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 (Sūn 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

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[1] More recent publications, at the time unavailable to Sun, include the Puroik description from China by Lǐ (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

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[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 *sʲa. '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 [vˀ], although they would more accurately be transcribed as [v̰ˀ]. 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 [v̄: ~ v̄:ʱ]. Additional transcription symbols found in Chinese reconstructions are (ˤ) indicating type A syllables and (ʔ) indicating pre-glottalised onsets. In Burmese and Tibetan transcriptions, the velar nasal is indicated by (ṅ), the palatal nasal by (ñ), the unvoiced and voiced palatal fricatives by (ś, ź) and level tone in Burmese by a macron (¯) above the vowel.

The Sherdukpen varieties Rupa and Shergaon have distinctive postalveolar affricates [tʃ], [tʃʰ] and [dʒ] but no distinctive postalveolar [ʃ, ʒ] or palatal [ɕ, ʑ] fricatives. A distinction between these postalveolar affricates and alveolar affricates [ts], [tsʰ] and [dz] 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 [cʰ] and [ɟ], whereas these have again merged with the postalveolar affricates in Shergaon and among the younger Rupa speakers.[4] Khispi and Duhumbi have distinctive palatal fricatives [ɕ] and [ʑ] and palatal affricates [tɕ], [tɕʰ] and [dʑ]. 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 *ts, *tsʰ and *dz for the alveolar series and *č, *čʰ and *ǰ 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 *tʃ-* and *ts-*, *tʃʰ-* and *tsʰ-*, *tʃʰ-* and *cʰ-*, *dʒ-* and *dz-* and *dʒ-* and *ɟ-*, whereas in the younger generation *ts-* and *tʃ-* have merged to *tʃ-*, *tsʰ-*, *cʰ-* and *tɕʰ-* have merged to *tɕʰ-* and *ɟ-* and *dz-* (and often *dz-*) have merged to *dz-* (as in most other Sartang and Sherdukpen varieties except Khoina). As this is an ongoing phonological process with varying actual realisations as well as significance for the reconstructions, the notation (~) was used (e.g. *tsʰak ~ tɕʰak*).

convention had to be assumed for the palatal fricatives, even though these vary between [ʃ] and [ʒ] in Khoina and [ɕ] and [ʑ] 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 [ɕ] and [ʑ], 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 [tɕ], [tɕʰ] and [dʑ].

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. *tʰĩŋ* not *tʰĩ:* ~ *tʰĩŋ*). In those lexemes where the nasal is lost among all speakers, only nasalisation of the vowel is reflected in the notation (e.g. *tʰĩ:* not *tʰĩn*).

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 and Khispi 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 [ɑ] of vowel /a/ in reflexes of rhyme *-ak, *-aŋ (§36), *-an (§41 and §54) and *-as (§62).

> Duh. *pʰak* < *pʰak 'liquor', Kht. *pʰak*, Jer. *pʰak* (§6)
>
> Duh. *dak* < *zrak 'weave', Kht. *rak*, Tib. √tag (pres. *ḫthag*), Bur. *rak* < *C-tak, Chi. 織 *tsyik* < *tək (§13)
>
> Duh. *tʰak* < *tʰak 'rope', Kht. *tʰak*, cf. Tib. *thag.pa,* Tsh. *tʰak.pa* (§5)
>
> Khs. *gan.dʑi pʰak* < *pʰrak 'forget'[5], Kht. *pʰlak*, Rah. *pʰrak* (§15)
>
> Duh. *ɕak* < *bʲak 'cliff', Kht. *tɕʰak*, Khn. *tsʰak*, Tib. *brag*, Tsh. *brak* (§38a)
>
> Duh. *tɕʰak* < *kʰʲak 'bitter', Kht. *tɕʰak*, Rup. *cʰak* ~ *tɕʰak*, Tib. *kha*, Bur. *khāḥ*, Chi. 苦 *khuX* < *kʰˤaʔ (§50)
>
> Duh. *tɕʰak* < *tsʰak 'taro', Kht. *tɕʰak*, Khn. *tsʰak* (§46)
>
> Duh. *lak* < *lak '1. penis; 2. lick', Kht. *lak*, Tsh. *lɔŋ* 'penis', Tib. √ldag (pres. *ldag*) 'lick', Chi. 食 *zyik* < *mə-lək 'eat' (Hill 2019: 288) (§58)

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[5] Duhumbi has loan *grandʑa ŋat* 'to forget', cf. Dirang Tshangla. *grandʑa ŋat* 'to forget', Bhutan Tshangla *ŋat* 'to forget'.

Duh. *ɕa.bak* < *sʲa.pak 'pig', Kht. *su.wak*, Khs. *ɕa.bak*, Tib. *phag*, Tsh. *pʰak.pa*, Bur. *wak* < *C-pak (Hill 2019: 287) (§21a)

Duh. *mak* < *m̥ʷak[6] 'beat', Kht. *wak* (§32b)

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

Duh. *ɔ.kʰʲɛk*[7] < *a.qrek 'red', Kht. *ə.hɛk*, Jer. *ə.hɛk*, Khs. *ɔ.hɛk*, Khn. *a.xajk*, Tib. *khrag* 'blood', Chi. 赩 *syek* < *[qʰ](r)Ak or 赩 *xik* < *[qʰ](r)ək (§22a)

Duh. *dʲɛk* < *zrek 'shoot', Kht. *rɛk*, Chi. 射 *zyek* < *Cə.lAk 'hit with bow and arrow' (§13)

Duh. *hʲɛk* < *hrek 'louse', Kht. *hɛk*, Khn. *xajk*, Tib. *śig*, Chi. 蝨 *srit* < *sri[k] (§43)

Duh. *lʲɛk* < *rek 'field', Kht. *rɛk*, Khs. *lɛk*, Mon. *lʲɛŋ*, Tib. *źiṅ* < *lʲiṅ, Chi. 田 *den* < *lˤiŋ (§58a)

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

Duh. *tsik* < *tsik 'pinch', Kht. *tɕik* (§45)

Duh. *tɕʰik* < *tsʰʲik 'heat up', Kht. *tɕʰik*, Rup. *tsʰik ~ tɕʰik*, Khn. *tsʰik* (§50b)

Duh. *dʑik* < *dzrik 'ask', Kht. *zik*, Jer. *dʑik ~ dʑik*, Khn. *ʑik* (§57)

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

Duh. *pʰɔk* < *pʰok 'barley', Kht. *pʰuk* (§6)

Duh. *dʑɔk* < *dzok 'stab', Kht. *dʑuk*, Rup. *dʑuk ~ dʑuk*, Khn. *dʑuk*, Tib. *ḥdzugs.pa* 'poke, prick, stab' (§53)

Duh. *ɕa.kʰɔk* < *sʲa.kʰok 'skin', Kht. *s.kuk*, Khn. *ʂ.kʰuk*, Tib. *skog.pa* 'shell, peel', Bur. *khok* < *ʔkuk 'bark (n.)', Chi. 殻 *khaewk* < *[kʰ]ˤrok 'hollow shell, hollow' (§4)

Duh. *ɕa.dʑɔk* < *sʲa.qʲok 'soybean', Kht. *suk*[8], Khs. *ɕa.dʑɔk*, Chi. 未 *syuwk* < *s.tuk 'pulse, beans' (§57a)

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

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[6] The regular rhyme reflex *-ak* 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 *m̥-, as *mʷ- would have resulted in the rhyme reflexes of §17.

[7] Also: [ɔ.hʲɛk ~ ɔ.qʰʲɛk].

[8] A contraction of *sə.juk, 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. *nut*, She. *nuk*, Tsh. *nuŋ* (§29)

Duh. *buk* < **buk* 'breath', Kht. *byk*, Tib. *dbugs* (§3)

Duh. *zuk* 'thorax' < **zuk* 'face', Kht. *zyk*, Tib. *gzugs* 'form; body (Hon.)' (§35)

Duh. *huk* < **l̥uk* 'pour', Kht. *l̥yk*, Tib. *zlug* 'pour in', *lug* 'cast', Tsh. *luk* (§42)

Duh. *uk* < **ʔuk* 'hide', Kht. *uk*[9] (§25)

§6. *Duh. -ɛt, Kht. -ɛˀ, Rup. -at.* Duhumbi rhyme *-ɛt* regularly corresponds to Khoitam rhyme *-ɛˀ* and Rupa rhyme *-at*.

Duh. *gɛt* < **grat* 'break', Kht. *dʑɛˀ*, Rup. *gat* (§10)

Duh. *ɕɛt* < **sʲat* 'exit', Kht. *sɛˀ*, Rup. *sat* (§38)

Duh. *jɛt* < **jat* 'flee', Kht. *jɛˀ*, Rup. *jat*, Chi. 逸 *yit* < **[l]i[t]* 'flee' (§60)

Duh. *mʲɛ.ka*[10] < **a.mrat* 'many', Kht. *a.mɛˀ*, Rup. *a.mat*, Tib. *rmad.pa* 'excellent, wonderful, marvellous', WBur. *mrat* 'be excellent, exceed; gain, profit' (§32a)

Duh. *ɔ.tʰɛs*[11] < **a.tʰʲat* 'thick', Kht. *a.tʰɛˀ*, Rup. *a.tʰat*, Chi. 腆 *thenX* < **tʰˤə[n]ʔ* 'thick, ample' (§5)

Duh. *sar.gɛˀ*[12] < **sar-gʲat* 'eight', Kht. *sar.dʑɛˀ*, Rup. *sar.ɟat ~ sar.dʑat*[13], Tib. *brgyad* < **bryat*, Mon. *gɛt*, 'eight', OBur. **rhyat* (cf. Nishi 1999: 47), Chi. 八 *peat* < **pˤret* (§68)

§7. *Duh. -ɛt, Kht. -ɛˀ.* The rare Duhumbi rhyme *-ɛt* corresponds to Khoitam and Rupa rhyme *-ɛˀ*.

Duh. *lɛt* < **ret* 'have intercourse', Kht. *rɛˀ*, Rup. *rɛˀ*, Chi. 徹 *trhjet* < **tʰret* 'penetrate' (§58a)

§8. *Duh. -ɔt, Kht. -ik.* Duhumbi rhyme *-ɔt* regularly corresponds to rhyme *-ɛˀ* in Khoitam (and Khoina, Rahung) and rhyme *-eˀ* in Jerigaon (and Rupa, Shergaon).

Duh. *jɔt* < **jot* 'be late', Kht. *jɛˀ*, Khn. *jɛˀ*, Jer. *jeˀ* (§60)

Duh. *tɕʰɔt* < **tsʰot* or **tsʰʲot* 'make', Kht. *tɕʰɛˀ*, Khn. *tsʰɛˀ*, Jer. *tɕʰeˀ*, Tsh. *tɕʰɔt* (§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

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[9] Preservation of rhyme *-uk*, not †*-yk* in the Sartang and Sherdukpen 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. **mɛt-ka > mɛ-ka*.

[11] This reflex was expected to be †*ɔ-tʰɛt,* 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 [gɛˀ].

[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.rgʲat < **sa.grʲat*.

from the reflexes of rhyme *-ut when preceded by a labialised onset (§18) or a palatalised onset (§15).

> Duh. *hut* < *m̥ut 'blow', Kht. *mik*, Jer. *wik*, She. *mit*, Bur. *mhut* 'blow away' (§41)

> Duh. *tɕut* < *ʔtʲut[14] 'take off (clothes)', Rup. *tik*, She. *tit*, Chi. 脱 *thwat* < *mə-l̥ˤot 'peel off' (§?)

§10. *Duh. -ap, Kht. -ap.* Duhumbi rhyme *-ap* regularly corresponds to rhyme *-ap* in Khoitam.

> Duh. *tɕʰap.bu* < *a.tsʰʲap.da 'thin', Kht. *a.tɕʰap.du*, Rup. *a.tsʰap.du ~ a.tɕʰap.du*, Khn. *a.tsʰat.du*[15] (§50b)

> Duh. *u.lap* < *a.ɽap 'leaf', Kht. *a.rap*, Rup. *a.lap*, Chi. 葉; 枼 *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. -uʔ, 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.

> Duh. *ŋak* < *ŋʲaʔ 'language', Kht. *nuʔ*, Rup. *ɲuk*, Tsh. *ŋaŋ* 'song', Tib. *ṅag* 'speech', Chi. 語 *ngjoX* < *ŋaʔ 'speak' (§30)

§12. *Duh. -ik, Kht. -iʔ.* Unlike correspondence §3 (Duh. *-ik*, Kht. *-ik*), in the following set, Duhumbi rhyme *-ik* corresponds to rhyme *-iʔ* in Khoitam and the other Sartang varieties and rhyme *-eʔ* 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. *tɕʰiʔ*, Khn. *tʂʰiʔ*, Rup. *kʰeʔ*, She. *kʰriʔ* (§11)

§13. *Duh. -uk, Kht. -uk, 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* < *kʰrʲuk 'six', Kht. *tɕʰyk*, Khn. *tʂʰyk*, Rup. *kʰyt*, Tib. *drug*, WBur. *khrok* < *kruk, Chi. 六 *ljuwk* < *k.ruk (§50a)

§14. *Duhumbi -at, Khn. -ɛt.* In a single cognate set, Duhumbi rhyme *-at* corresponds to Khoina rhyme *-ɛt*[16] and Rupa rhyme *-at*, with the unexpected Khoina and Rupa reflexes (cf. §7 Duh. *-ɛt*, Kht. *-ɛʔ*) perhaps conditioned by the onset cluster.

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[14] This root may be the only evidence for a palatalised onset *tʲ-, 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.kɔ:* here, cf. Tib. *las.ka* 'work' and Dirang Tshangla *le:.ka:*.

Duh. *pat* 'do work' < *brat 'work', Khn. *blɛt*, Rup. *blat* (§14a)

§15. *Duh. -ut, Kht. -ik.* In a single cognate set, Duhumbi rhyme *-ut* corresponds to rhyme *-uˀ* in Khoitam. The Shergaon reflex *-iˀ* indicates that the change from *-yˀ / *-y: > *-iˀ / -i:* in Shergaon took place after the change from *-ut > -yˀ* (i.e. *-uC > *-y > -i*). The distinct reflexes from §9 may be attributed to the palatalised onset.

Duh. *ɲut* < *nʲut 'put on (shoes, pants)', Kht. *nyˀ*, She. *niˀ* (§31)

2.3. LABIALISED ONSETS

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

§16. *Duh. -ɔk, Kht. -ɔk.* Duhumbi rhyme *-ɔk* corresponds regularly to rhyme *-ɔk* in Khoitam when rhyme *-ak is preceded by a labialised onset.

Duh. *ɔ.dɔk* < *a.dʷak 'big', Kht. *a.dɔk* (§2)

Duh. *kʰin.tɕʰɔk* < *(sʲa. ~ kʰa.) qʰrʷak 'ant', Kht. *saŋ.dʐɔk*, Khn. *ʂan.dʐɔk*, Tib. *grog.mo*, Chi. 蚼 *xuwX* <*qʰˤ(r)oʔ (§56)

Duh. *dʐɔk.pu* < *a.ǰʷak 'fast', Kht. *a.dʐɔk* (§49)

Duh. *jɔk* < *jʷak 'dig', Kht. *jɔk*, Rup. *wɔk* (§66a)

§17. *Duh. -ɔp, Kht. -ɔp.* In a single cognate set, Duhumbi rhyme *-ɔp* corresponds to rhyme *-ɔk* in Khoitam when deriving from rhyme *-ap preceded by a labialised onset, similar to the correspondence between Duhumbi *-ɔk* and Khoitam *-ɔk* in §16. Both Khoina and Duhumbi show coda plosive alternation *-k ~ -p*.

Duh. *kʰɔp ~ kʰɔk* < *kʰʷap 'nest; hive; womb', Kht. *kʰɔk*, Khn. *kʰɔp ~ kʰɔk* (§4)

§18. *Duh. -ut, Kht. -ik.* In a single cognate set, Duhumbi rhyme *-ut* corresponds to rhyme *-ik* in Khoitam and Shergaon. The distinct rhyme reflex in Shergaon compared to the reflexes in §8 may be attributed to the labialised uvular onset.

Duh. *hut* < *qʷut 'hand, arm', Kht. *ik*, She. *ik* [†*it*], Chi. 右 *hjuwH* < *m-qʷəʔ-s ~ *m-qʷəʔ; *hjuwX* < *[ɢ]ʷəʔ 'right hand' or 肘 *trjuwX* < *t-[k]<r>uʔ 'elbow' (§43b)

2.3. MINOR CORRESPONDENCES

§19. *Duh. -at, Kht. -ɔˀ.* Unlike the correspondence pattern in §6 (Duh. *-ɛt*, Kht. *-ɛˀ*, Rup. *-at*), Duhumbi rhyme *-at* corresponds to short Khoitam and Rupa rhyme *-ɔˀ* whe preceded by a glottal or uvular onset.

Duh. *at* < *ʔat 'kill', Kht. *ɔˀ*, Rup. *ɔˀ*, Tib. √sad (pres. *gsod*) (Hill 2019: 31), Tsh. *ɕe*, Bur. *sat*, Chi. 殺 *sreat* < *srat (§25)

Duh. *wat* < *ɢat 'clothing', Kht. *jɔˀ*, Rup, *jɔˀ*, Tib. *gyon ~ gon* < *gʷan 'wear', Chi. 褐 *hat* < *[ɢ]ˤat 'coarse cloth' (§65)

Duh. *hat* < *ɢʰat 'split lengthwise (bamboo)', Kht. *jɔˀ*, She. *hɔˀ*, Chi. 戉 *hjwot* < *[ɢ]ʷat 'a kind of axe' (§43c)

§20. *Duh. -ɛt, Kht. -eˀ*. In a few cognate sets, Duhumbi rhyme *-ɛt* corresponds to Khoitam and Rupa rhyme *-eˀ* and Khoina rhyme *-ɛˀ*. I propose this correspondence derives from rhyme *-es*, which has distinct reflexes when preceded by a glottal onset (§63c).

Duh. *ʑɛt* < *dʑⁱes 'tear', Kht. *zeˀ*, Rup. *zeˀ*, Khn. *zɛˀ* (§39a)

Duh. *tsʰɛt* < *tsʰʲes 'need', Kht. *tɕʰeˀ*, Rup. *tsʰeˀ* ~ *tɕʰeˀ*, Khn. *tsʰɛˀ*, Tsh. *tsʰas* (§50b)

§21. *Duh. -ip, Kht. -eˀ*. In two homophonous cognate sets, Duhumbi rhyme *-ip* regularly corresponds to rhyme *-eˀ* in Khoitam. I propose this derives from rhyme *-ep*.

Duh. *kʰip* < *kʰrep 'cave', Kht. *tɕʰeˀ*, Khn. *tʂʰeˀ*, Rup. *kʰeˀ*, She. *kʰeː*, Chi. 穴 *hwet* < *[ɢ]ʷˤi[t] 'cave, pit' (§11)

Duh. *kʰip* < *kʰrep 'cry', Kht. *tɕʰeˀ*, Khn. *tʂʰeˀ*, Rup. *kʰeˀ*, She. *kʰeː*, Tib. *khrab-khrab* < *krəp 'a person prone to weep', Chi. 泣 *khip* < *k-r̥əp (§11)

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

Duh. *gip* < *gip 'fold (clothes)', Kht. *gɔp*, Khn. *guˀ*, Rah. *kik*, Rup. *git*, She. *git* (§1)

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

Duh. *tɕʰɔp* < *tsʰop 'fishing net', Kht. *tɕʰuk*, Khn. *tsʰuk* (§46)

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

Duh. *bɛj.dup* < *baj.zrup 'hearth, fireplace', Kht. *b.rɔp*, She. *b.rɔk* [†*b.rɔp*], Rah. *b.røp*, Khn. *baː.rø*, Miz. *rap* 'fireplace shelf' (§13)

Duh. *sam.tu*[17] [†*ɕa.tup*] < *sʲa.tup 'rat', Kht. *s.tɔp*, She. *s.tɔp*, Rah. *s.tøˀ* [†*s.tøp*], Khn. *s.tʰøˀ* (§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. *sʲa-tup > *ɕa-tup > *ɕap-tu > *ɕam-tu > *sam-tu*.

3.1. TRIVIAL CORRESPONDENCES

§24. *Duh. -a, Kht. -uː.* The Duhumbi rhyme *-a* regularly corresponds to Khoitam rhyme *-uː*, 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. *guː*, Tib. *ṅa*, Bur. *ṅā*, Chi. 吾 *ngu* < *ŋˤa (§1)

Duh. *ɕa* < *sʲa 'meat, animal', Kht. *suː*, Tib. *śa*, Tsh. *ɕa* 'meat' (§38)

Duh. *u.ja* < *a.ja 'wife', Kht. *a.juː* (§60)

Duh. *kʰa* < *kʰa 'five', Kht. *kʰuː*, Tib. *lṅa*, Tsh. *ŋa*, Bur. *ṅāh̥*, Chi. 五 *nguX* < *C.ŋˤaʔ (§4)

Duh. *ɕa* < *bʲa 'precipitate (snow, rain, hail)', Kht. *tɕʰuː*, Khn. *tsʰuː*, Rup. *tsʰuː* ~ *tɕʰuː* (§38a)

Duh. *la* < *la 'mountain', Kht. *luː*, Tib. *la* 'mountain pass', Tsh. *la* 'mountain pass' (§58)

Duh. *nam.ba* 'moon', *nam.la* 'month' < *nam.bra 'moon', Kht. *nam.bluː*, Rah. *nam. bruː* 'moon; frost', Tib. *zla*, WBur. *la* (§14)

Duh. *zɔː.pʰa* < *bʲi.pʰa 'man', Kht. *dʑə.huː*, Khn. *dʑə.fuː*, Bur. *-pha* < *pa 'male' (§23)

Duh. *le.pʰa* < *laj.pra 'thigh', Kht. *lə.pʰluː*, Rah. *la.pʰuː*, Tib. *brla* (§16)

Duh. *nam.tsʰa* 'sweat' < *nam.tsʰa 'rain', Kht. *nə.tɕʰuː* (§46)

Duh. *dʑa* < *gʲa 'tuber', Kht. *dʑuː*, Rup. *ɟuː* ~ *dʑuː*, Tib. *gro.ma* < *gʷra.ma '*Potentilla anserina*', Bur. *wa*, Chi. 芋 *hjuH* < *ɢʷ(r)as 'taro' (§51)

Duh. *u.da* < *a.da 'son', Kht. *a.duː* (§2)

Duh. *pʰa* < *pʰra 'axe', Kht. *pʰluː*, Rah. *pʰruː*, Chi. 鈇 *pjuX* < *p(r)aʔ (§15)

§25. *Duh. -aʔ, Kht. -uʔ.* The Duhumbi glottal constricted rhyme *-aʔ* regularly corresponds to Khoitam short open vowel *-uʔ*. 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. *ɲiŋ.kʰaʔ* < *nam.kʰaʔ 'foxtail millet', Kht. *nə.kʰuʔ*, Chi. 秆 *kanX* < *kˤa[r]ʔ 'straw of grain' (§4)

Duh. *w̥aʔ* < *w̥aʔ 'bird', Kht. *huʔ*, Khn. *fuʔ*, She. *huʔ*, Tib. *khwa* 'crow, raven', Tsh. *kʰa* 'bird', Chi. 烏 *ʼu* < *qˤa 'crow, raven; black' (§63)

Duh. *tɕʰu.pʰaʔ* < *tɕʰa.pʰraʔ 'ash', Kht. *tɕʰa.pʰluʔ*, Rah. *tɕʰa.pʰruʔ* (§15)

Duh. *kaʔ* < *kaʔ 'bite', Kht. *kuʔ*, Tsh. *ŋam*, Chi. 牙 *ngae* < *m-ɢˤ<r>a 'tooth' (§7)

Duh. *ɕip.ta*[18] < *sʲa.taʔ 'horse', Kht. *s.tuʔ*, Tib. *rta*, Tsh. *kur.ta*, Chi. 牵 *that* < *l̥ˤat 'lamb' (§8)

Duh. *ɕa.zɛt*[19] < *sʲa.zaʔ 'langur', Kht. *sə.zuʔ*, Khn. *zə.zuʔ*, Khs. *ɕa.dʑat* (§35)

Duh. *sin.taʔ* < *sin.tʰaʔ 'inedible fern', Kht. *san.tʰuʔ*, Khs. *sin.tʰa*, Rup. *san.tuʔ*[20] (§5)

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 *-uʔ*.

Duh. *na* < *naʔ 'be sick', Kht. *nuŋ*, Rah. *nuŋ*, Rup. *nuʔ*[21], Khn. *ku-nuʔ*[22], Tsh. *nan*, Tib. *na* or *sku sñuṅ.ba* 'be sick (Hon.)', Bur. *nā* 'hurt' (§29)

Duh. *ŋa* < *ŋaʔ 'fish', Kht. *nuŋ*, Rah. *nuŋ*, Rup. *ɲuʔ*[23], Khn. *nuʔ*, Tsh. *ŋa*, Tib. *ña* < *ṅʸa, Bur. *ṅāḥ*, Chi.魚 *ngjo* < *ŋa, PBG *naʔ (§30)

Duh. *ha* 'listen'[24] < *ŋaʔ 'listen, heed', Kht. *nuŋ* 'listen', Rah. *nuŋ*, Rup. *nuʔ*[25], Khn. *nuʔ*, Tsh. *na* 'heed' (§40)

§26. *Duh. -i, Kht. -iː.* The Duhumbi rhyme *-i* regularly corresponds to Khoitam long open vowel rhyme *-iː*.

Duh. *di* < *zri 'roast', Kht. *riː*, Chi. 焦 *tsjew* < *S.tew 'burn, scorch' (§13)

Duh. *bi* < *bʲi 'other (person)', Kht. *dʑiː*, Rup. *dʑiː ~ dʑiː*, Tib. *mi* 'person' Tib. *mi* < OTib. *myi (Zhang 1992: 2128) 'person', Tsh. *mi* 'person', Tsh. *i-bi* 'who', Chi. 人 *nyin* < *ni[ŋ] '(other) person' (§17a)

Duh. *kʰi* < *kʰʲi 'borrow', Kht. *tɕʰiː*, Khn. *tɕʰiː*, Rup. *cʰiː ~ tɕʰiː*, Tib. *skyi.ba*, Tsh. *tɕʰi*, OBur. *khiyḥ* (§18)

Duh. *(dʑaŋ) ɕi.ki* < *sʲa.kri 'barking deer', Kht. *s.kiː*, Khn. *ʂ.tʂʰiː*, Jer. *s.iː* (§11a)

Duh. *pɕi* < *pʰri 'needle', Kht. *pʰliː*, Rah. *pʰliː* (§19)

Duh. *i* < *ʔi 'die', Kht. *iː*, Tib. √*śi* (pres. *ḥčhi*), Tsh. *ɕi*, OBur. *siy* (§25)

Duh. *pɕi* < *prʲi 'four', Kht. *psiː*, Khn. *pʂiː*, Tib. *bźi* < *blʸi, OBur. *liy*, Chi. 四 *sijH* < *s.li[j]-s (§19b)

Khs. *ɕa.ɕi*[26] < *(sʲa./a.) bʲi 'gall, bile', Kht. *a.tɕʰiː*, Khn. *a.tʂʰiː* (§38a)

Duh. *zi* < *dʑʲi 'urine', Kht. *ziː*, Khn. *ziː*, Tib. *zil* < *dzil 'dew', Bur. *chīḥ* or Tib. *gci.ba* 'urinate' (§39a)

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[18] The unexpected prefix is under influence of the honorific Tib. term *chibs.rta* 'riding horse', i.e. *sja.taq > *ɕa.taʔ > ɕip.taʔ.

[19] The stop coda in Duhumbi (†*ɕa.zaʔ*) and Khispi (†*ɕa.za*) 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*.

[22] But cf. Khn. *ku-ruŋ* 'disease', Jer. and Kht. *ku-nuŋ*.

[23] This is the Rupa Chaw (lower class) and Shergaon reflex, the Rupa Thong (upper class) reflex is *ɲuŋ*.

[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. -yː.* Duhumbi rhyme *-u* regularly corresponds to Khoitam and other Sartang and Sherdukpen rhyme *-yː*, with an epenthetic off-glide to vowel /y/ in Khoina when the onset is palatalised.

Duh. *du* < *zru 'push', Kht. *ryː*, Chi. 推 *thwoj* < *tʰˤuj 'push away' (§13)

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

Duh. *ʐu* < *zʲu 'melt', Kht. *ʐyː*, Khn. *ʐyj*, Tib. *źu*, Tsh. *ju ~ zu* (§39)

Duh. *mu* < *mu 'mushroom', Kht. *myː*, Tib. *śa.mo* Tib. *śa.mo ~ śa.moṅ*, Tsh. *ba.muŋ* (§28)

Duh. *ɕa.ɲu* 'paneer' < *sʲa.nʲu 'brain', Khs. *ɕa.ɲu*, Kht. *a.ɲyː*, Rup. *a.ɲyː*, Tsh. *ɲɔk.taŋ*[27], WBur. *nhok*, Chi. 腦 *nawX* < *nˤuʔ (§31)

Duh. *hu* < *l̥u 'naga', Kht. *l̥yː*, Tib. *klu*, Tsh. *lu* (§42)

Duh. *ɕu* < *sʲu 'meet', Kht. *syː*, Khn. *ʂyj* (§38)

Duh. *tsʰu* < *tsʰu 'cough', Kht. *tɕʰyː* (§46)

Duh. *ʣu* < *grʲu 'swallow', Kht. *gyː*, Khn. *dʐyː*, Rup. *gyː* (§51a)

Duh. †*ʣu*[28] < *dzru 'grind', Kht. *zyː*, Jer. *ʣyː ~ zyː*, Khn. *ʐyː* (§57)

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. -ɔʔ.* In a single cognate set, Duhumbi open vowel *-a* corresponds with Khoitam rhyme *-ɔʔ*. 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. *rɔʔ*, Tib. *ḥgro* 'go', Chi. 于 *hju* < *ɢʷ(r)a 'go; at' (§65a)

§29. *Duh. -eʔ, Kht. -iː.* The Duhumbi rhyme *-eʔ* is attested in only a few lexemes and corresponds to Sartang rhyme *-ɛʔ* and Sherdukpen rhyme *-aʔ*. 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. *beʔ* < *bʷej 'copula', Kht. *bɛʔ*, Shd. *baʔ* (§3)

§30. *Duh. -u, Kht. -ɔː.* 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-

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[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 *kʰʲɛŋ* 'to grind'.

wa- > Old Tibetan *do, so* (Jacques 2013)), even though the comparative evidence from Chinese points towards a rhotic onset.

> Duh. *ʥu* < *ʥʷa 'stay, reside, live', Kht. *ʥɔː*, Rup. *ʥaw ~ ʥaw*, Khn. *ʥɔː*, Chi. 居 *kjo* < *k(r)a 'squat; stay, dwell' (§53)

> Duh. *su* < *sʷa 'search', Kht. *sɔː*, Rup. *saw*, Lashi *ʔsɔː*, Chi. 搜 *srjuw* < *sru 'search' (§34)

> Duh. *wu* < *ɢʷa 'steal', Kht. *jɔː*, Rup *jaw* (§65)

> Duh. *dɛj.ju* < *daj.ɢʷa 'yesterday', Jer. *ʥy.jɔː* (§60)

> Duh. *bi.ju* < *bʲi.ɢʷa 'thief', Kht. *ʥyː.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 *mju* < *ma 'not have' (§3)

> Duh. *tʰa-* < *tʰa- 'prohibitive prefix', Kht. *tʰə-* (§5)

> Duh. *ɕa-* < *sʲa- 'animal prefix', Kht. *sə- ~ s-* (§38)

> Duh. *wa- ~ hɔ-* < *pʰʷa- '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 -*tɔʔ*, 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.

> Duh. -*ta* < *tat 'allative', Kht. -*tan*, Tib. *gtad* 'direct towards', Tsh. -*tat ~ -tan*, Chi. 達 *dat* < *[l]ˤat 'arrive at' (§8)

§32. *Duh. -e, Kht. -uː.* Rhyme -*e* is rare in Duhumbi and Khispi and corresponds to Sartang and Sherdukpen rhyme -*uː*. The Sartang and Sherdukpen rhyme reflexes indicate this must derive from an open rhyme *-a. The Khispi evidence indictes 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 *bʲ-) and §50 (affrication of onset *kʰʲ-).

> Duh. *be* < *bʲa 'down'[30], Kht. *buː*, Khs. *bʲa*, Tib. *smad*, Bro. [meː] (§3)

> Duh. *kʰe* < *kʰʲa 'ground level'[31], Kht. *kʰuː*, Khs. *kʰʲa* (§4)

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

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[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.

derives from a rhyme *-ij. Another source of short Khoitam vowel rhyme -*iʔ* is rhyme *-it (§12) when preceded by a palatalised onset.

Duh. *kʰi* < *kʰrij 'cane', Kht. *tɕʰiʔ*, Khn. *tʂʰiʔ*, Rup. *kʰiʔ*, Chi. 維 *ywij* < *ɢʷij 'rope for tying' (§11)

Duh. *ɕi* < *bʲij 'give', Kht. *tɕʰiʔ*, Khn. *tsʰiʔ*, Rup. *tɕʰiʔ ~ tsʰiʔ*, Tsh. *bi*, Tib. *sbyin.pa* 'give', Chi. 畀 *pjijH* < *pi[t]-s (§38a)

Duh. *li* < *r̥ij 'bow', Kht. *riʔ*, Rup. *liʔ*, OTib. *gźi* < *glʲi (Hill 2019: 6), OBur. *liy*, Chi. 矢 *syijX* < *l̥ijʔ 'arrow' (§61)

§33a. *Duh. -i, Kht. -ɛː.* There is a regular correspondence between the Duhumbi rhyme -*i* and Khoitam long open vowel rhyme -*ɛː*, with Khoina and Sherdukpen having long open vowel rhyme -*aː*. There are no satisfactory explanations for this correspondence, and hence I propose this derives from rhyme *-əj, even though this requires introducing the vowel /ə/ only in this rhyme.

Duh. *bɔ.di* < *ba.zrəj 'navel', Kht. *b.rɛː*, Khn. *b.raː* (§13)

Duh. *hɔ.ki³²* < *pʰʷa.kʰʲəj³³ 'chicken', Kht. *pʰ.tɕʰɛː*, Khn. *bə.tɕʰaː*, Bur. *krak*, Chi. 雞 *kej* < *kˤe 'fowl, chicken' (§18)

Duh. *si* < *səj 'aconite', Kht. *sɛː*, Khn. *saː* (§34)

§34. *Duh. -iʔ, Kht. -ik, Rup. -it.* In a single corrspondence set, Duhumbi glottal constricted rhyme -*iʔ* corresponds to rhyme -*ik* in Khoitam and -*it* in Sherdukpen.

Duh. *lɔw.kiʔ* < *lʷaŋ.krʲit 'day before yesterday', Kht. *liŋ.tɕik*, Khn. *lə.tʂik*, Rup. *lin.kit* (§12)

§35. *Duh. -ɔʔ, Kht. -ɔʔ.* In suffixes, Duhumbi glottal constricted rhyme -*ɔʔ* regularly corresponds to Khoitam short rhyme -*ɔʔ*, with as only exception the locative suffix where Khoitam has unexpected rhyme -*yʔ*, but the other varieties have the expected rhyme -*ɔʔ*. The short vowel rhymes may either be conditioned because these are unstressed suffixes, or because of an underlying coda glottal stop.

Duh. -*lɔʔ* < *-laʔ 'ablative suffix', Kht. -*lɔʔ*, Tib. -*la* 'locative suffix' (§58)

Duh. -*ɔʔ* < *-ʔaʔ 'agentive / ergative suffix', Kht. -*ɔʔ* (§25)

Duh. -*kʰɔʔ* < *kʰaʔ 'locative suffix', Kht. -*gyʔ*, Rah. -*kʰɔʔ*, Tsh. -*ka*, Chi. 乎 *hu* < *ɢˤa 'in, at' (§4)

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. *wa.kʰi*.
[33] Note how *pʰʷa-, the 'bird-prefix', bears similarity to Tibetan *bya* 'bird' and Burmese *pyāḥ* < *byāḥ 'bee' (Hill 2019: 220).

4.1. TRIVIAL CORRESPONDENCES

§36. *Duh. -aŋ, Kht. -aŋ.* The Duhumbi rhyme *-aŋ* regularly corresponds with Khoitam rhyme *-aŋ*. Khoina and Jerigaon have allophone [ɑ] in this rhyme, just like in the reflexes of rhyme *-ak (§1) and *-an (§26).

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

Duh. *u.kʰaŋ*[34] < *a.qraŋ 'healthy, strong', Kht. *a.haŋ*, Khn. *a.xaŋ*, Chi. 剛 *kang* < *kˤaŋ 'strong; hard' (§22a)

Duh. *ʥam*[35] < *gʲaŋ 'weed', Kht. *ʥaŋ*, Rup. *ɟaŋ ~ ʥaŋ* (§51)

Duh. *ẘaŋ* < *ẘaŋ 'thread', Kht. *haŋ*, Khn. *xaŋ*, She. *haŋ*, Chi. 丸 *hwan* < *[ɢ]ʷˤar 'pellet; ball' (§63)

Duh. *bi.s.taŋ*[36] 'tribal' < *sʲa.taŋ 'Puroik', Kht. *s.taŋ*, Khn. *ɕ.taŋ* (§8)

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

Duh. *kʰʲɛŋ* < *kʰreŋ 'horn', Kht. *tɕʰɛŋ*, Khn. *tʂʰajŋ*, Chi. 觥 *kwaeng* < *[k]ʷˤraŋ 'drinking horn' (§11)

Duh. *tʰʲɛŋ* < *tʰeŋ 'cover (v)', Rah. *kʰan.tʰɛŋ* 'cover (n)', Rup. *tʰɛŋ* '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)

Duh. *pɕiŋ* < *priŋ 'swell', Kht. *pʰiŋ*, Khn. *pʰiŋ*, OBur. *phlaññ?* < *ˀpliŋʔ 'fill up', Chi. 不盈 *pjuw-yeng* < *pə-leŋ 'fill' (Hill 2019: 124), 盈 *yeng* < *leŋ (< *liŋ?) 'fill' (Baxter / Sagart 2014) (§19a)

Khs. *hiŋ*[37] < *hiŋ 'wood', Kht. *hiŋ*, Bur. *sac* < *sik, Chi. 薪 *sin* < *si[ŋ] 'firewood' (§36)

Duh. *ɕa.ɲi.lum*[38] < *sja.nʲiŋ 'gums', Rah. *sə.ɲiŋ*, Rup. *sə.ɲiŋ*, Khn. *mə.ʂə.rĩ:*[39], Tib. *rñil* < *rñʸil, Chi. 齦 *ngjin* < *ŋə[n] (§33)

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

Duh. *gɔŋ* < *goŋ 'fence', Kht. *guŋ* (§1)

Duh. *dɔŋ* < *zroŋ 'bind together', Kht. *ruŋ* 'assemble (people); pile up (things)' (§13)

Duh. *nam.pʰɔŋ* < *nam.pʰoŋ 'night', Kht. *nə.pʰuŋ* (§6)

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[34] Also: *u.qʰaŋ*.
[35] A contraction of *gʲaŋ a.mu > *gʲamu > *ʥamu > *ʥam*, see also fn. 41.
[36] The Duhumbi reflex includes the 'human being prefix' (§17a).
[37] Duhumbi has *ɕiŋ*, in analogy with Bod. cf. Tib. *śiṅ* 'tree', Tsh. *ɕiŋ* 'tree, wood', Brok. *ɕiŋ* '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. *hɔj.ʣɔŋ* < *a.qoŋ 'egg', Kht. *a.juŋ*, Khs. *ɔ.gɔŋ*, Chi. 卵 *lwanX* < *k.rˤorʔ (§57a)

Duh. *jɔŋ* < *joŋ 'load', Kht. *juŋ* (§60)

Duh. *ɕa.dɔŋ* < *sʲa.doŋ 'macaque', Kht. *z.duŋ* (§2)

Duh. *taŋ.kɔŋ* < *taŋ.koŋ 'marten', Kht. *taŋ.kuŋ* (§8)

Duh. *ɔ.ʦɔŋ* < *a.ʦoŋ, Kht. *a.ʨuŋ*, Rup. *a.ʦuŋ*, Khn. *a.ʦuŋ* (§45)

§40. *Duh. -uŋ, Kht. -yŋ.* Duhumbi rhyme *-uŋ* regularly corresponds to Khoitam rhyme *-yŋ* in a correspondence resembling Duhumbi *-u*, Khoitam *-yː* (§27) and §5 (Duh. *-uk*, Kht. *-yk*).

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 *loŋ², Chi. 瑘 *luwk* < *[r]ˤok 'precious stone' (§61)

§41. *Duh. -ɛn, Kht. -an.* Duhumbi rhyme *-ɛn* regularly corresponds to Khoitam rhyme *-an*.

Duh. *dɛn* < *dan 'know', Kht. *dan*, Tib. *dran* 'remember' (§2)

Duh. *ɔ.mɛn* < *a.man 'old', Kht. *a.man*, Khs. *ɔ.mɛn*, Tsh. *man.ma* (§28)

Duh. *mɛn* < *man 'medicine', Khs. *pɛn*, Kht. *mɛn*, Rup. *man*, Tib. *sman*, Tsh. *man* (§32)

Duh. *bʲɛŋ.kʰan*[40] < *ban 'dream', Kht. *ban*, Tib. *rmaṅ.lam*, Tsh. *mɔŋ.ɕi*, Bur. *mak*, Chi. 夢 *mjuwngH* < *C.məŋ-s (§3)

Duh. *ɔ.ʦʰɛn* < *a.ʦʰan 'cold', Kht. *a.ʨan*, Rup. *a.ʨʰan*, Chi. 清 *tshjengH* < *[tsʰ]eŋ-s (§55)

Duh. *ɕa.kʰɛn* < *sʲa.kran 'wild boar', Kht. *s.kan*, Chi. 豜 *ken* < *[k]ˤe[n] 'pig or boar 3 years old' (§11a)

Duh. *jɛn* < *wʲan '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. *bin* < *bin 'ripen; ferment', Kht. *ziŋ* 'ferment', Tib. *smin*, Bur. *mhaññʔ* < *ʔmiŋʔ (Hill 2019: 70) (§17)

Duh. *min* < *mʲin 'sleep', Kht. *ʣiŋ*, Rup. *ʣiŋ*, Tib. *rmi.lam* 'dream', Chi. 眠 *men* < *mˤi[n] 'shut the eyes; sleep' (§32c)

Duh. †*ŋin*[41] < *ŋin 'silver', Kht. *niŋ*, Rup. *ɲiŋ*, OBur. *ñuy*, Chi. 銀 *ngin* < *ŋrə[n] (§30)

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

[41] The attested Duhumbi form *ŋɔj* is a loan from Tsh.D. *ŋɔj*, in turn from Tib. *dṅul*.

§43. *Duh. -ɔn, Kht. -ĩ:*. Duhumbi rhyme *-ɔn* regularly corresponds to Khoitam rhyme *-ĩ:*, with mixed, but regular reflexes for the other Sartang and Sherdukpen varieties.

Duh. *tʰɔn* < *tʰon 'take', Kht. *tʰĩ:*, Rup. *tʰø:*, She. *tʰɛ̃:* (§5)

Duh. *hɔn* 'pity'< *hron 'like', Kht. *hĩ:*, Khn. *xø:*, She. *hɛ̃:*, Chi. 恨 *honH* < *[m-q]ˤə[n]-s 'regret' (§43)

Duh. *wɔn* 'fence (v)', *rɔn* 'wind, warp' < *w̥ron 'fence (v)', Kht. *hĩ:*, She. *ɛ̃:*, Tsh. *rɛn* 'wind, warp' (§65b)

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

Duh. *bu.dun* < *bʲi.zrun 'human', Kht. *dʑi.riŋ*, Rup. *dʑə.rin* (§13)

Duh. *gun.tsun* < *gun.tsun 'sweet buckwheat', Kht. *kʰiŋ.tɕiŋ*, Rup. *gə.tsin*, Khn. *gə.tsiŋ*, Tsh. *gun.tsun* (§45)

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

Duh. *u.tɕʰam* < *a.čʰam 'daughter-in-law', Kht. *a.tɕʰam*, Tib. *chang.sa rgyag* 'marry' (§48)

Duh. *lam* < *ram 'be cold', Kht. *ram*, Khs. *lam*, Chi. 凜 *limX* < *[r][ə]mʔ 'cold' (§58a)

Duh. *wam* < *ɢam 'house', Kht. *jam*, Chi. 閻 *yem* < *[ɢ][a]m 'gate over street or lane' (§65)

§46. *Duh. -um, Kht. -ɔm.* Duhumbi rhyme *-um* regularly corresponds to Khoitam rhyme *-ɔm*.

Duh. *nam.sum* < *nam.som 'wind', Kht. *nə.sɔm*, Tsh. *ŋam.su* (§34)

Duh. *zum* < *zom 'hold', Kht. *zɔm*, Tib. *ḫdzoms.pa* 'come together, gather' (§35)

§47. *Duh. -ɔm, Kht. -uŋ.* Duhumbi rhyme *-ɔm* regularly corresponds to Khoitam rhyme *-uŋ*.

Duh. *tɔm* < *tum 'year', Kht. *tuŋ*, Mon. *tɔm.rit* (§8)

Duh. *jɔm* < *jum 'ripen', Kht. *juŋ* (§60)

Duh. *ɔm* < *ʔum 'three', Kht. *uŋ*, Tib. *gsum*, Tsh. *sam*, Bur. *suṃḥ*, Chi. 三 *sam* < *sr[u]m (§25)

Duh. *ha* (†*hɔm*)[42] < *hum 'salt', Kht. *huŋ*, Chi. 鹽 *yem* < *[ɢr][o]m 'salt (n.)' or 鹹 *heam* < *Cə.[g]ˤr[o]m 'salty' (§36)

4.2. PALATALISED ONSETS

§48. *Duh. -iŋ, Kht. -ɛŋ.* The correspondence between Duhumbi rhyme *-iŋ* and Khoitam rhyme *-ɛŋ* not *-iŋ* (§38 Duh. *-iŋ*, Kht. *-iŋ*), with characteristic Khoina reflex *-ajŋ*, derives from rhyme *-eŋ preceded by a palatalised onset.

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[42] Either the Duhumbi and Khs. forms are not cognate, or the unexpected reflexes may be due to a uvular onset.

Duh. *biŋ* < *a.bʲeŋ 'name', Kht. *a.ʥɛŋ*, Rup. *a.zɛŋ*, Khn. *a.ʥajŋ*, OTib. *myiṅ*, Tsh. *miŋ*, Mon. *mʲɛŋ*, Bur. *maññ* < *meṅ, Chi. 名 *mjieng* < *C.meŋ[43] (§21)

Duh. *u.riŋ* < *a.rʲeŋ 'long', Kht. *a.rɛŋ*, Khn. *a.rajŋ*, Tib. *riṅ.po*, Tsh. *riŋ.bu*, Chi. 嶸 *hjwaeng* < *[ɢ]ʷreŋ 'high, distant' (§64)

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

Duh. *ɕɔŋ* < *bʲoŋ 'release', Kht. *ʨʰɔŋ* (§38a)

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

Duh. *u.guŋ* < *a.qʲuŋ 'spirit; shadow', Kht. *a.wuŋ*, Chi. 魂 *hwon* < *[m.]qʷˤə[n] 'spiritual soul' (§20)

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

Khs. *ɕa.pɕin* < *sʲa.psin 'liver'[44], Kht. *sə.sĩ: ~ ʦʰə.sĩ:*[45], Rup. *a.ʦʰĩ: ~ a.ʦʰɛ̃:*, Tib. *mčhin* < *m-śin (Hill 2019: 234), Bur. *asaññḫ* < *siŋḫ, Chi. 辛 *sin* < *sin 'pungent, painful' (§19c)

Duh. *ɕin* < *pʲin 'suffice[46]', Kht. *ʨĩ:*, Rup. *ʦɛ̃: ~ ʨɛ̃:* (§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. -ũŋ, She. -ɔ̃:.* There is a small set of cognates where Duhumbi rhyme *-aŋ* corresponds to Khoitam rhyme *-ũŋ* and Khoina rhyme *-ɔ̃ŋ*. 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 *-ɔ̃:*.

Duh. *raŋ.bu* < *a.rʷaŋ 'straight', Kht. *a.rũŋ*, Khn. *a.rɔ̃ŋ*, She. *a.rɔ̃:* (§64)

Duh. *a.daŋ* < *a.dʷaŋ 'when', Kht. *a.dũŋ*, Khn. *a.dɔ̃ŋ*, She. *a.dɔ̃:* (§2)

Duh. *jaŋ* < *jʷaŋ 'want', Kht. *jũŋ*, Khn. *jɔ̃:* (§60)

§53. *Duh. -an, Kht. -ɔ̃:.* Duhumbi rhyme *-an* corresponds to Khoitam rhyme *-ɔ̃:* when preceded by a labialised onset, similar to correspondence §52. Jerigaon and Khoina have allophone [ɑ̃:]

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[43] Cf. also Lepcha *ʔá.bryáng* (Plaisier 2007) and Nungic Trung *aŋ³¹bɹuŋ* ⁵³ (Sūn et al. 1991).

[44] Duhumbi has lexical innovation *ɕa taŋku* 'meat dough'.

[45] Via *sʲa.psin > *sa.ʨʰin > *sə.ʨʰĩ: > contraction to either *sə.sĩ:* or re-analysis of onset of the prefix and the root to *ʦʰə.sĩ:*.

[46] E.g. of salt or spices in food.

in this correspondence, with allophone [ɑ] also occurring in the reflexes of rhymes *-ak (§1), *-aŋ (§36) and *-an (§41).

> Duh. *an* < *ʔʷan 'select', Kht. *ɔ̃ˑ*, Khn. *ã̃ˑ*, Chi. 揀 *keanX* < *kˤr[a]nʔ (§25)

> Duh. *man* < *mʷan 'achieve', Kht. *mɔ̃ˑ*, Khn. *mã̃ˑ* (§28)

> Duh. *san* < *sʷan 'ten', Kht. *sɔ̃ˑ*, Khn. *sã̃ˑ,* Tsh. *se* (§34)

> Duh. †*ɔ.zan*[47] < *a.zʷan 'white', Kht. *a.zɔ̃ˑ* (§35)

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

> Duh. *kʰam* < *kʰʷam 'be hungry', Kht. *kʰũŋ*, Tib. *skom.pa* 'be thirsty' < *skam.pa* 'be dry' (§4)

> Duh. *le.ham* < *laj.l̥ʷam 'footwear'[48], Kht. *ly.lũŋ*, Tib. *lham* (§42)

> Duh. *u.tɕʰam* < *a.čʰʷam 'black', Kht. *a.tɕʰũˑ* (§52a)

> Duh. *kʰa.tɕʰam* < *kʰa.tsʰʷam 'mud', Kht. *kʰ.tɕʰũŋ* (§52)

> Duh. *ram* < *rʷam 'reap', Kht. *rũŋ* (§64)

> Duh. *ham* < *hʷam 'rot; drench', Kht. *hũˑ*, Khn. *xɔ̃ˑ*, Rup. *hũˑ* (§43)

> Duh. *pʰam* < *pʰʷam 'lose, be defeated', Kht. *pʰũŋ*, Tib. *ḫpham.pa* '(be) defeat(ed), lose, fail', Chi. 喪 *sangH* < *s-mˤaŋ-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.

§55. *Duh. -iŋ, Kht. -ĩˑ.* I propose the correspondence between Duhumbi rhyme *-iŋ* and Khoitam nasalised rhyme *-ĩˑ*, not *-iŋ* (§38 Duh. *-iŋ*, Kht. *-iŋ*), derives from a rhyme *-im[49].

> Duh. *kʰiŋ* < *kʰrim 'stand up', Kht. *tɕʰĩˑ*, Khn. *tʂʰĩˑ*, Rup. *kʰĩˑ*, Tib. *ḫgrim.pa* 'wander, stroll' (§11)

> Duh. *mɛj.ɕiŋ* < *maj.pʲim 'maize ('sweet bamboo')', Kht. *mə.tɕĩˑ* (§38b)

§56. *Duh. -ɔŋ, Kht. -aŋ.* In a single cognate set, Duh, rhyme *-ɔŋ* corresponds to Khoitam rhyme *-aŋ*, not *-uŋ* (§39 Duh. *-ɔŋ*, Kht. *-uŋ*) when preceded by a glottal onset.

> Duh. *ɔŋ* < *ʔaŋ 'go', Kht. *aŋ*, cf. Tib. *ḫoṅ / yoṅ* < *ḫʷaŋ, Bur. *waṅ* 'enter', Chi. 往 *hjwangX* < *ɢʷaŋʔ (§25)

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[47] Duhumbi has loan *jaŋ.kar* cf. Tibetan *yaṅ.dkar* 'white wash, lime'.

[48] A compound of roots *lej 'leg, foot' and *l̥am 'shoe'.

[49] An incomplete cognate set that can be added to this correspondence is
> Kht. *tɕĩˑ* < *a.pʲim 'sweet', Khn. *a.tsĩˑ*, Rup. *a.tsĩˑ ~ a.tɕĩˑ* (Duh. *jɔŋ.jɔŋ* < Tsh. *jɔŋ.jɔŋ*)

§57. *Duh. -ɛn, Khn. -ɛː.* In a single cognate set, where the Khoitam evidence is missing, Duhumbi rhyme *-ɛn* corresponds to Khispi rhyme *-in* and Khoina rhyme *-ɛː*, not Khispi rhyme *-ɛn* and Khoina rhyme *-ɛn* (§41 Duh. *-ɛn*, Kht. *-an*). This may be conditioned by the unvoiced onset *w̥-.

> Duh. *ɛn* 'spill' < *w̥en 'spill', Khs. *in*, Khn. *xɛː*, Chi. 衍 *yenX* < *N-q(r)anʔ 'overflow',
> 演 < *yenX* < *N-q(r)anʔ 'flow out, extend' (§26)

§58. *Duh. -in, Kht. -an.* When preceded by a glottal onset, the Duhumbi rhyme *-in* corresponds to Khoitam rhyme *-an*, not Khoitam rhyme *-iŋ* (§42 Duh. *-in*, Kht. *-iŋ*).

> Duh. *in* < *ʔin 'speak', Kht. *an*, Chi. 詽 *hen* < *[ɢ]ˤi[n] 'speak quickly' (§25)

> Duh. *hin* < *hin 'one', Kht. *han*, Chi. 壹; 一 *ʼjit* < *ʔi[t] (§36)

§59. *Duh. -ɔn, Kht. -an.* In a single cognate set, Duhumbi rhyme *-ɔn* 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. *ɔ.kʰɔn* < *a.qʰan 'new', Kht. *a.fan*, Jer. *ə.hɛn*, Khs. *ɔ.han*, Khn. *a.fɛn* (§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. *un*[50] < *ʔun 'come', Kht. *un*, Chi. 羨 *yen* < *[ɢ]a[n] 'extend; go forward' (§25)

§61. *Duh. -ɛm, Kht. -ĩː.* In a single cognate set, Duhumbi rhyme *-ɛm* corresponds to Khoitam rhyme *-ĩː* and Rupa rhyme *-ɛ̃ː*.

> Duh. *dɛm* < *dem 'lap', Kht. *dĩː*, Rup. *dɛ̃ː* (§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. -ɔʔ.* Duhumbi rhyme *-as* regularly corresponds to Khoitam rhyme *-ɔʔ*. Jerigaon and Khoina have allophone [ɑ] like in reflexes of rhyme *-ak (§1), *-aŋ (§36) and *an (§41 and §53).

> Duh. *pʰas* < *pʰlas 'gift', Kht. *pʰlɔʔ* (§15)

> Duh. *las* < *las 'soak in water', Kht. *lɔʔ* (§58)

> Duh. *tas* < *n̥ras 'comb', Kht. *nɔʔ*, Tsh. *nas* (§24)

Duh. *has.ta* < *a.ŋas.da 'slow', Kht. *a.nɔʔ.duː* (§40)

Duh. *was* < *ɢas 'wear', Kht. *jɔʔ*, Rup. *jɔʔ*, Tib. *gos* < *gʷas 'clothing', Chi. 袁 *hjwon* < *[ɢ]ʷa[n] 'long robe' (§65)

Duh. *tɕʰɛt* [†*tɕʰas*][51] < *tɕʰʷas 'excrete (urine, stool)', Kht. *tɕʰɔʔ*, Khn. *ʈʂʰaʔ*, Rup. *a.cʰɔʔ* ~ *a.tɕʰɔʔ* (§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. *ɲis* < *nʲis 'two', Kht. *nik*, Rup. *ɲik*, Tib. *gñis* < *ʔnik, Tsh. *ɲik.tsiŋ*, Bur. *nhac*, Chi. 二 *nyijH* < *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. *ɕis* < *sʲit 'seven', Kht. *sik*, Rup. *sit*, Chi. 七 *tshit* < *[tsʰ]i[t] (§38)

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

Duh. *u.lis*[52] < *a.liw.da 'beautiful', Kht. *a.leː.du*, Chi. 修 *sjuw* < *s-liw 'adorn' (§58)

Duh. *ni.ɕi*[53] < *(nam. / a.) sʲiw 'paddy rice', Kht. *nə.seː*, Rah. *tɕʰu a.seː*, Khn. *ʈʂʰu.ʂeː*[54], 收 *syuw* < *s-kiw 'collect; harvest' (§38)

Khs. *kʰiɕ* 'to turn back, to return'[55] < *(la.) kʰiw 'backwards', Kht. *lə.kʰeː* (§4)

§63c. *Duh. -is, Kht. -ĩʔ.* Where Duhumbi rhyme -*is* corresponds to Khoitam rhyme -*ĩʔ*, 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. *ĩʔ*, Tib. *śes*, Tsh. *se*, Bur. *si* 'know' (§25)

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

Duh. *tɔs* [†*tʰɔs*] < *tʰos 'throw', Kht. *tʰeʔ*, Rup. *tʰø̃ʔ* (§5)

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[51] The unexpected Duhumbi reflex and Khs. reflex *tɕʰat*, may be under Tsh. influence, e.g. *gi tɕʰɛt* 'to have the urgency to pass stool'.

[52] Note how Duhumbi has lost the adjective suffix, cf. Khs. *u-liɕ-ta*.

[53] Loss of coda -*s* may be triggered by the palatal onset: *nam-sʲiw > *ni-sʲis > *ni-ɕi* [†ni-ɕis].

[54] The Rahung and Khoina reflexes include the root for 'rice', indicating that the adjective *a-sʲiw originally meant something like 'unhusked, raw'. Khoina has contracted the root for rice with the adjective: *ʈʂʰu a.sjiw > *ʈʂʰu a. ʂeː > *ʈʂʰu.ʂeː*.

[55] Duhumbi has loan *dap* 'return; repeat; turn back', cf. Mon. *dap* 'again; repeat'.

Duh. *bɔs* < *bos '*Curcuma sp.*', Kht. *beˀ*, Rup. *bøˀ* (§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[56]', Kht. *pʰik*, She. *pʰit* (§6)

   Duh. *ɕa.kʰus* < *(a ~ sʲa).krus 'bone', Kht. *s.kik,* She. *s.kit,* Chi. 骨 *kwot* < *kˤut 'bone'[57] (§11b)

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

   Duh. *tɔs* [†*tʰus*][58] < *tʰus 'wear (a bracelet)', Kht. *tʰik*, She. *tʰik*[59] (§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* < *(ṇa.) tajs 'spittle', Kht. *tɛː*, Chi. 洟 *thejH* < *[l̥]ˤ[ə]j-s 'mucus from the nose' (§8)

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

§66. *Duh. -ɛr, Kht. -an.* Duhumbi rhyme *-ɛr* regularly corresponds to Khoitam rhyme *-an* and Khoina rhyme *-ɛn.*

   Duh. *tʰɛr* < *tʰar 'cane carrying strap', Kht. *tʰan*, Khn. *tʰɛn* (§5)

   Duh. *ɕa.zɛr* < *sʲa.dʑar 'goral', Kht. *dʑə.zan*, Khn. *sə.dʑɛn* (§37)

   Duh. *ɕɛr* < *bʲar 'fly', Kht. *tɕʰan*, Khn. *tsʰɛn*, Chi. 飛 *pj+j* < *Cə.pə[r] (§38a)

   Duh. *kʰar*[60] < *kʰar 'call for', Kht. *kʰan*, Khn. *kʰɛn*, Chi. 叫; 誼; 喧; 讙 *xjwon* < *qʷʰar '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. *rus* 'bone', OBur. *ruiwḥ*, Chi. 律 *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 †*-ɛr* 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. *-ɔː*).

§67. *Duh. -ɛj, Kht. -ɛː.* The Duhumbi rhyme -ɛj regularly corresponds to a Khoitam long rhyme -ɛː when derived from reconstructed rhyme *-aj.

> Duh. *bɛj* < *baj 'fire', Kht. *bɛː*, OTib. *mye*, Tib. *me*, Tsh. *mi*, Bur. *mīḥ*, Chi. 燬 *xjweX* < *m̥ajʔ 'fire' (§3)

> Duh. *ɕɛj* < *bʲaj 'buy', Kht. *tɕʰɛː*, PBG *prai¹, Chi. 買 *meaX* < *mˤrajʔ (§38a)

> Duh. *ʐɛj* < *zʲaj 'laugh', Kht. *zɛː*, Khn. *ʑaː*, Tib. *bźad* 'laugh, smile (H)' (§39)

> Duh. *lɛj* < *laj 'leg, foot', Kht. *lɛː* (§58)

§67a. *Duh. -ɛj, Kht. -ɛ ˀ.* The Duhumbi rhyme -ɛj regularly corresponds to a Khoitam short rhyme -ɛ ˀ when derived from reconstructed rhyme *-ej.

> Duh. *a.lɛj* < *a.rej 'brother-in-law', Kht. *a.rɛ ˀ* (§58a)

> Duh. *tɛj* < *tej 'sing', Kht. *tɛ ˀ* (§8)

> Duh. *le*[61] < *rej 'do', Kht. *rɛ ˀ*, Khs. *li*, Rup. *ra ˀ*, Chi. 為 *hjwe* < *ɢʷ(r)aj 'make, do, act as' (§58a)

§67b. *Duh. -ɛj, Kht. -ɔ ˀ.* In another correspondence, Duhumbi rhyme -ɛj regularly corresponds to Khoitam short rhyme -ɔ ˀ when derived from reconstructed rhyme *-ɔj.

> Duh. *ɕa.bɛj* < *sʲa.boj 'porcupine', Kht. *zu.bɔ ˀ* (§3)

> Duh. *jɛj.ba* < *j̊oj.ba 'spicy, pungent', Kht. *hɔ ˀ.ba* (§62)

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

> Duh. *pʰɔj* < *nam.pʰʷuj 'flour', Kht. *nə.pʰɛː*, Khn. *nə.faː*, Khs. *pʰuj*, Tib. *phye.ma* 'powder, dust', WBur. *phwai* < *poi 'chaff, bran' (§23a)

> Duh. *hɔj* < *hruj 'blood', Kht. *hɛː*, Khn. *xaː*, Khs. *huj*, OBur. *suyḥ*, Chi. 髓 *sjweX* < *s-lojʔ 'marrow' (§43)

> Duh. *lɔj* < *luj 'borrow', Kht. *lɛː*, Khs. *luj*, Tib. *glud* 'ransom' (§58)

> Duh. *lɔj* < *luj 'tongue', Kht. *lɛː*, Khn. *laː*, Khs. *luj*, Tsh. *le*, Tib. *lče* < *l̥ʲe 'tongue', Bur. *lhyā*, Chi. 舐 *zyeX* < *Cə.leʔ 'lick' (Hill 2013) (§58)

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

> Duh. *kʰɔw* < *kʰo 'water', Kht. *kʰoː*, Rup. *kʰoː*, cf. Tib. *kha.ba* 'snow', *khu.ba* 'broth, soup; semen; liquid' (§4)

> Duh. *aw*[62] < *ʔo 'itch', Kht. *oː* (§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 †*lɛj*) may be attributed to the high usage frequency of this root.

[62] The unexpected Duhumbi reflex †-*aw* not -*ɔw* is conditioned by the glottal onset.

§69a. *Duh.* -ɔw, *Kht.* -ɔː, *Rup.* -aw. In the cognate set 'snatch away' that forms a minimal pair with 'water' in §69, Khoitam has rhyme -ɔː not -oː and Rupa and Shergaon have rhyme -aw, not -oː. Considering that rhyme *-aj results in long vowel rhymes in the Sartang and Sherdukpen varieties (cf. §67 *Duh.* -ɛj, *Kht.* -ɛː) whereas rhyme *-oj results in short vowel rhymes (§67a *Duh.* -ɛj, *Kht.* -ɔʔ), I propose that the long vowel rhymes in this correspondence derive from rhyme *-aw, whereas the short vowel rhymes in §69b (*Duh.* -ɔw, *Kht.* -ɔʔ) derive from rhyme *-ow.

Duh. *kʰɔw* < *kʰaw 'snatch away', Kht. *kʰɔː*, Rup. *kʰaw*, Tib. *rku* 'steal', OBur. *khuiw* 'steal', Chi. 寇 *khuwH* < *[k]ʰˤ(r)o-s 'rob; robber' (Hill 2013:) (§4)

Duh. *dʑɔw* < *ǰaw 'parch, fry'[63], Kht. *dʑɔː*, Rup. *dʑaw* (§49)

Duh. *kɔ*[64] < *kaw 'door', Kht. *kɔː*, Rup *kaw*, Tib. *sgo*, Chi. 戶 *huX* < *m-qˤaʔ (§7)

Duh. *ɕɔ* [†*ɕɔw*][65] < *bʲaw 'burst, explode', Kht. *tɕʰɔː* (§38a)

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

Duh. *tɕʰɔw* < *čʰow 'boil', Kht. *tɕʰɔʔ*, Rup. *tsʰaw* ~ *tɕʰaw*, Tib. √tso (pres. *htshod*) 'cook, boil, dye', Bur. *chuiḥ* < *tsuiwḥ 'dye', Lashi *tshaːuH* (Hill 2019: 57) and Bur. *chū* < *ʔtsū 'boil', Atsi *ʔtsu³¹* (Hill 2019: 64) (§48)

Duh. *jɔw* < *jow 'wake up', Kht. *jɔʔ*, Rup. *jaw* (§60)

Duh. *pʰɔw* < *pʰow 'spread out to dry', Kht. *pʰɔʔ*, Rup. *pʰaw* (§6)

6.2. MINOR CORRESPONDENCES

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

Duh. *wa.ar* < *a.ʔar 'dry (adj.)', Kht. *yk.ɔ̃ː*, Khs. *ɔ.wal*, Tib. *sro* 'dry by exposing to the sun', Chi. 暵 *xanH* < *[qʰ]ˤarʔ-s 'dry' (§25)

Duh. *har* < *ŋa.qar 'phlegm', Kht. *nə.hɔ̃ː*, Khn. *nə.xã̃ː*, Rup. *nə.kʰɔ̃ː*, Khs. *ha.hal*, Chi. 次 *zjen* < *s-N-qa[r] 'saliva; spittle'[66] (§43a)

§71. *Duh.* -ir, *Kht.* -ĩː. Duhumbi rhyme -ir corresponds to Khoitam rhyme -ĩː, in which there likely was an intermediate Khoitam form *-in.

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[63] Note how Duhumbi, Khs. and Shergaon make a semantic distinction between *jow 'parch', i.e. 'to toast or roast (e.g. grains) by using dry heat without any oil or grease' and *zʲow ~ *zʲaw 'fry' (undetermined because Khoitam 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. *zɔw* 'fry', *dʑɔw* 'parch', Shergaon *zaw* 'fry', *dʑaw* 'parch'.

[64] Unexpected Duhumbi reflex *kɔ* not †*kɔw* may be due to the unvoiced, unaspirated onset, or could be explained through contact language influence, cf. Dirang Tshangla *ko*.

[65] The Duhumbi rhyme us unexpected, and cognate Rupa and Shergaon evidence is missing: Rupa *prɔk* and Shergaon *pɔk*, cf. Tshangla *pʰɔk*.

[66] The Western Kho-Bwa reflexes may evidence the N-prefix reconstructed for Chinese here.

Duh. *ir* < *ʔir 'ride (a horse)', Kht. *ĩˑ*, Khn. *ɛ̃ˑ*, Rup. *ɛ̃ˑ*.[67] (§25)

§72. *Duh. -ɔr, Kht. -ɔk.* The rare Duhumbi rhyme *-ɔr* corresponds to Khoitam rhyme *-ɔʔ*.

Duh. *hɔr* < *l̥or 'perforate', Kht. *lɔʔ*, Khn. *hɔʔ*, Rup. *lɔk* (§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.miŋ* (§28)

§74. *Duh. -aj, Kht. -ɛˑ.* When deriving from a glottal onset, Khoitam rhyme *-ɛˑ* corresponds to a Duhumbi rhyme *-aj*, not *-ɛj* (§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. *hɛˑ*, PBG *sal 'sun; day', Miz. *hâl* 'burn' (§36)

Duh. *aj* < *ʔaj 'fight (n)', Kht. *jɛˑ*, Miz. *tâl* 'struggle (v)' (§27)

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

Duh. *aj* < *ʔoj 'see', Kht. *ɔˑ*, Rup. *oˑ*, Tib. *sad*[68] (§25)

Duh. *haj* < *l̥oj 'plant', Kht. *lɔˑ*, Rup. *loˑ*, Khn. *haˑ* (§42)

Duh. *aj* < *ʔoj 'ok', Kht. *ɔˑ*, Rup. *ɔ.oˑ* (§25)

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

Duh. *haj* < *ʔa.n̥ojs 'pus', Kht. *a.nɔ̃ʔ*, Tib. *snabs*, Bur. *nhap* 'mucus' (§40)

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

Duh. *ɔ.bɛj* 'sweet' < *a.broj.da[69] 'tasty', Kht. *a.blɔˑ.du*, Rah. *a.brɔˑ*, Tib. *bro.ba* 'taste' (§14)

§75a. *Duh. -ɔj, Kht. -ɔˑ.* Unlike correspondence §67b (Duh. *-ɛj*, Kht. *-ɔʔ*), when preceded by a labial onset, Duhumbi rhyme *-ɔj* regularly corresponds to Khoitam long rhyme *-ɔˑ* when derived from reconstructed rhyme *-oj.

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[67] The divergent Rupa, Khoina and Shergaon reflexes may be attributed to the glottal onset.
[68] Cf. Jäschke (1992: 572): *sad.pa* 'to examine, see, try, test' and Tshe-ring (1997: 569): *sad.pa* 'examine; slander'.
[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 *ɔ.bej.da* 'sweet'.

Duh. *wɔj*[70] 'plough' < *woj, Kht. *wɔꞏ* (§59)

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

Duh. *wɔj* 'he / she' < *wuj[71], Kht. *waꞏ*, Rah. *hɛꞏ ~ ɛꞏ* [†*wɛꞏ*], She. *jaꞏ* [†*waꞏ*], Khs. *wuj* (§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. -ɔp, Kht. -ɔp.* In the following cognate set, Duhumbi rhyme *-ɔp* corresponds to rhyme *-ɔp* in Khoitam and the other Sartang and Sherdukpen varieties, except Khoina which has characteristic reflex *-øˀ* and Rahung which has rhyme *-øp*. On basis of correspondence §22, we would expect Kht. reflex *-ɔk* and Khn. reflex *-ɔp* or *-ɔk*. Together with the unexpected onset reflexes, this is additional evidence that this lexeme is a loan.

Duh. *kʰrɔp* < *ʔkʰrop 'gather, collect (harvest, people, cattle)', Kht. *kʰrɔp*, Khn. *kʰrøˀ*, Rah. *kʰrøp*, Rup. *kʰrɔp*, Khs. *kʰɔp*, Tsh. *kʰrɔp* 'gather, collect', Tib. *sgrug* 'collect, gather, pluck, pick' (§69)

§78. *Duh. -ur, Kht. -ɔr.* 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. *tɕur* < *ʔčur 'surround, confine'[72], Kht. *tɕɔr*, Rah. *tɕyꞏ*, Rup. *tɕur*[73], Khs. *tɕul*, Tib. *gcur.ba* 'be pressed into' (§73)

§79. *Duh. -ar, Kht. -ar.* Unlike correspondence §66 (Duh. *-ɛr,* 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. *gar.po*, Tsh. *gar.bu* (§1)

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

Duh. *tɕir* < *ʔčir ~ ʔkʲir 'squeeze', Kht. *tɕĩꞏ*, Khn. *tɕĩꞏ* [†*tɕɛ̃ꞏ*], Rup. *cĩꞏ ~ tɕĩꞏ* [†*tɕɛ̃ꞏ*], Khs. *tɕil*, Tib. *gcir.ba* (§73)

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[70] The Duhumbi rhyme reflex, *wɔj* not †*waj ~ wɛj* is unexpected and may point to a complex onset, cf. also PBG *bwai1 'plough v.t.', Chi. 禾 *hwa* < *[ɢ]ˤoj (19–07a) 'growing grain', Tib. *gro* < *ɢro (Peiros and Starostin's law) < *ɢroy 'wheat'.

[71] Note how in many languages of the region, demonstratives are formed using a root derived from Old Tib. *ḥo ~ ḥu* 'this', e.g. Tsh. *u.tʰu* 'this here', *o.tʰa* 'that there', Bro. *ɔ.tʰi* 'this here', Mon. *u.ts* 'this here', *o.tʰ* 'that there'.

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

[73] Expected Sartang and Sherdukpen reflexes would be †*tɕiŋ*.

§82. *Duh. -a, Kht. -an.* The divergent rhyme reflexes in the following lexeme, not as could be expected on basis of correspondence §6 (Duh. *-ɛt*, Kht. *-ɛˀ*), combined with the clear Bodish cognates evidence that this suffix must be a loan.

> Duh. *-ta* < *tat 'allative', Kht. *-tan*, Tib. *gtad* 'direct towards', Tsh. *-tat ~ -tan*, Chi. 達 *dat* < *[l]ˤat 'arrive at'

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 aŋ, eŋ, iŋ, oŋ, uŋ; an, in, on, un; am, em, im, om, um; fricative rhymes as, es, is, os, us; approximant rhymes ar, ir, or, ur; aj, ej, əj, 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 /əj/, whereas there is no evidence for a distinct phoneme /ə/ 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, *-aŋ* in §36, *-eŋ* in §37, *-iŋ* in §38, *-oŋ* in §39 and *-uŋ* 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, *-aŋ* in §36 and *-am* in §45), whereas rhymes with the other vowels have been reasonably well preserved in Duhumbi and Khispi, but resulated 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. *-əj in §33a, *-aj in §67, *-uj in §68, *-iw 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 -*ɔw* 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.

9. ACKNOWLEDGEMENTS

10. REFERENCES

Binny Abraham et al., A sociolinguistic research among selected groups in Western Arunachal Pradesh highlighting Monpa (2019 [2005]). Online in internet: URL https://www.sil.org/resources/publications/entry/75982 (accessed 6.5.2019).

Baxter / Sagart 2014 = William H. Baxter / Laurent Sagart, Old Chinese: a new reconstruction (New York 2014).

Blench / Post 2014 = Roger Blench / Mark W. Post, Rethinking Sino-Tibetan phylogeny from the perspective of Northeast Indian languages. In: Owen-Smith / Hill, Trans-Himalayan-Linguistics (Berlin 2014), 71–104.

Bodt 2014a = Timotheus Adrianus Bodt, Ethnolinguistic Survey of Westernmost Arunachal Pradesh- a Fieldworker's Impressions. In: Linguistics of the Tibeto-Burman Area 37:2, 198–239 (2014). http://dx.doi.org/10.1075/ltba.37.2.03bod

Bodt 2014b = Timotheus Adrianus Bodt, Notes on the settlement of the Gongri river valley of western Arunachal Pradesh. In: Denjongpa / Bentley, The dragon and the hidden land: social and historical studies on Sikkim and Bhutan. Proceedings of the Bhutan-Sikkim panel at the 13th Seminar of the International Association for Tibetan Studies, Ulaanbaatar, Mongolia, July 21-27, 2013 (= Bulletin of Tibetology Vol. 50: 1&2, 2014), 153-190

Burling 2003 = Robbins Burling, The Tibeto-Burman Languages of Northeastern India. In: Thurgood / LaPolla, The Sino-Tibetan Languages (New York 2003), 169–191.

Coblin 1991 = Weldon South Coblin, Notes on Old Tibetan rje-blas. In: Steinkellner Tibetan History and Language: Studies Dedicated to Uray Géza on his Seventieth Birthday. (= Wiener Studien zur Tibetologie Buddhismuskunde, Heft 26, Wien 1991), 63-110.

Das Gupta 1968 = K[amalesh] Das Gupta, An introduction to Central Monpa (Shillong 1968).

Deuri 1983 = R. K. Deuri, The Sulungs (Shillong 1983).

Dondrup 1988 = Rinchin Dondrup, A Handbook on Sherdukpen Language (Itanagar 1988).

Dondrup 1990 = Rinchin Dondrup, Bugun Language Guide (Itanagar 1990).

Dondrup 2004 = Rinchin Dondrup, An Introduction to Boot Monpa Language (Itanagar 2004).

Doney 2013 = Lewis Doney, Emperor, Dharmaraja, Bodhisattva? Inscriptions from the Reign of Khri Srong lde brtsan. In: Journal of Research Institute Kobe City University, vol. 51 (Kobe 2013), 63–84.

van Driem 2001 = George van Driem, Languages of the Himalayas - An Ethnolinguistic Handbook of the Greater Himalayan Region. Vol. 2. (Leiden 2001).

Genetti 2016 = Carol Genetti, The Tibeto-Burman languages of South Asia: The languages, histories, and genetic classification. In: Hock / Bashir, The Languages and Linguistics of South Asia: A Comprehensive Guide (Berlin 2016).

Hammarström et al., Glottolog 3.3. Online in Internet: URL http://glottolog.org (accessed 17.9.2017).

Hill 2013 = Nathan W. Hill, Relative ordering of Tibetan sound changes affecting laterals. In: Language and Linguistics 14.1 (2013), 193-209.

Hill 2019 = Nathan W. Hill, The Historical Phonology of Tibetan, Burmese, and Chinese (Cambridge 2019).

Jacques 2014 = Guillaume Jacques, On Coblin's Law. In: VanNess Simmons / Van Auken, Studies in Chinese and Sino-Tibetan Linguistics (Taipei 2014), 155–65.

Jacquesson 2015 = François Jacquesson, An introduction to Sherdukpen (= Diversitas Linguarum Vol. 39, Bochum 2015).

Jäschke 1992 = Heinrich A. Jäschke, Tibetan-English Dictionary, with special reference to the prevailing dialects (to which is added an English-Tibetan vocabulary) (London 1992 [1881]).

Lǐ 2004 = Lǐ Dàqín, Sūlóngyǔ yánjiū [Research on Puroik] (Běijīng 2004).

Lieberherr / Bodt 2017 = Ismael Lieberherr / Timotheus Adrianus Bodt, Sub-grouping Kho-Bwa based on cognate core vocabulary. In: Himalayan Linguistics Vol. 16(2), 2-40 (2017). https://escholarship.org/uc/item/4t27h5fg

Lorrain 1940 = James H. Lorrain, Dictionary of the Lushai language (= Bibliotheca Indica 261, Calcutta 1940).

Matisoff 2009 = James A. Matisoff, Stable Roots in Sino-Tibetan / Tibeto-Burman. In: Senri Ethnological Studies 75 (2009), 291–318.

Nishi 1999 = Yoshio Nishi, Four papers on Burmese: Toward the history of Burmese (the Myanmar language) (Tokyo 1999).

Post / Burling 2017 = Mark W. Post / Robbins Burling, The Tibeto-Burman languages of Northeastern India. In: Thurgood / LaPolla The Sino-Tibetan Languages (London 2017), 213–233.

Rutgers 1999 = Leopold Roland Rutgers, Puroik or Sulung of Arunachal Pradesh. Paper presented at the 5th Himalayan Languages Symposium (Kathmandu 1999).

Sagart 2014 = Laurent Sagart, A note on Tibeto-Burman bone words and Chinese pitchpipes. In: VanNess Simmons / Van Auken Studies in Chinese and Sino-Tibetan Linguistics: Dialect, Phonology, Transcription and Text (Taipei 2014), 179–83.

Schuessler 1998 = Axel Schuessler, Another note on Old Tibetan rje-blas. In: Linguistics of the Tibeto-Burman Area Volume 21.2 (1998), 3-4.

Stonor 1952 = Charles Robert Stonor, The Sulung tribe of the Assam Himalayas. In: Anthropos 47 (1952), 947–962.

Sūn et al., Zàng-Miǎn-yǔ yǔyīn hé cíhuì [Tibeto-Burman Phonology and Lexicon] (Běijīng. 1991).

Sun 1992 = Tianshin Jackson Sun, Review of Sūn et al., Zangmianyu Yuyin He Cihui [Tibeto-Burman Phonology and Lexicon] (Běijīng. 1991). In: Linguistics of the Tibeto-Burman Area 15 (1992), 73–113.

Sun 1993 = Tianshin Jackson Sun, A Historical-Comparative Study of the Tani (Mirish) Branch in Tibeto-Burman (Habil. Berkeley 1993).

Takeuchi 1995 = Tsuguhito Takeuchi, Old Tibetan contracts from Central Asia (Tokyo 1995).

Tayeng 1990 = Aduk Tayeng, Sulung Language Guide (Itanagar 1990).

Tshe-ring 1997 = rNam-rgyal Tshe-ring, Gǔ zàng wén cídiǎn [Old Tibetan dictionary] (Běijīng 1997).

Uebach / Zeisler 2008 = Helga Uebach / Bettina Zeisler, rJe-blas, pha-los and Other Compounds with Suffix –s in Old Tibetan Texts. In: Hubert et al., Chomolangma, Demawend und Kasbek, Festschr. für Roland Bielmeier zu seinem 65. Geburtstag (Halle 2008), 309-334.

Zhāng 1993 = Yísūn Zhāng, *Zàng Hàn dà cídiǎn* [The Tibetan-Chinese Dictionary] (Běijīng ²1993).

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