kht. tʰeʔ, Rup. tʰəʔ (§5)

51 The unexpected Duhumbi reflex and Khs. reflex kʰat, may be under Tsh. influence, e.g. gi kʰat ‘to have the urgency to pass stool’.

52 Note how Duhumbi has lost the adjective suffix, cf. Khs. u-lič-ta.

53 Loss of coda -s may be triggered by the palatal onset: *nam-siwl > *ni-siws > ni-ei [taireis].

54 The Rahung and Khoima reflexes include the root for ‘rice’, indicating that the adjective *a-siw originally meant something like ‘unhusked, raw’. Khoima has contracted the root for rice with the adjective: *sʰu a.siwi > *sʰu a. ŝe: > nʰu.še:.

55 Duhumbi has loan dap ‘return; repeat, turn back’, cf. Mon. dap ‘again; repeat’.
Duh. ʰɔs < *bos ‘Curcuma sp.’, Kht. ʰo’, Rup. ʰo’ (§3)

§65. Duh. -us, Kht. -ik. Duhumbi rhyme -us regularly corresponds to rhyme -ik in Khoitam and all other varieties, except Shergaon which has rhyme -it.

Duh. pʰus < *pʰus ‘sow’, Kht. pʰik, She. pʰik (§6)

Duh. ʰa.kʰus < *(a ~ sʲa).krus ‘bone’, Kht. s.kik, She. s.kit, Chi. 갨 괌 갨 괵 kwoṭ < *kʰut ‘bone’ (11b)

Duh. dus < *dus ‘gather, collect (harvest, donations)’, Kht. dik, She. dit, Tib. ḫdus.pa ‘come together, gather’ (§2)

Duh. ʰtʰus < *tʰus ‘wear (a bracelet)’, Kht. tʰik, She. tʰik (§5)

§65a. Duh. -us, Kht. -ɛː. In a single cognate set, Duhumbi rhyme -us corresponds to Khoitam rhyme -ɛː. I propose this derives from a complex coda cluster *ajs, in which Duhumbi preserved the coda consonant but Khoitam lost it, with subsequent regular change *-aj > -ɛː (§68).

Duh. hin.tus < *(ŋa.) tajs ‘spittle’, Kht. ɛː, Chi. 津 thejH < *

6. APPROXIMANT RHYMES

Approximant rhymes with rhotic coda -r, palatal coda -j and labial coda -w in Duhumbi and Khispi generally correspond to open vowel rhymes in the Sartang and Sherdukpen varieties. Attestations of some correspondences are sparse. The rhotic coda *-r changed to a nasal coda *-N in Sartang and Sherdukpen, with consecutive nasalisation of the preceding vowel in several correspondences.

6.1. TRIVIAL CORRESPONDENCES


Duh. tʰer < *tʰar ‘cane carrying strap’, Kht. tʰan, Khn. tʰən (§5)

Duh. ʰa.zer < *sʰa.ḍzar ‘goral’, Kht. ʬə.ʒan, Khn. sə.ʒən (§37)

Duh. ʰer < *bʰar ‘fly’, Kht. ʰən, Khn. kʰən, Chi. 飛 pj+j < *Cə.pə[r] (§38a)

Duh. kʰar⁵⁰ < *kʰar ‘call for’, Kht. kʰən, Khn. kʰən, Chi. 喚; 湧; 喧; 讚 xjwon < *qʷbʰar ‘clamour, shout’ (§4)

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56 This refers to picking small amounts of grains from a full hand of bag and broadcast sowing those in the field.

57 Or perhaps, but less likely, Tib. ruiw ‘bone’, OBur. ruwkh, Chi. 喪 lwit < *[r]ut ‘pitch pipe’ (Sagart 2014).

58 Both the Duhumbi unaspirated onset and the rhyme reflex are unexpected.

59 This Shergaon rhyme -ik not †-it is unexpected.

60 The irregular Duhumbi rhyme reflex -ar not †-er is unexpected and may be attributed to a labialised or a uvular, rather than a simple velar onset, although this would have resulted in the expected reflexes of §60a (Duh. -ar, Kht. -ɔ).
§67. Duh. -ej, Kht. -e:. The Duhumbi rhyme -ej regularly corresponds to a Khoitam long rhyme -e: when derived from reconstructed rhyme *-aj.

Duh. bej < *baj ‘fire’, Kht. be:, OTib. mye, Tib. me, Tsh. mi, Bur. mīh, Chi. 風
\( xjweX < *\text{maj} ‘fire’ \) (§3)

Duh. eej < *baj ‘buy’, Kht. teːe:, PBG *prai¹, Chi. 買 meaX < *m‘raj? (§38a)

Duh. zej < *zaj ‘laugh’, Kht. ze:, Khn. za:, Tib. bżad ‘laugh, smile (H)’ (§39)

Duh. lej < *laj ‘leg, foot’, Kht. le: (§58)

§67a. Duh. -ej, Kht. -e?: The Duhumbi rhyme -ej regularly corresponds to a Khoitam short rhyme -e when derived from reconstructed rhyme *-ej.

Duh. a.lej < *a.rej ‘brother-in-law’, Kht. a.re‘ (§58a)

Duh. tej < *tej ‘sing’, Kht. te‘ (§8)

Duh. le⁶¹ < *rej ‘do’, Kht. re‘, Khs. li, Rup. ra‘, Chi. ꩋ hywe < *c‘(r)aj ‘make, do, act as’ (§58a)

§67b. Duh. -ej, Kht. -o:. In another correspondence, Duhumbi rhyme -ej regularly corresponds to Khoitam short rhyme -o when derived from reconstructed rhyme *-oj.

Duh. ea.bej < *s/a.boj ‘porcupine’, Kht. zu.bo‘ (§3)

Duh. jej.ba < *joj.ba ‘spicy, pungent’, Kht. ho‘.ba (§62)

§68. Duh. -oj, Kht. -e:. Duhumbi rhyme -øj regularly corresponds to Khoitam rhyme -e:, which I propose to derive from rhyme *-uj. This rhyme was retained in Khispi.

Duh. pʰøj < *nam.pʰuaj ‘flour’, Kht. nə.pʰə:, Khn. nə.fə:, Khs. pʰuaj, Tib. phyhe.ma
‘powder, dust’, WBur. phwai < *poi ‘chaff, bran’ (§23a)

Duh. høj < *hruj ‘blood’, Kht. he:, Khn. xa:, Khs. huj, OBur. suyə, Chi. 鰲 sjweX < *s-loj? ‘marrow’ (§43)

Duh. loj < *luj ‘borrow’, Kht. le:, Khs. luj, Tib. glud ‘ransom’ (§58)

Duh. loj < *luj ‘tongue’, Kht. le:, Khn. la:, Khs. luj, Tsh. le, Tib. lće < *hli‘e ‘tongue’, Bur. lhyā, Chi. 鱈 zyeX < *Cə.leʔ ‘lick’ (Hill 2013) (§58)

§69. Duh. -aw, Kht. -o:, Rup. -o:. There is a regular correspondence between the Duhumbi rhyme -aw and the Khoitam rhyme -o: where Rupa has reflex -o:. The epenthetic Duhumbi coda -w may be a reflex of an earlier labialised onset *kʰwə.

Duh. kʰəw < *kʰo ‘water’, Kht. kʰo:, Rup. kʰo:, cf. Tib. kha.ba ‘snow’, khu.ba ‘broth, soup; semen; liquid’ (§4)

Duh. aw⁶² < *ʔo ‘itch’, Kht. o: (§25)

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61 The Sartang and Sherdukpen rhymes are regular reflexes of rhyme *-ej, and the Duhumbi and Khispi irregular reflexes (Duhumbi le not *lej) may be attributed to the high usage frequency of this root.

62 The unexpected Duhumbi reflex *-aw not *-aw is conditioned by the glottal onset.
§69a. Duh. -ɔw, Kht. -ɔ:, Rup. -aw. In the cognate set ‘snatch away’ that forms a minimal pair with ‘water’ in §69, Khoi-Tam has rhyme -ɔ: not -ɔ: and Rupa and Shergaon have rhyme -aw, not -ɔ:. Considering that rhyme *-aj results in long vowel rhymes in the Sartang and Sherdupken varieties (cf. §67 Duh. -e|j, Kht. -e:) whereas rhyme *-oj results in short vowel rhymes (§67a Duh. -ej, Kht. -ɔ:), I propose that the long vowel rhymes in this correspondence derive from rhyme *-aw, whereas the short vowel rhymes in §69b (Duh. -ɔw, Kht. -ɔ:) derive from rhyme *-ow.


Duh. dɔw < *jɔw ‘parch, fry’63, Kht. dɔ:, Rup. 𝐝aw (§49)

Duh. kɔ64 < *kaw ‘door’, Kht. ɔ:, Rup ƙaw, Tib. sgo, Chi. ʃ hυx < *m-q’a? (§7)

Duh. ɔ [†ɛw]65 < *baw ‘burst, explode’, Kht. əw: (§38a)

§69b. Duh. -ɔw, Kht. -ɔ:. Where Duhumbi rhyme -ɔw corresponds to Khoi-Tam short open rhyme -ɔ: not long open rhyme -ɔ: and Rupa has rhyme -aw not long open rhyme -ɔ:, I propose this derives from reconstructed rhyme *-ow, not *-o (§69) or *-aw (§69a).


Duh. jɔw < *jɔw ‘wake up’, Kht. jɔ:, Rup. jaw (§60)

Duh. pʰɔw < *pʰaw ‘spread out to dry’, Kht. pʰɔ, Rup. pʰaw (§6)

6.2. MINOR CORRESPONDENCES

§70. Duh. -ar, Kht. -ɔ:. In two cognate sets, the Khoi-Tam reflex of rhyme *-ar is -ɔ: not -ar. This is most likely the result of the uvular or glottal onset, with an intermediate Khoi-Tam form *-an > *-on explaining the nasalisation.

Duh. wa.ar < *a.ʔar ‘dry (adj.)’, Kht. yk.ɔ:, Khs. o.wal, Tib. sro ‘dry by exposing to the sun’, Chi. 書 xanH < *[qʰ]ʼar-s ‘dry’ (§25)

Duh. har < *ŋa.qar ‘phlegm’, Kht. nɔ.hɔ:, Khs. nɔ.xa:, Rup. nɔ.kʰɔ:, Khs. ha.hal, Chi. 次 zjen < *s-N-qa[r] ‘saliva; spittle’66 (§43a)

§71. Duh. -ir, Kht. -i:. Duhumbi rhyme -ir corresponds to Khoi-Tam rhyme -i:, in which there likely was an intermediate Khoi-Tam form *-in.

63 Note how Duhumbi, Khs. and Shergaon make a semantic distinction between *jɔw ‘parch’, i.e. ‘to toast or roast (e.g. grains) by using dry heat without any oil or grease’ and *ژɔw ~ ژaw ‘fry’ (undetermined because Khoi-Tam reflex is missing), i.e. ‘to fry in oil, fat or grease’, whereas all other varieties only have a single lexeme for both. The Duhumbi, Khs. and Shergaon forms are etymologically closely related: Duhumbi and Khs. ژɔw ‘fry’, ژaw ‘parch’, Shergaon ژaw ‘fry’, ژaw ‘parch’. 64 Unexpected Duhumbi reflex kɔ not *ʧɔw may be due to the unvoiced, unaspirated onset, or could be explained through contact language influence, cf. Dirang Tshangla ko.

65 The Duhumbi rhyme is unexpected, and cognate Rupa and Shergaon evidence is missing: Rupa prɔk and Shergaon prɔk, cf. Tshangla prɔk.

66 The Western Kho-Bwa reflexes may evidence the N-prefix reconstructed for Chinese here.
Duh. *r < *?ir ‘ride (a horse)’, Kht. ḫ-, Khn. ȅ-. Rup. ȅ:67 (§25)

§72. Duh. -r, Kht. -ok. The rare Duhumbi rhyme -or corresponds to Khoitam rhyme -ɔ.

Duh. Ṣor < *jor ‘perforate’, Kht. Ṽ-, Khn. Ṽ-, Rup. Ṽk (§42)

§73. Duh. -ur, Kht. -iŋ. The rare Duhumbi rhyme -ur corresponds to rhyme -iŋ in Khoitam and all other varieties.

Duh. mur < *a.mur ‘pubic hair’, Kht. a.minj (§28)

§74. Duh. -aj, Kht. -e:. When deriving from a glottal onset, Khoitam rhyme -e: corresponds to a Duhumbi rhyme -aj, not -ej (§67). Although the comparative evidence suggests a lateral rhyme *-al in both lexemes, lateral rhymes have not been reconstructed for Proto-Western Kho-Bwa.

Duh. haj < *haj ‘burn’, Kht. he:, PBG *sal ‘sun; day’, Miz. ṽal ‘burn’ (§36)

Duh. aj < *aj ‘fight (n)’, Kht. je:, Miz. tâl ‘struggle (v)’ (§27)

§74a. Duh. -aj, Kht. -ɔ:. When preceded by a glottal or devoiced onset, Duhumbi rhyme -aj corresponds to Khoitam rhyme -ɔ:, Khoina rhyme -a: and Rupa rhyme -ɔ:, which is distinct from the reflexes when preceded by other onsets (§67b, §75).

Duh. aj < *oj ‘see’, Kht. ɔ:, Rup. o:, Tib. sad68 (§25)

Duh. haj < *loj ‘plant’, Kht. lo:, Rup. lo:, Khn. ha: (§42)

Duh. aj < *oj ‘ok’, Kht. ɔ:, Rup. ɔ.o: (§25)

§74b. Duh. -aj, Kht. -ɔ:. In the following cognate set, Duhumbi rhyme -aj corresponds to Khoitam rhyme -ɔ:. Perhaps the distinct reflexes can be attributed to the voiceless nasal onset or a complex rhyme *-ajs.

Duh. haj < *a.ŋojs ‘pus’, Kht. a.nɔ:, Tib. snabs, Bur. nhap ‘mucus’ (§40)

§75. Duh. -ej, Kht. -ɔ:. Unlike correspondence §67b (Duh. -ej, Kht. -ɔ‘), when preceded by a rhotic onset cluster, Duhumbi rhyme -ej regularly corresponds to Khoitam long rhyme -ɔ: when derived from reconstructed rhyme *-oj.


§75a. Duh. -oj, Kht. -ɔ:. Unlike correspondence §67b (Duh. -ej, Kht. -ɔ‘), when preceded by a labial onset, Duhumbi rhyme -oj regularly corresponds to Khoitam long rhyme -ɔ: when derived from reconstructed rhyme *-oj.

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67 The divergent Rupa, Khoina and Shergao reflexes may be attributed to the glottal onset.
69 Duhumbi (and some other varieties) has regularly lost the nominalising suffix that is reconstructed to *-da in adjectives but preserves it in most adverbs. Cf. also the Khs. reflex ə.bej.da ‘sweet’.
Duh. \(wj\)^70 ‘plough’ < *woj, Kht. \(w:\) (§59)

§76. Duh. -øj, Kht. -a: Why in the following set Duhumbi rhyme -øj corresponds to Khoitam rhyme -a: not -e: (as expected on basis of correspondence §68) is not clear. The Rahung and Shergaon reflexes are also highly irregular:

Duh. \(wj\) ‘he / she’ < *wuį^71, Kht. \(wa:\); Rah. \(he:\) ~ e: [\(\dagger we:\)], She. \(ja:\) [\(\dagger wa:\)], Khs. \(wuį\) (§59)

7. **Sound correspondences in loans**

There are several sets in which the forms are quite clearly cognate, but in which either the rhymes or they onsets do not follow the sound correspondences described in this and the onset paper. The comparative evidence from contact languages in many cases indicates that this could be explained by the influence of loan lexemes in the various varieties.

§77. Duh. -op, Kht. -op. In the following cognate set, Duhumbi rhyme -op corresponds to rhyme -op in Khoitam and the other Sartang and Sherdukpen varieties, except Khoina which has characteristic rhyme -op and Rahung which has rhyme -op. On basis of correspondence §22, we would expect Kht. reflex -k and Khn. reflex -op or -ok. Together with the unexpected onset reflexes, this is additional evidence that this lexeme is a loan.

Duh. \(kʰöp\) < *?kʰop ‘gather, collect (harvest, people, cattle)’, Kht. \(kʰop\), Khn. \(kʰə\), Rah. \(kʰop\), Rup. \(kʰop\), Khs. \(kʰop\), Tsh. \(kʰop\) ‘gather, collect’, Tib. \(sgrug\) ‘collect, gather, pluck, sgrug’ (§69)

§78. Duh. -ur, Kht. -or. The irregular rhyme correspondences in the following cognate set probably indicate that this lexeme is a later loan, which is also confirmed by the irregular onset correspondences.

Duh. \(tɛur\) < *?čur ‘surround, confine’^72, Kht. \(tɛr\), Rah. \(tɛy:\), Rup. \(tɛr\)^73, Khs. \(tɛul\), Tib. \(gɛur.ba\) ‘be pressed into’ (§73)

§79. Duh. -ar, Kht. -ar. Unlike correspondence §66 (Duh. -er, Kht. -an), in the following set, Duhumbi rhyme -ar corresponds to Khoitam rhyme -ar. In Khoitam, rhyme -ar is extremely rare, and combined with the good cognates in contact languages, this lexeme is presumably a loan, even though the lexeme has the characteristic Western Kho-Bwa adjective prefix.

Duh. \(u.gar\) < *a.gar ‘strong (of liquor), Kht. \(a.gar\), Tib. \(gɛar.po\), Tsh. \(gar.bu\) (§1)

§80. Duh. -ir, Kht. -iː. Similarly, the irregular Khoina and Rupa rhyme reflexes compared to correspondence §71 indicate a later Bodish loan in the following cognate set.

Duh. \(tɛir\) < *?čiɾ ~ ?kiɾ ‘squeeze’, Kht. \(tɛi:\), Khs. \(tɛi:\) [\(\dagger tɛi:\)], Rup. \(ɛi:\) ~ \(ɛi:\) [\(\dagger tɛi:\)], Khs. \(tɛil\), Tib. \(gɛir.ba\) (§73)

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^70 The Duhumbi rhyme reflex, \(wj\) not \(\dagger waj\) ~ \(wj\) is unexpected and may point to a complex onset, cf. also PBG *bwaįl ‘plough v.t.’, Chin. \(hwa\) < *\(\dot{a}\)ọij (19–07a) ‘growing grain’, Tib. \(gro\) < *\(\ddot{a}\)ro (Peiros and Starostin’s law) < *\(\ddot{a}\)ro ‘wheat’.

^71 Note how in many languages of the region, demonstratives are formed using a root derived from Old Tib. \(ho\) ~ \(hu\) ‘this’, e.g. Tsh. \(u.pu\) ‘this here’, \(o.pu\) ‘that there’, Bro. \(o.pi\) ‘this here’, Mon. \(u.is\) ‘this here’, \(o.pi\) ‘that there’.

^72 Esp. said of calves in a fenced surrounding or chickens in a coop.

^73 Expected Sartang and Sherdukpen reflexes would be \(\dagger tɛi\).
§82. Duh. -a, Kht. -an. The divergent rhyme reflexes in the following lexeme, not as could be expected on basis of correspondence §6 (Duh. -et, Kht. -e'), combined with the clear Bodish cognates evidence that this suffix must be a loan.


8. **Synopsis**

This paper presents the main rhymes correspondences between the Western Kho-Bwa varieties Duhumbi and Khoitam, providing reconstructions of the proto-forms based on the current state of knowledge. The paper also provides comparative evidence from the other Western Kho-Bwa varieties and other languages and reconstructed proto-languages where deemed illustrative.

Duhumbi was taken as the outset for the comparisons, because Duhumbi and Khispi have conservatively preserved rhymes. Many rhymes were simplified in Sartang and Sherdukpen, resulting in the rich vocalism that distinguishes these varieties.

Proto-Western Kho-Bwa has been reconstructed with the following rhymes: plosive rhymes ak, ek, ik, ok, uk; at, et, it, ot, ut; ap, ep, ip, op, up; and glottal rhyme aʔ; open rhymes a, i, o, u; nasal rhymes an, en, in, on, un; am, em, im, om, um; fricative rhymes as, es, is, os, us; approximant rhymes ar, or, ur; aj, ej, aj, ij, oj, uj; aw, iw, ow; and two rhyme clusters, -ajs and -ojs. The main anomalies in the rhyme inventory of Proto-Western Kho-Bwa are the presence of the rhyme /aj/, whereas there is no evidence for a distinct phoneme /a/ nor other rhymes with this vowel, and the absence of distinctive rhymes /e/, /en/, /er/, /ew/ and /uw/.

The velar plosive and velar nasal rhymes have been relatively conservatively preserved in the Western Kho-Bwa varieties (e.g. -ak in §1, -ek in §2, -ik in §3, -ok in §4, -uk in §5, -an in §36, -en in §37, -en in §38, -en in §39 and -un in §40) albeit with modifications of the vowel in several of the rhyme reflexes. In addition, rhymes with vowel /a/ have been well preserved in the Western Kho-Bwa varieties (e.g. -ak in §1, -ap in §10, -an in §36 and -am in §45), whereas rhymes with the other vowels have been reasonably well preserved in Duhumbi and Khispi, but resolated in varying reflexes in the Sartang and Sherdukpen varieties.

The alveolar and bilabial plosive rhymes have been well preserved in Duhumbi and Khispi but resulted in divergent rhyme reflexes in the Sartang and Sherdukpen varieties. In many cases, the Sartang and Sherdukpen varieties either changed the alveolar or bilabial plosive into velar plosive rhymes (e.g. *-ut in §9), or into short, glottal constricted vowel rhymes (e.g. *-et in §7, *-ot in §8, *-it in §12, *-ep in §21, *-ip in §21a). Similarly, whereas fricative rhymes with coda -s were relatively well preserved in Duhumbi and Khispi, they changed into velar plosive rhymes (e.g. *-is in §63 and *-us in §65) or short glottal constricted vowel rhymes (e.g. *-es in §63c, *-as in §62 and *-os in §64) in the Sartang and Sherdukpen varieties. Rhotic rhymes, well preserved in Duhumbi as -r and in Khispi, which lacks a distinctive rhotic phoneme, as -l, commonly changed into nasal rhymes in the Sartang and Sherdukpen varieties (e.g. *-ar in §66 and *-ur in §73) with subsequent nasalisation in some cases (e.g. *-ir in §71). Palatal and labial glide rhymes were reasonably well preserved in Duhumbi and Khispi, albeit with varying reflexes of the vowel nucleus, whereas they changed into either long open vowels (e.g. *-aj in §33a, *-aj in §67, *-uj in §68, *-iu in §63b and *aw in §69a) or short, glottal constricted vowels (e.g. *-ij in §33, *-ej in §67a, *-oj in §67b and *ow in §69b) in Sartang and Sherdukpen, being one of the sources of the rich vowel inventories in these varieties. Finally, open rhymes are
commonly preserved as open rhymes in the Western Kho-Bwa varieties, although the effect on the vowel quality can be quite distinct (e.g. *-a to -u in §24 and *-u to -y in §27 in Sartang and Sherdukpen, or *-o to -ɔ in §69 in Duhumbi and Khispi).

Several Western Kho-Bwa onsets can be shown to have a modifying effect on rhyme reflexes, resulting in reflexes distinct from the expected reflexes based on the main correspondence pattern. The rhyme reflexes are often distinct when preceded by of glottal onsets *ʔ- or *h- and uvular onsets *q- (e.g. §16, §56, §58, §59, §60, §63c, §74, §74a); in the case of labialised onsets (e.g. §17, §18, §19, §29, §30, §75a), with characteristic nasalised reflexes in the Sartang and Sherdukpen varieties when preceding nasal rhymes (e.g. §52, §53, §54, §70); and in the case of palatalised onsets (e.g. §11, §12, §13, §15, §34, §48, §49, §50, §51, §63a) and rhotic onset clusters (e.g. §14, §28, §75). Finally, rhyme reflexes may be distinct in the case of prefixes and suffixes, as is shown in §31 and §35.

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