FIRST NOTES ON THE PHONOLOGY AND CLASSIFICATION OF THE BANGRU LANGUAGE OF INDIA[1]

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Abstract
This is the first description of the Bangru language spoken in a remote corner of Kurung Kumey district, Arunachal Pradesh, Northeast India. On the basis of our data and analysis, we identify Bangru as a Tibeto-Burman language with as its closest genetic relatives Miji and Hruso, spoken further to the southwest in East and West Kameng districts. Based on these preliminary data and their analysis, Bangru is described as having 18 distinctive consonants, seven distinctive simple vowels and three distinctive diphthong vowels. The basic syllable structure is $C_i(G)V(C_f)$. Bangru is furthermore characterised by the retention of Proto-Tibeto-Burman prefixes as reduced syllables. This paper also provides additional evidence for the validity of Shafer's 'Hruso', with Hruso itself as its most aberrant member.

Keywords: Bangru, Tibeto-Burman, Trans-Himalayan, Miji, Aka, Hruso, Hrusish, genetic classification, phonology.

1. INTRODUCTION

In this paper we survey the existing literature about the Bangru language, propose a provisional phonology of the languages, and discuss its possible genetic affiliation.

1.1. ETHNOLINGUISTIC OVERVIEW

The vast majority of the population of Kurung Kumey district, around 90%, speak Nyasang[2]. The Bangru are administratively part of the larger Nyishi Scheduled

[1] This paper is the result of fieldwork conducted in Sarli circle, Kurung Kumey district, Arunachal Pradesh in December 2013. The authors wish to acknowledge the assistance of local host and consultant Mr. Tafiap Yangfo and his family, guide and consultant Mr. Tame Ramya, the cooperation of Tezpur University students Eshani Baishya, Sansuma Brahma, Nawaf Zahdaan Helmi, Diksha Konwar, Rahul Matela and Pinaz Mirza and Tezpur University project staff Ms. Nupur Sinha and the kind coordination by Mrs. Madhumita Barbora of the Department of English and Foreign Languages. This research would not have been possible without the patient contributions of local informants Pisa Meji, Pisa Nikma, Bengia Yapang, Pisa Niglar, Milli Kafa, Pisa Tamang and Pisa Chachung. The paper also benefited from the value comments and suggestions by two anonymous referees as well as Prof. Dr. Graham Thurgood, California State University and Mr. Yeshy T. Sotrug, Bern University.
[2] Nyasang is the local variety of the language more commonly known as Nyishi, Nishi, Nishing or Bengni, belonging to the Western Tani group.

Tribe and as a result of intense contact with the majority Nyasang population they share many cultural characteristics. Within remote Sarli circle, the Bangru constitute 40% of the population (Tame, 2011). There is also a small Puroik community in the circle. The Bangru number around 1,500 people.

The Bangru inhabit the traditional *ləwjɛ*: *ne*:*pe: rəŋle*: *kətə̃ĩŋ* 'thirteen Bangru villages'. They consider this area as their original homeland and claim descent from two sons of *ʾase*: *ləd͡ʑuwjɛ*: 'Grandmother Sun'. The Bangru call themselves *ta*:*də* or *ta*:*d͡ʑu*: *baŋru*: and belong to five clans, the original *pəd͡ʑo*:*d͡ʑu*: Pisa, *məlo*:*d͡ʑu*: Melo, *təgaŋd͡ʑu*: Tagang and *məlid͡ʑu*: Mili clans descending from one of the sons, and the *sa*:*pə* Sape clan descending from a bride who came later from Tibet. The Bangru believe that the other brother migrated to the Lada area of East Kameng district where he became the ancestor of the *wa*:*du*: *baŋru*: or the Miji people. Like most people of the state, the Bangru practise shifting cultivation and rely heavily on the forest resources. The original Bangru belief system, now largely replaced by Christianity, accorded paramount importance to the sun and moon, who are respectfully addressed as *ʾalo*: *ləbə̃ĩ* 'our grandfather moon' and *ʾase*: *ləd͡ʑu*:*wjɛ*: 'our grandmother son', even in daily speech.

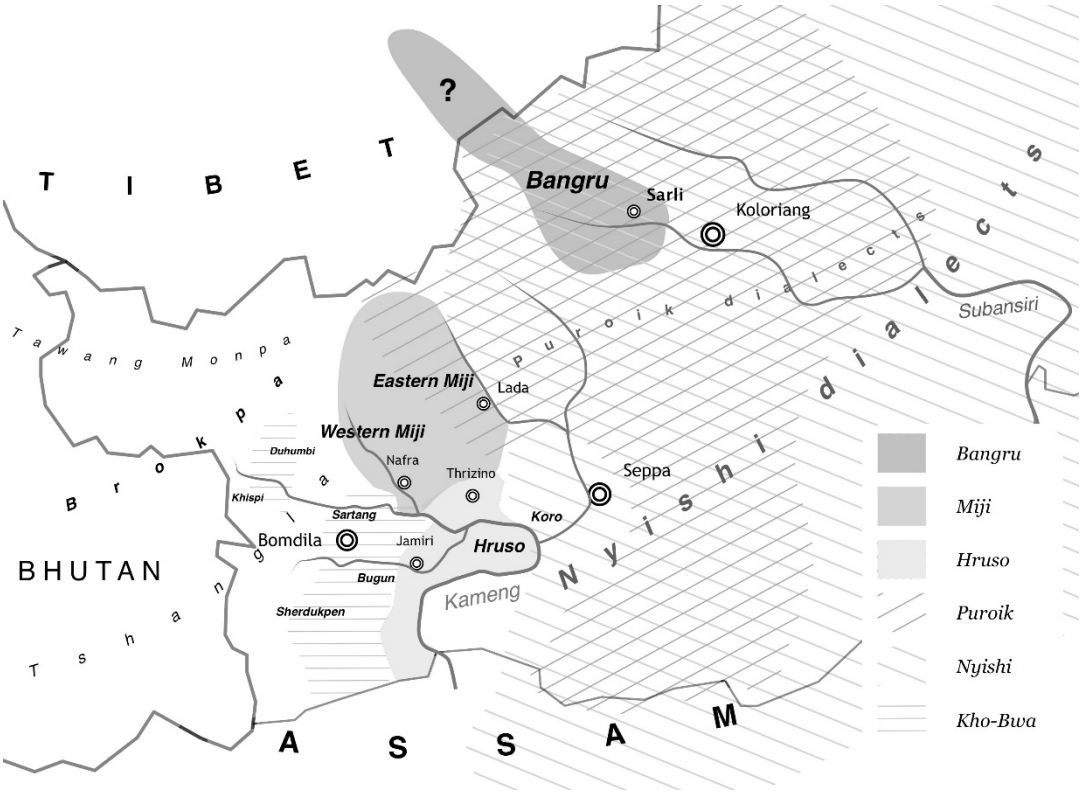

Figure 1. Bangru and its neighbours.

1.2. PREVIOUS LITERATURE

Previous literature about the Bangru and their language is scant. Sun (1993: 348) was the first to report a Bangru population of 1,000 people. Sun wrote about Bangru that

"There is at least one more Hrusish language in Arunachal Pradesh, namely the language of the Bangru tribe of North-western Upper Subansiri district. Publications on the Bangru language are completely non-existent. Our limited fieldwork data on Bangru reveals such striking resemblances between Bangru and Dhammai that they may even turn out to be dialects of the same language".

And in the footnote on the same page

"The Bangru (autonym Levai /lə^{31}væ^{55}/) tribe consists of about a thousand souls whose villages are distributed in the Lagong area along the Tibetan-Indian border (Anonymous 1989:248). Note the similarity between the name Levai *and the Miji autonym* Dhammai *(/*ðɯm-mai*/). It is possible that the Levai represents a northeastern subbranch of the Mijis of Eastern Kameng. The name* Bangru *(/*bɯŋ-ru*/) is a Bengni exonym; cf. also the Sulung exonym of Levai:* Buzwa *(/*bu^{33}zwa^{53}*/)".*

Sun was thus the first to establish a possible relation between Bangru and the Hrusish languages. The Hrusish languages, including the Miji varieties of East and West Kameng and Hruso (Aka), were identified as a subgroup by Shafer (1947, 1955) based on Hruso and West Kameng Miji data. Hruso descriptions can be found in Anderson (1896), Schubert (1964), Simon (1993 [1970]) and Abraham et al. (2005). Miji descriptions can be found in Shafer (1947), Simon (1979) and Abraham et al. (2005).

There appears to be no print version of the one thousand Bangru words that Sun collected from his Puroik consultant in Tibet (footnote 256 in Sun 1993: 348). In 2003, Li published a short description of the phonology, morphology, basic grammar and vocabulary of *ləʔ^{31} wai^{55}* Bangru, based on two Bangru informants. Li indicates that there are six ethnic Bangru in *doŭ yuè yī* village on the Tibetan side of the border, out of which only three speak the Bangru language, all aged 50 years or older: this speech community is obviously moribund, if not extinct by now. He mentions that it is estimated that another 2,000 Bangru speakers inhabit various villages south of the Line of Actual Control[3]. A comparison between our data and the data in Li (2003) shows 50% of lexemes with same root and same form, 30% of lexemes with same root but different form, and 20% of lexemes with different root.

[3] The authors wish to thank Mr. Yeshy T. Sotrug, University of Bern for his translation of this description.

In 2011, Tame's M. Phil. dissertation was the first study on the Bangru of Arunachal Pradesh, which included a word list, followed by several articles (2012 and 2013). Tame's word list is reproduced without proper attribution in Blench (2014).

Although recently doubts were raised on the validity of this subgroup and on the affiliation of Hruso with the Tibeto-Burman[4] language family as a whole (Blench and Post 2014), Anderson (2014) recently presented an initial overview that the Hrusish languages should in fact be considered to belong to this family. Although he proposes the name 'South-eastern Kamengic', we prefer to continue to use the name Hrusish. For the purpose of this article, we follow Shafer's initial Hrusish hypothesis, with the addition of Bangru. This preliminary family tree is schematically represented in figure 2.

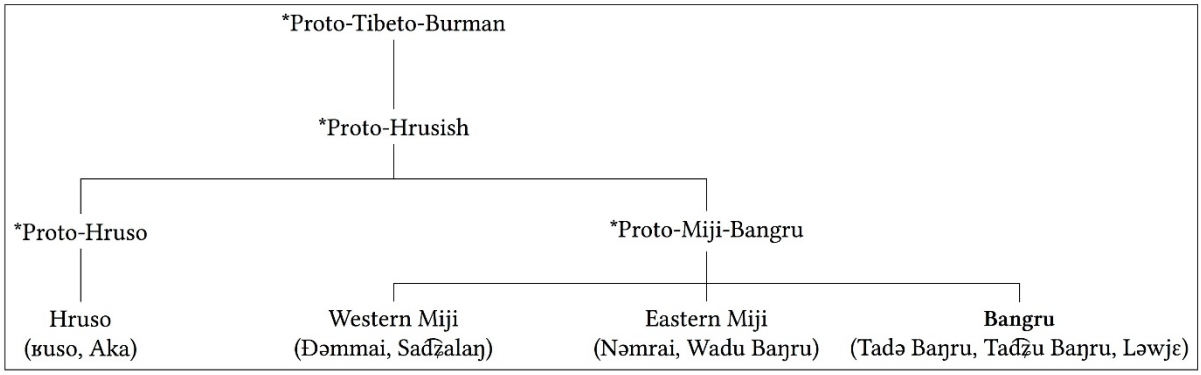

Figure 2. Preliminary Hrusish family tree.

2. DATA

This description is based on original field research conducted in *sɑːtə*: Sate village and Sarli circle headquarter in December 2013. Our informants were six mother tongue speakers and one Nyasang speaker who learnt Bangru as a second language. Three of our informants were female, and four were male. One speaker was over 70 years of age, three speakers were over 50 years of age, two speakers were between 30 and 50 years of age, and one speaker was a teenager. Six speakers belonged to the Pisa clan and one speaker belonged to the Mili clan. Although we used Hindi as direct contact language, we also relied on two Nyasang speakers native to Kurung Kumey district with some knowledge of Bangru and a good knowledge of both Hindi and English.

We elicited and recorded lexical items from a list with 441 entries occurring on the Swadesh 100 and 200 word lists, Matisoff's CALMSEA list (Matisoff 1978: 284), the Leipzig-Jakarta list (Haspelmath and Tadmore 2009) and the SIL list from Abraham et al.'s 2005 linguistic variety survey of western Arunachal

[4] In von Klaproth's 1823 original sense, i.e. Tibetan, Burmese, Chinese and all languages that can be demonstrated to be genetically related to these. Recently, van Driem (2011, 2014) suggested the neutral, geographical term Trans-Himalayan in recognition of the wide linguistic variety found among populations straddling the Himalayan divide.

Pradesh. We also recorded and transcribed any additional lexical items that speakers mentioned. Furthermore, we elicited a limited number of basic phrases and sentences. Finally, we recorded two origin stories.

Appendix C contains a list with secondary sources we used for comparative data of other languages including the abbreviations used in the remainder of this paper. On basis of Bangru and Miji speaker information about mutual intelligibility, we presume that Bangru and Eastern Miji might be more closely related than Bangru and Western Miji. Abraham et al.'s lexical similarity scores (2005: 13) indicate that 'Miji' itself exhibits considerable internal variation. Although this will not be the focus of this paper, for our comparative purposes it led us to group the data from Simon and data of speaker C, D and e from Abraham et al. (2005) together. These four speakers appear to represent the western variety of Miji spoken in Nafra and Thrizino circles of West Kameng district by the people known by the endonyms of *sad͡ʑalaŋ* Sajalang or *ðəmmai* Dhəmmai, henceforth referred to as Western Miji. Speakers A and B represent the eastern variety of Miji spoken in Lada circle of East Kameng by the people known as *nəmrai* Nəmrai, henceforth referred to as Eastern Miji. The *ʁuso* Hruso data in Simon (1993 [1970]) and Abraham et al. (2005) were both from the most accessible Hruso village, *kʰut͡so* Jamiri. As a result of two independent sources, Abraham et al. (2005) and Simon (1979), we were able to find 421 of our Bangru entries in the Western Miji varieties, 280 entries of Bangru entries in the Eastern Miji varieties, and 273 of the Bangru entries in the Hruso sources.

3. PRELIMINARY PHONOLOGY

The following sections provide a concise overview of the segmental phonology of Bangru. Because of the preliminary nature of our research, this overview should be considered as a first initial sketch. We provide minimal pairs wherever possible.

3.1. CONSONANT PHONEMES

Our data show that Bangru has a relatively simple inventory of 18 consonant phonemes in eight places and eight manners of articulation, summarised in Figure 3.

manner of articulation	*bilabial*	*labio-velar*	*alveo-lar*	*post-alveolar*	*pala-tal*	*velar*	*glottal*
nasal	m		n		ɲ	ŋ	
stop	p b		t d			k g	
affricate				t͡ɕ d͡ʑ			
fricative			s				h
approximant		w			j		

lat. approx.		l	
trill		r	

Figure 3. Bangru consonant phonemes

Bangru has three unvoiced plosive consonant phonemes in three places of articulation, velar, alveolo-dental and bilabial, /k, t, p/ and their three voiced counterparts /g, d, b/.

/k/ vs. /g/	*ku*: 'cook meat' vs. *məgu*: 'chin'; *go*: 'wood' vs. *ko*: 'stab, punch'; *məki*: 'dry' vs. *gi*: 'stand'
/t/ vs. /d/	*to*: 'bite' vs. *do*: 'chicken'; *du*: 'have, exist' vs. *mətu*: 'tooth'
/p/ vs. /b/	*pi*: 'awake' vs. *bi*: 'run'; *pa*: 'kick' vs. *ba*: 'bamboo'

Bangru has two distinctive fricative phonemes, unvoiced alveolar fricative /s/ and the unvoiced glottal fricative /h/. Both fricatives occur only in syllable-initial position. Before the close, back rounded vowel /u/ and the diphthong /ua/ the unvoiced alveolar fricative has as allophone in free variation the unvoiced postalveolar fricative [ɕ].

/s/ vs. /h/	*məse*: 'other's grandmother' vs. *məhẽ*: 'empty'; *səŋ* 'live, grow up' vs. *həŋ* 'this'

We found two distinctive affricate phonemes in Bangru, the unvoiced alveolo-palatal affricate /t͡ɕ/ and the voiced alveolo-palatal affricate /d͡ʑ/. The voiced alveolar affricate /d͡z/ can precede all distinctive monophthong and diphthong vowel phonemes and occurs in free alternation with the voiced postalveolar affricate [d͡ʒ] and has two speaker-dependant irregular allophones, voiced alveolar fricative [z] and voiced alveolar affricate [d͡z].

The unvoiced alveolo-palatal affricate /t͡ɕ/ occurs in a limited set of lexemes and its realisation is remarkably divergent across lexemes and speakers. In onset position, the phoneme can be realised as unvoiced alveolo-palatal affricate [t͡ɕ], as unvoiced postalveolar affricate [t͡ʃ] or as unvoiced alveolar affricate [t͡s]. In coda position, we found realisation as both unvoiced and unvoiced aspirated postalveolar and alveolo-palatal affricates [t͡ʃ ~ t͡ʃʰ ~ t͡ɕ ~ t͡ɕʰ]. Whereas in coda position some speakers realise one of the affricate allophones, other speakers realise the last syllable of the word with an epenthetic syllable-final breathy voice vowel [i̤]. Examples are mainly the demonstratives and the noun [məpot͡ɕ ~ məpot͡ɕi̤] 'shoulder' and adjective [ɲit͡ɕ ~ ɲit͡ɕi̤] 'dirty'. A possible explanation for this may be language contact with Nyasang. The iambic rhythm of Bangru places stress on the second syllable and reduces the initial syllable, but the trochaic rhythm of Nyasang stresses the initial syllable and reduces the final syllable.

/t͡ɕ/ vs. /d͡ʑ/	*t͡ɕu*: 'storehouse' vs. *d͡ʑù'* '1. sun; 2. sit'; *t͡ɕa*: 'tea' vs. *d͡ʑa*: 'swim'; *mət͡ɕù'* 'wing' vs. *mədʑu*: 'child'

Bangru has nasals in four places of articulation, bilabial /m/, alveolar /n/, palatal /ɲ/ and velar /ŋ/. The nasal /ŋ/ occurs mainly as coda, with a few noted exceptions such as *pəŋu*: 'five', *ŋua* 'melt' and *səŋai ~ səɲi*: 'ant'. The other nasals do not occur as coda in native lexemes, except for the bilabial nasal /m/ in probable loans such as *ʾamam* 'fat, stout' (<Puroik *amam*) and *səram* 'otter' (<Nyasang *səram*). The alveolar nasal is sometimes palatalised before front vowels. Historical presence of syllable final nasals is a strong trigger for nasalisation of the preceding monophthong or diphthong vowel phoneme.

/n/ vs. /ŋ/	*nua*: 'ill' vs. *ŋua* 'melt'; *pəŋu*: 'five' vs. *nu:/nùʾ* 'thread'
/n/ vs. /ɲ/	*mənəŋ* '1. breast, 2. milk' vs. *məɲəŋ* '1. mouth, 2. language'
/n/ vs. /m/	*mənəŋ* '1. breast, 2. milk' vs. *məməŋ* '1. body hair; 2. feather'; *ni*: '1. 2SG, 2. know' vs. *mi*: 'think'

Bangru has three approximants in three places of articulation, the palatal approximant /j/, the lateral approximant /l/ and the voiced labiovelar continuant (labialised velar approximant) /w/. All three occur in onset position and the palatal approximant also occurs in initial consonant clusters. The voiced labiovelar continuant has an allophone in free alternation, the voiced labiodental fricative [v]. Transcriptions maintain the exact realisation. Bangru has a distinctive alveolar trill /r/.

/j/ vs. /w/	*ja*: 'blood' vs. *wa*: 'shifting cultivation plot'
/j/ vs. /l/	*ja*: 'blood' vs. *la*: 'sell'; *jə:/jəʾ* 'spittle' vs. *lə*: 'take'
/r/ vs. /l/	*ru*: '1. salt, 2. do/make' vs. *lu*: 'boil water', *məro*: 'liver' vs. *məlo*: 'hard'

3.2. VOWEL PHONEMES

The distinctive monophthong vowels of Bangru are a close, front unrounded vowel /i/ [i], a close, back rounded vowel /u/ [u], a close-mid, near-front unrounded vowel /e/ [e], the schwa /ə/ [ə] with close, central unrounded allophone [ɨ], the open-mid, near-front unrounded vowel /ɛ/ [ɛ] with allophones near-front vowel [æ] and nasalised [ɛ̃], the close-mid, back, rounded vowel /o/ [o] with a nasalised allophone [õ] and an open-mid, back rounded allophone [ɔ] and the open, central unrounded vowel /a/ [a]. The origin of the Bangru nasalised vowels is the result of a process of elision of the syllable-final nasal consonants /n, ŋ, m/, as described in section 4.5. This is supported by the fact that some speakers still realise a nasal consonant following a nasalised vowel, an observation transcribed as [(C_i)ṽ(ŋ/n)]. Vowel length can be predicted by phonotactic position in most cases, with vowels in open syllables longer than vowels in closed syllables. Noted exceptions are the open, central, unrounded vowel /a/ and the schwa /ə/, which are always short in prefixes even if these syllables are open. Vowel length, pitch

and glottal stop interact in intricate ways, as described in section 3.3. For clarity, long vowels are marked with [ː] and /ː/ in phonetic and phonemic transcriptions respectively.

In onset position, the Bangru vowels are inherently pre-glottalised. Of the three vowels that occur as onsets, /a/, /i/ and /ɛ̃/, the vowel /a/ can be found in syllable-initial position quite commonly, mainly as the prefix a- for own relatives and adjectives, but syllable-initially and monosyllabically the vowels /i/ and the /ɛ̃/ have only been attested in the lexemes ɛ̃: ‘paddy rice’, iː ‘deep’, iːriŋ ‘window’.

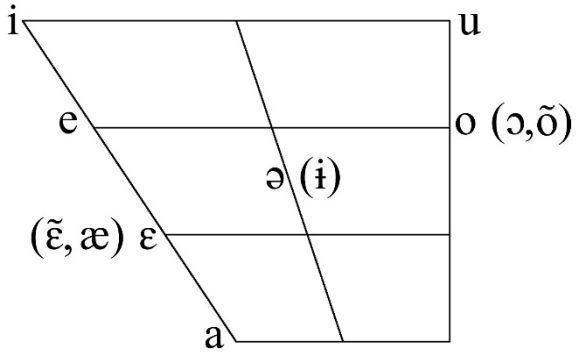

Figure 4. Bangru monophthong vowel phonemes.

/a/ vs. /u/	*ta*: ‘1. dig, 2. wound’ vs. *mətu*: ‘tooth’; *là?* ‘fireplace’ vs. *lù?* ‘month’; *ja*: ‘blood’ vs. *ju*: ‘turquoise’
/a/ vs. /ə/	*sa*: ‘pull’ vs. *sə*: ‘1. cow, 2. iron’; *d͡ʒa*: ‘swim’ vs. *d͡ʒə*: ‘frog’
/a/ vs/ /e/	*ta*: ‘1. dig, 2. wound’ vs. *te*: ‘speak’
/a/ vs. /ɛ/	*ama*: ‘sister (elder)’ vs. *mɛ*: ‘fire’; *pa*: ‘kick’ vs. *pɛ*: ‘swallow’ re:
/a/ vs. /o/	*pa*: ‘kick’ vs. *po*: ‘love’; *da*: ‘make’ vs. *do*: ‘chicken’
/u/ vs. /ə/	*tuŋ* ‘drink’ vs. *təŋ* ‘what’; *məru*: ‘thigh’ vs. *mərə*: ‘younger sibling’
/u/ vs. /o/	*put͡ɕi̯* ‘(that) down there’ vs. *pot͡ɕi̯* ‘shoulder’; *wu*: ‘put’ vs. *ləwo*: ‘sago palm’
/i/ vs. /ə/	*məri*: ‘bone’ vs. *mərə*: ‘younger sibling’
/i/ vs. /e/	*məki*: ‘dry’ vs. *ke*: ‘cry’; *pi*: ‘awake’ vs. *pe*: ‘vegetable’
/i/ vs. /ɛ/	*ɲəwi*: ‘man’ vs. *ɲəwɛ*: ‘woman’; *pi*: ‘awake’ vs. *pɛ*: ‘swallow’
/ə/ vs. /e/	*d͡ʒə*: ‘frog’ vs. *d͡ʒe*: ‘1. sleep, 2. 3PL’
/ə/ vs. /ɛ/	*d͡ʒə*: ‘frog’ vs. *d͡ʒɛ*: ‘melt’; *ləwə*: ‘man, human being’ vs. *ləwɛ*: ‘Bangru’
/ə/ vs. /o/	*d͡ʒə*: ‘frog’ vs. *d͡ʒo*: ‘burn’; *ase*: ‘grandmother’ vs. *aso*: ‘different, other’
/e/ vs. /ɛ/	*d͡ʒe*: ‘1. sleep, 2. 3PL, 3. 2PL’ vs. *d͡ʒɛ*: ‘melt’; *te*: ‘speak’ vs. *sətɛ*: ‘elephant’

Bangru has three diphthongs: rising diphthongs [ai] and [ɛi] and falling diphthong [ua]. The rising diphthong [ai] is a short diphthong starting with an open, central unrounded vowel /a/, and ending in a close, front unrounded vowel /i/. In some speakers, this diphthong is monophthongised to open-mid, near-front unrounded vowel /ɛ/. The rising diphthong [ɛi] is a short diphthong starting with an open-mid, near-front unrounded vowel /ɛ/ and ending in a close, front unrounded vowel /i/. In absence of convincing minimal pairs, we consider the nasalised variety of this diphthong [ɛ̃ĩ] as an allophonic variation, probably conditioned by the presence of a syllable-final nasal. The rising diphthongs have been attested in

open syllables and intervocalically with diphthong [ai] being more common than diphthong [ɛi].

The falling diphthong [ua] is a long diphthong starting with a close, back rounded vowel /u/ and ending in an open, central unrounded vowel /a/. This diphthong has only been attested in open syllables. Alternative realisations include a falling diphthong [oa] and, particularly in careful speech, an initial consonant cluster Cwa.

/ua/ vs. /u/	*məd͡ʑua* 'friend' vs. *məd͡ʑu*: 'child'
/ua/ vs. /a/	*gua* 'rot' vs. *ga*: 'clothing'; *lua ~ loa* 'wind' vs. *la*: 'sell'
/ɛi/ vs. /ai/	*kərai* 'bow' vs. *kərɛi* 'two'; *mət͡ɕɛ̃ĩ* 'below' vs. *t͡ɕai* 'weave'
/ɛi/ vs. /ɛ/	*kətɛ̃ĩ* 'three' vs. *sətɛ*: 'elephant'; *jɛisəlɛ* 'cockroach' vs. *ni*ːj*ɛ*: (~ *jə*ː) 'sweat'
/ɛi/ vs. /i/	*səpɛ̃ĩ* 'goat' vs. *səpi*: 'mountain'; *ɛ̃*ː*ləgɛ̃ĩ* 'paddy rice' vs. *gi*: 'stand'
/ai/ vs. /i/	*bai* 'give' vs. *bi*: 'run'; *tai* 'die' vs. *ti*: 'who'; *t͡ɕai* 'excrete' vs. *t͡ɕi*: 'liquor'
/ai/ vs. /a/	*d͡ʑai* 'float' vs. *d͡ʑa*: 'swim'; *bai* 'give' vs. *ba*: 'big bamboo'; *tai* 'die' vs. *ta*: 'dig'

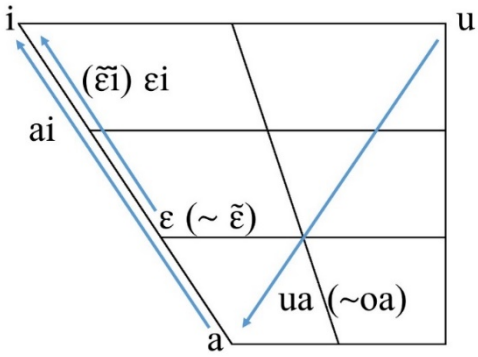

Figure 5. Bangru diphthong vowel phonemes

3.3. CODAS, PITCH AND VOWEL LENGTH

Bangru has a number of minimal pairs contrasting a long vowel with level pitch and slight final aspiration or breathy voice [v̄ː ~ v̄ʰː] versus a short vowel with falling pitch and – depending on the speaker – a slightly creaky phonation [v̰] or a syllable final glottal closure or glottal stop [vˀ ~ vʔ]. We observed this for both monophthong vowels and diphthong vowels. A number of minimal and near-minimal pairs are presented in table 1. Reconstructed Proto-Tibeto-Burman and Miji cognates have been provided if illustrative for a possible source of the syllable-final glottal stop.

Opposition	*Minimal pair*	*PTB*	*Miji/Hruso*
/oˀ/ vs. /oː/	*məlòˀ* 'penis' vs. *məlo*: '1. hard, 2. grandfather'	PT *mrak PENIS; *s-ra HARD/POOR	*goɣou* (AA) 'hard'
/uˀ/ vs. /uː/	*d͡ʑùˀ* '1. sit, 2. sun' vs. *pəd͡ʑu*: 'bird'; *sùˀ* 'meat' vs. *su*: 'cane'	*m-(t/d)u(ŋ/k) SIT; *daw OR *dow BIRD;	*dʒuʔ* (AW) 'sit'; *dʒoʔ* (AW, AE) 'sun'; ʃitʃuŋ (AW),

Opposition	*Minimal pair*	*PTB*	*Miji/Hruso*
		*sya-n MEAT; *s-rwi(y) CANE/CORD;	sikijuŋ (AE), sə (SA) 'meat'; ʃu (SM, SA) 'cane'
/iˀ/ vs. /iː/	*gìˀ* 'cloth' vs. *giː* 'stand'		*gijon, gəroŋ* (AW, AE) 'stand'
/ɛˀ/ vs. /ɛː/	*mər(j)èˀ* 'leaf' vs. *mərɛː* 'near'	*rwak LEAF; *s-ney NEAR	*uleʔ~məleʔ* (AW) 'leaf'; *məro^{i}* (AE) 'near'
/əˀ/ vs. /əː/	*kə͡dʒ̀əˀ* 'thorn' vs. *d͡ʑəː* 'frog'	*m-(d)z(y)u(ː)k PIERCE/THORN	*gədʒik* (AW) 'thorn'; *dʒou* (AW, AE) 'frog'
/aˀ/ vs. /aː/	*làˀ* 'fireplace' vs. *laː* 'sell'	*g-rap FIREPLACE; (g/m/s)-lay EXCHANGE /BARTER	*dət^{h}le* (SM) 'fireplace'
/eˀ/ vs. /eː/	*rèˀ* 'six' vs. *kaːreː* '1DU'	*d-k-ruk SIX	*reʔ* (AW) 'six'
/aiˀ/ vs. /ai/	*ràìˀ* 'grind, to crush' vs. *kəraɨ* 'bow'	*kriːt GRIND; *(g/b/m)-la-y BOW/ARROW	*rɨ̰* (SM); *ri* (SA) 'grind'; *k^{h}iri* (AA, AW), *geri~gri* (AW), *kəra^{i}* (AE) 'bow'

Table 1. Examples of long vowel, level pitch vs. short vowel, falling pitch

A preliminary acoustic analysis indeed showed a significant difference in vowel length, pitch difference and spectral tilt. For the purpose of this paper, we analysed this difference as a difference of underlying open and closed syllables, rather than a difference in tone or vowel length. The comparative evidence in Table 1 suggests that the short-falling roots often derive from roots with consonantal coda.

3.4. SYLLABLE AND WORD STRUCTURE

The maximally permitted structure of the Bangru syllable is $C_i(G)VC_f$. The minimal syllable consists of a vowel, though thus far only a few occurrences have been attested. Examples of each possible syllable structure include: V: *ɛ̃ː* 'paddy rice'; VC_f: *aiŋ* 'gold'; C_iV: *doː* 'chicken'; C_iGV: *gjaː* 'kill'; C_iVC_f: *həŋ* 'this, here'; C_iGVC_f: *məmjəŋ* 'name'.

Within syllable structure C_iGV and C_iGVC_f, the C_i slot can be occupied by stops /k, t, p, g, d, b/, the nasal /m/, the approximant /w~v/, the fricative /s/ and the trill /r/. The G slot can be occupied by trill /r/ or glide /j/. The most common vowels following a consonant cluster are the open, central unrounded vowel /a/ and the

open-mid, near-front, unrounded vowel /ɛ/. In isolated cases, the open, close-mid back vowel /o/ after clusters /kj, gj, kr/, the schwa /ə/ following clusters /rj, mj, kr/ and the back rounded vowel /u/ following the cluster /rj/ have been attested. In many speakers and in allegro speech, the consonant clusters /dj, lj, rj, wj ~ vj, gj, bj, mj/ when followed by vowel /ɛ/ and the consonant clusters /wj, lj, sj, rj, mj/ when followed by vowel /a/ are often realised without glide and with long, open-mid, near-front unrounded vowel /ɛ:/.

/dj/ *djɑ*: ~ *djɛ*: ~ *dɛi* ~ *dɛ*: 'go'
/lj/ *pəljɑ*: ~ *pəlɛ*: 'tongue'
/bj/ *məbjɑ*: ~ *məbjɛ*: ~ *məbɛ*: 'big, thick, wide, high'
/rj/ *mərjè˒* ~ *mərɛ*: 'leaf'
/sj/ *rəsjɑ*:*rɛ*: ~ *rəsɛ*:*rɛ*: 'grass, weeds'
/wj/ *ɲəwjɛ*: ~ *ɲəwɛ*: 'woman'
/gj/ *məgjè˒* ~ *məgɛi˒* ~ *məgɛ*: 'hand, arm'
/mj/ *mjɛ*:*peziŋ* ~ *mɛ*:*pəziŋ* 'coal'

In the case of consonant clusters with the trill /r/, the reconstructed Proto-Tibeto-Burman forms commonly reflect complex initial consonant clusters (*CrV). In Bangru, speakers will insert a schwa in careful speech (CərV), however, this schwa is again omitted in allegro speech (CrV).

/pr/ *ləpəri*: ~ *ləpri*: 'soft, smooth' cf. PTB *pryaw-k
/kr/ *məkəro*: ~ *məkro*: 'straight' cf. PTB *t(r)waŋ

The Bangru word, in particular the Bangru verb, can consist of several prefixes, suffixes and perhaps infixes, whose description would go beyond the scope of this paper. Unstressed, phonologically reduced syllables of the form V or C_iV are commonly aligned to the left of the fully formed stressed syllables of the form C_i(G)V(C_f). The reduced syllables contain reduced vowels, i.e. a pre-glottalised back vowel /a/ or an epenthetic schwa /ə/. In the majority of cases, these are prefixes, which Bangru has largely preserved.

Prefix	*Function*	*Examples*	*PTB/OC*
mə-	animated/human prefix; e.g. kinship: 'the other's' and body parts: 'inalienable part of self'	*məɲɛ*: 'someone else's mother'; *momuɑ* 'someone's elder sister'; *mələgu*: 'guts, intestines'; *mələwjɑ*: 'tail'	OC **mi* 'animated/human' (Baxter and Sagart 2014: 55), PTB **m*- '3rd person poss.'
	adj.	*məpɑŋ* 'long'; *məwə*: 'round'	OC *mə- for volitional verbs (Baxter and Sagart 2014: 55)
	adv. and proposition	*mə͡tɕɛ̃ĩ̃* 'below'; *mə͡dʑe*: 'slow'	-do-

Prefix	*Function*	*Examples*	*PTB/OC*
gə-/go-	part of head	*gəpɨ*: 'hair'; *go*:*kɛ̃ĩŋ* 'head'	**m/s-gaw* HEAD
	related to trees	*gəpja*: 'bark'; *gənɛ*: 'tree'	*PH go* 'wood'
ɑ-	kinship: 'the own'	*ɑɲɛ*: 'own mother'; *ɑmɑ*: 'own elder sister'	**ʔa-* 'kinship'
	adj.	*ɑmɑm* 'fat, stout'; *ɑrəŋ* 'far'	-
lə-	adj.	*lətõ*: 'light'; *ləpri*: 'soft, smooth'	-
	natural elements	*ɑlo*: *ləbɑi* 'grandfather moon'; *lə͡tɕɨ*: 'star'	-
sə-	animals	*səkja*: 'animal'; *sə͡tɕõ*: 'bear'	**sya-n* MEAT

Table 2. Bangru prefixes.

Miji and Hruso have preserved fewer prefixes. Eastern and Western Miji have an adjective prefix <*mə-*>, except for the Dibbin variety, which has an adjective prefix <*ɑ-*>. Eastern and Western Miji also have the <*ɑ-*> and <*mə-*> prefixes for kinship terms, but do not appear to make the 'own' versus 'other' distinction, i.e. the distinction between 'my own mother' versus 'someone else's mother'. Hruso body parts are commonly prefixed with any of the simple vowels.

4. GENETIC CLASSIFICATION OF BANGRU

Based on lexical comparison, Anderson (2014) adduced for Bangru, Miji and Hruso what Shafer (1947) earlier proposed for Miji and Hruso, namely that they form a coherent subgroup of the Tibeto-Burman language family. In this section, we will present additional evidence for this. In our Bangru data, we found reconstructed proto-forms for around 50% of the 360 lexical entries appearing in both our data set and the STEDT database[5]. This is a first indication that Bangru can be considered as Tibeto-Burman language. Bangru's affiliation with the other Hrusish languages Miji and Hruso can also be illustrated through the shared pronominal and numeral paradigms in Table 3 and 4. Regular sound correspondences between the reconstructed Proto-Tibeto-Burman roots and modern Bangru, Miji and Hruso reflexes given below further lend evidence to the affiliation of these languages with the other Tibeto-Burman languages. The STEDT database references and glosses of reconstructed Proto-Tibeto-Burman

[5] More detailed and complete overviews, including original sound files, will be provided upon request. A tilde (~) in this and following tables indicates both distinctly transcribed entries as well as variant forms from secondary sources. Unless mentioned otherwise, Eastern and Western Miji and Hruso forms are from Abraham et al. (2005).

roots can be found in appendix C, a guide to the used abbreviations and glosses can be found in appendix A.

Gloss	*PTB*	*Bangru*	*E. Miji*	*W. Miji*	*Hruso*
1SG	*ŋa-y	ɲo:	ɲijaŋ	nijaŋ ~ ɲijaŋ; ɲaŋ (SM)	no
2SG	*naŋ	ni: ~ ɲi:	ni	ni	bʰa
3SG	-	pɛt͡ɕi̤	aⁱ	i ~ pʰet͡ʃu	ʔi
1PL[6]	*nəy	kaɲi: ~ kani:[7]	ani ~ animihõŋ	ani ~ aɲijaahuŋ	ɲi; ani (SA)
2PL	-	ni:; d͡ʑe:	dʒimihõŋ ~ dʒei	dʒi~dʒiməʃuŋ ~ ina	dʒo
3PL	-	d͡ʑe:(məlәŋ/ kadɬ)	aⁱra	inamehijaŋ ~ pʰaina ~ airaahuŋ	na
this	-	həŋ		huŋji ~ huŋlo ~ hãŋaⁱ	heji; huŋlo (SA)
that (same level)	-	pɛ:t͡ɕ(i̤)		paⁱtʃia ~ pʰetʃoi ~ pʰetʃilo ~ paitʃəlo	-
that (higher level)	-	to:t͡ʃ(i̤)		tʰaŋt͡su (SM)	-
that (lower level)	-	pu:t͡ɕ(i̤)		pʰut͡su (SM)	-

Table 3. Comparison of personal pronouns and demonstrative pronouns.

Gloss	*PTB*	*Bangru*	*E. Miji*	*W. Miji*	*Hruso*
one	PT *kon	ʾakã	akʰijo akʰowa ~ aŋ	akʰijo ~ akʰeʔ ~ akʰo ~ atro	ʔa
two	*(g/s)-ni-s	kərɛi	kʰerə ~ kəran	geni ~ gərin	kʃə
three	*sum	kətɛ̃ĩ	kʰətəm	gətən ~ kʰətəm ~ kətʰən	dʒə
four	*b-ləy	puruwɛ̃ĩ	pəleⁱ	bli ~ bəleⁱ	psə̆xi ~ pʰiri (SA)
five	*l/b-ŋa	pəŋu:	puŋu	buŋu ~ boŋu ~ pugu	pom; pum (SA)
six	*d-k-ruk	rèʾ	ra(m)	re(ʔ)	xe; rijɛ (SA)
seven	-	məwàìʾ	mija	mija(k)	mɹo; mrjo (SM)
eight	*b-r-gyat	səgàìʾ	ɕəgə	səgə(i) ~ tʃigə	ʃəgdʒə
nine	-	sətəŋ	ɕətan	sətən	st̤ə; stʰə (SA)
ten	PT *rjɯŋ	rəŋ	lən	ɬən ~ lən	xə; ɣə ~ rə (SA)
hundred	PT *lɯŋ	ləŋ	pəloŋ	bəluŋ ~ bluŋ	ɸoxa; pʰuɣu (SA)

Table 4. Comparison of numerals.

[6] Bangru does not have distinctive forms for first person plural inclusive or exclusive pronouns. The Bangru first person dual pronoun is *kare*: and the second person dual pronoun is *d͡ʒare*:.
[7] Perhaps reflecting egophoric first person pronoun PTB *ka-, cf. PKC kay ≍ kay-maʔ and various other languages of the extended Eastern Himalayas.

The correspondences between the pronouns and numerals in these languages can not be coincidental and are suggestive of a close historical relationship, be it a genetic relationship or one of intense contact. In addition to the lexical cognates and shared pronoun and numeral paradigms, we have identified 35 sound correspondences between the reconstructed Proto-Tibeto-Burman forms and the Bangru forms. In a reasonable number of cases, these sound correspondences are shared by Miji and Hruso. Not too much weight has been given to exceptions to the correspondences in the Western and Eastern Miji and Hruso cognates, because of having to rely on secondary data with transcriptions of variable reliability. These irregular correspondences are given between parentheses. The main correspondences for consonants we established are summarised in Table 5 and supportive sets are provided in detail in sections 4.1-4.7. Similarly, the supportive sets for the vowel correspondences are summarised in Table 32 and illustrated in section 4.8. Realisations after a slash represent equally frequent realisations, realisations between parentheses are marginal, and the forelast column presents a count of supporting sets.

PTB	*Bangru*	*Eastern Miji*	*Western Miji*	*Hruso*	#	*Table*
*s-	t-	t-	tʰ- (tʃ-)	dʒ-	6	6
*g-/*b- (pref.)	k-/p-	k-/p-	g-/b-	k(ʰ)-/p(ʰ)-	2/2	9
*t-	t-	t-	tʰ-	tʰ- (dʒ-)	4	10
*d-	d- (d͡ʒ-/t͡ɕ-)	d- (dʒ-/tʃ-)	d- (dʒ-/tʃ-)	d- (dʒ-/tʃ-)	11	11
*k(G)-	k-	k-/kʰ-	kʰ-	kʃ-	7	12
*g(G)-	g-	g-	g-	gdʒ-	2	13
*b-/*p-	b-/p-	b-/p(ʰ)-	b-/b-	b- (dʒ-)/pʰ-	3/1	14
*-k	-vˀ (–Ø)	–Ø	–Ø (-k/-ʔ)	–Ø	9	15
*-t	-vˀ (–Ø)	–Ø	–Ø (-ʔ)	–Ø	5	16
*-p	–Ø (-vˀ)	–Ø/-m	–Ø (-m)	–Ø	3	17
*m-	m-	m-	m-	m-	5	18
*n-/*ŋ-	r-	r-	r-/n-	ɲ- (n-)	6	19
*n-/*ŋ-	n-/ɲ-	n-/ɲ-	n-/ɲ-	n-/ɲ-	5	20
*-m	–Ø	–Ø/-m	–Ø/-n	–Ø	4	21
*l-	l-	l-	l- (ɬ-)	l-	7	22
*l-	r-	l- (r-)	l- (r-)	r-	3	23
*l-	l-	j- (l-)	j- (ʃ-/dʒ-)	l-	4	24
*r-	r-	r-	r-	r-/x-	6	25
*r-	r-	l-/r-	l-	r-/x-	3	26
*(t)s(y)-	t͡ɕ-	tʃ-	tʃ-	tʃ-	3	27
*(d)z(y)-	d͡ʒ-/t͡ɕ-	dʒ- (tʃ-)	dʒ-/tʃ-	tʃ- (dʒ-/ʃ-)	4	28

Table 5. Summary of sound correspondences (consonants).

*4.1. PROTO-TIBETO-BURMAN FRICATIVE *S– TO PLOSIVE T–.*

Shafer (1947: 185) was the first to describe one of the defining phonological innovations that Bangru, Miji and Hruso share with the 'Kamarupan' languages (Matisoff 2003: 31-32), including the Kuki-Chin languages (VanBik 2009: 16), Bodo-Garo, Karbi and Tangkhulic. This is the change from Proto-Tibeto-Burman **s–* to voiceless alveolar plosive *t–/tʰ-*.

Gloss	*PTB*	*Bangru*	*E. Miji*	*W. Miji*	*Hruso*
	**s-*	*t-*	*t-*	*tʰ-/tʃ-*	*dʒ-*
liver	*m-sin; PKC *thin: PTk tʰin	mə-**tɛ̃ĩ**	-	mə-**tʰən** (SM)	ě-**djŭ** (AS)
die	*səy; PKC *thii-I, thiʔ-II; PBG *thɯi[1]; PTk tʰi	**tai**	**tei**-na	**tʃi**	**dʒu**-dʒo ~ **d͡za/i** (SA)
seed	*sey; PTk *tʰa; PKC *θaŋ	mə-**tɛ̃**:	**ta**^{i}-lo^{i}	**tʰe**-li ~ **tʰe**-dʒo	-
fruit	*sey; PKC *thay; PBG *thai[2]; PTk *tʰej	mə-**tɛ̃**:	gu-**tan**	u-**tʰen**	ʃə̆-**dʒe**
three	*sum; PBG *tham[2]; PKC *thum; PTk *tʰum	kə-**tɛ̃ĩ**	kʰə-**təm**	kʰə-**təm** ~ kə-**tʰən** (~ gə-**tən**)	**dʒə**
who	*su; PKC *tuu	**ti**:-wo	**təə**	**tʃiu ~ tʃʰu**	**dʒu**

*Table 6. Proto-Tibeto-Burman *s– > t–.*

The innovation Proto-Tibeto-Burman **s-* > *t-* is shared by Bangru, Miji and Hruso. Bangru and Eastern Miji have well preserved this initial innovation, with reflexes of plosive *t-* in all cases. Counterexamples include those lexemes where the *s- > t- development preceded simplification of Proto-Tibeto-Burman consonant clusters with initial **s*. The following examples show that this initial /s/ was preserved in all the Hrusish languages, albeit with subsequent palatalisation in a number of instances.

Gloss	*PTB*	*Bangru*	*Miji*	*Hruso*
	**sG-*	*s-*	*s- (ʒ-/ʃ-)*	*s-/ʃ-/ts-*
louse	*s(y)ar	**sàʾ**	-	**ʃə** (SA)
meat	*sya-n; PKC *sʰaa	**sùʾ ~ ɕùʾ**	**ʃi**-tʃuŋ (AW); **si**-kijuŋ (AE)	**tsə** (SA)
grandmother	*sru(w)	a-**se**:	a-**ʒui** (SM)	-
iron	*syam	**sə**:	**sen** (SM)	**sə** (SA)
flow	*sywar ⋋ *g/b-sywa-n/t	**sa**:	-	-

*Table 7: Counterexamples to *s- > t-: initial clusters*

Other counterexamples include lexemes with **s-* prefixes and the loan word for 'breath'.

Gloss	*PTB*	*Bangru*	*Miji*	*Hruso*
	**s- (prefix)*	*s-*	*ʃ- (t^h-)*	*ʃ- (s-)*
breath	*N-sak; PCN *sak; Proto-Western Tani *sak BREATH(v); OC *sək	**sòˀ**	di-**t^hu** (SM)	-
dead body	***s**-maŋ ; PT *si-maŋ	**sə**-moː	-	-
cane; rope	***s**-rwi(y); PKC *ruy ≍ hruy; PCN *a-(h)rəj; PT *soŋ; Bengni u-šoː (Sun 1993: 93)	**su**ː ~ **ɕu**ː	**ʃu** (SM)	**ʃu** (SA)
live, grow up	***s**-riŋ ≍ s-r(y)aŋ; cf. NY səŋ, OC *sreŋ	**səŋ**	**ʃən** (SM)	**əʃə** (SA)
otter	***s**-ram	**sə̃**ː	-	**si**ze (SA)

*Table 8: Counterexamples for *s- > t-: s-prefixes.*

4.2. RETENTION OF SYLLABLE-INITIAL PLOSIVES.

Proto-Tibeto-Burman syllable-initial plosives were found to be preserved and have regular reflexes in the Hrusish languages. First of all, in prefixes, the Proto-Tibeto-Burman **b-* and **g-* were devoiced in Hruso, Bangru and the Eastern Miji varieties, but not in Western Miji.

Gloss	*PTB*	*Bangru*	*E. Miji*	*W. Miji*	*Hruso*
	**b-/*g-*	*p-/k-*	*p-/k-*	*b-/g-*	*$p(^h)$-/$k(^h)$-*
four	***b**-ləy	**pu**-ruwɛ̃ĩ	**pə**-le^{i}	**bli ~ bə**-le^{i}	**psə̆**-xi ~ **p^hi**-ri (SA)
five	*l/**b**-ŋa	**pə**-ŋuː	**pu**-ŋu	**bo**-ŋu **~ bu**-ŋu (~ **pu**-gu)	**p**-om; **p**-um (SA)
two	*(**g**/s)-ni-s	**kə**-rɛi	**kə**-ran ~ **k^he**-rə	**ge**-ni ~ **gə**-rin	**k-**ʃə; **k-**sə (SA)
bow	*(**g**/b/m)-la-y	**kə**-ràìˀ	**kə**-ra^{i}	**gə**-ri ~ **g**ri (~ **k^h**i-ri)	**k^hi**-ri

*Table 9. Reflexes of PTB prefixes *g-/b- in prefixes.*

Other than in prefixes, Proto-Tibeto-Burman **b-/*g-/*d-* tend to correspond with Hrusish voiced plosives *b-/g-/d-*. Proto-Tibeto-Burman **p-/*k-/*t-* tend to correspond with Hrusish unvoiced *p-/k-/t-,* often aspirated in Western Miji and Hruso. Affrication of plosives is common in the Hrusish languages as a secondary development. Major exceptions include voicing inconsistencies in reflexes of Proto-Tibeto-Burman **(t/d)ak* WEAVE: Bangru *t͡ɕai*, Eastern Miji *tʃom-na ~ gə^{i}-tʃom*, Western Miji *(zan/grə-)triŋ ~ ɕən ~ t^hrən*, Hruso *t^hi-jo*, all perhaps under influence of Tani, cf. Proto-Tani **čum* (provisional) and the reflexes for Proto-Tibeto-Burman **t(u/i)k* FROG Bangru *d͡ʑəː*, Miji *dʒou*, Hruso *ʃe-dʒa*.

Gloss	*PTB* **t-*	*Bangru* *t-*	*E. Miji* *t-*	*W. Miji* *t^h-*	*Hruso* *t^h- (dʒ-)*
drink	*N/s-tuŋ	**toŋ ~ tuŋ**	**toŋ**-na (~ t^hoŋ)	**t^hoŋ**(-me)	**t^hu**-dʒo (AA)
bite	*twak	**to**:	**ta**(**ʔ**-na)	**t^hai ~ t^haʔ**	**t^ho**-dʒo (AA)
tooth	*twaŋ[8]	mə-**tu**:	**tə**	**t^hu** (~ tu)	ʔe-**t^hu** (AA)
neg. imp.	*(t/d)a	**tu-**	**-**	**t^ha-** (SM)	**d͡ʒu-** (SA)

*Table 10. Reflexes of PTB *t-.*

Gloss	*PTB* **d-*	*Bangru* *d-/d͡z- (t͡ɕ-)*	*E. Miji* *d-/dʒ- (tʃ-)*	*W. Miji* *d-/dʒ- (tʃ-)*	*Hruso* *d-/dʒ- (tʃ-)*
chicken	*daw OR *dow	**do**:	**do^u**	**dok ~ doʔ ~ dup**	**dʒuo**
big (thick, wide)	*(t/d)ow-n	mə-**dua**	mə-**do** ~ mə-**də**-bu	mə-**do** ~ a-**do**	**djo**; **dɛu** (SA)
have; exist	*du	**du**:	**-**	**du** (SM)	**du** (SA)
make; do	*day	**da** ~ dɛ:	-	-	**d̲a**-dʒo
spear	*m-duŋ ≍ m-daŋ	gə-**t͡ɕəŋ**	**dʒoŋ/ʔ**	**dʒuŋ**	tʃu-**dʒu**
sit, stay	*m-(t/d)u(ŋ/k)	**d͡ʑùˀ**	**-**	deŋra-**dʒuŋ ~ dʒuʔ**	-
bear	*d-wam	sə-**t͡ɕõ**:	ʃi-**tʃaŋ**	ʃi-**tʃaŋ** ~ ʃi-**staŋ**	ʃə̆-**tʃo**
bird	*daw OR *dow	pə-**d͡ʑu**:	bə-**dʒi**	bə-**dʒə** ~ bu-**dʒuʔ**	-
body	*du	mə-**d͡ʑòˀ**	-	-	-
burn	*duk	**d͡ʑo**:	-	-	-
child	*m-(t/d)u	mə-**d͡ʑu**:	-	-	-

*Table 11. Reflexes of PTB *d-.*

Proto-Tibeto-Burman **t-* has as regular reflexes Bangru and Miji *t-/t^h-* and Hruso *t^h-*. The fact that no merger between reflexes of Proto-Tibeto-Burman **s-* and **t-* has taken place in Hruso indicates that at the Proto-Hrusish level, the Proto-Tibeto-Burman **s-* to Proto-Hrusish **t-* innovation had not yet taken place. We hence postulate that the Proto-Hrusish reflex of Proto-Tibeto-Burman **s-* was an intermediate form, perhaps **ϑ-*, which then became **t-* in Proto-Miji-Bangru, giving the reflexes *t-/t^h-* in the modern languages, and **t-* > (**tʃ-* ~) **dʒ-* in Proto-

[8] As pointed out by Mr. Yeshy T. Sotrug, these forms might also be related to PTB #632 *s/p-wa through the **s-* > *t-* change, see also Karen Taunthu *təŋa* 'tooth' (Benedict 1972: 137). The widespread occurance of roots cognates to *twaŋ in the Kho-Bwa languages, the s-prefix in *s/p-wa and comparative evidence from PKC *haa, PTk *ha and PCN *p-hwa do not readily support this hypothesis.

Hruso, giving the reflex *dʒ-* in modern Hruso. The reflexes of Proto-Tibeto-Burman **s-* in other language groups of Northeast India, such as *t-/tʰ-* in Kuki-Chin, Bodo-Garo, Central Naga and Tangkhulic, *Ø-* in the Kho-Bwa languages, variation between *Ø-, s-, h-* and *ɦ-* in Tani and the Mijuish languages and *s-* in Northern Naga, might similarly derive from this underlying**ʔ-*.

There are also a number of regular reflexes of the Proto-Tibeto-Burman syllable-initial **k-* and **g-*.

Gloss	*PTB* **k(G)-*	*Bangru* *k-*	*E. Miji* *k-/kʰ-*	*W. Miji* *kʰ-*	*Hruso* *kʃ- (k-)*
elder brother	*(g/k)əw-n	a-**ko**:	**kə**-voⁱ	a-**kʰə**-vo ~ **kʰə**-voʔ (~ a-kə-vo)	-
pillow	*m-k(u/i)m	go-**kɛ̃ĩ**	go-**kəm**	(nu/wo)-**kʰən ~** u-**kʰum**	di-**kʃo**
steal	*r-kəw	lə-**kə**:	tʃi-**kʰə**-na ~ ʃi-**kʰaᵘ**	tʃi/tʃə-**kʰə/kʰu**	**kʃa**-tʃudʒo
cry	*krap	**k(j)e**:	**krəm**-na	**krəm**-na ~ **kʰə̆**	**kʃo**
smoke (n.)	*kəw-n/t	mɛ-**kə**:	maⁱ-**kʰən**	maⁱ-**kʰən**	mu-**kʃə**
sew	*krwi(y)	**kàiˀ**	**kʰrəm**-na ~ gəⁱ-**kʰrə**	**kʰrə ~ kʰri**	**kʃi**-jo
bitter	*b-ka-(n/m/ŋ)	kə-**kjo**:	mə-**kʰu**	mə-**kʰu** ~ a-**kʰu**	**kam**-ʃo

*Table 12. Reflexes of PTB *k-.*

Gloss	*PTB* **g(G)-*	*Bangru* *g-*	*E. Miji* *g-*	*W. Miji* *g-*	*Hruso* *g͡dʒ-*
eight	*b-r-gyat	sə-**gàiˀ**	ɕə-**gə**	tʃi-**gə** ~ sə-**gə(i)**	ʃə-**gdʒə**
mountain	*s-gaŋ	**gaŋ**	-	-	-

*Table 13. Reflexes of PTB *g-.*

Like with Proto-Tibeto-Burman **g-*, there are relatively few reflexes of Proto-Tibeto-Burman **p-* and **b-*.

Gloss	*PTB* **b-; *p(G)-*	*Bangru* *b-; p-*	*E. Miji* *b-; p-/pʰ-*	*W. Miji* *b-;b-*	*Hruso* *b- (dʒ-);pʰ-*
insect	*bəw	**bə**:-loŋ	**bi**-lo **~ bi**-luŋ	**bi**-luŋ	**bŭ**-l:u; **bi**-lu (SA)
snake	*bəw	**bə**:	**bəᵘ**	**bʰu** ~ ɲa-**bəᵘ**	**by**
give	*s-bəy-n/k	**bai**	**beⁱ**-na ~ **baⁱ**	**bi** ~ pʰe-**bi ~ biʔ**-ne	**dʒi**-dʒo (SA)
axe	*r-pʷa	**pu**-rud͡ʒin	**pə̆**-lə ~ **pʰə̆**-lu	**b**-lu ~ **bu**-lu	**pʰo**-dʒe

*Table 14. Reflexes of PTB *p-/b-.*

4.3. LOSS OF SYLLABLE-FINAL PLOSIVES.

Syllable-finally, there are few if any occurrences of plosives /k, p, t/. The quality of the vowels preceding lost syllable-finals varies between the languages and their varieties. Western Miji has the most conservative retention of syllable-final plosive /k/.

Gloss	*PTB* **-k*	*Bangru* *-vˀ (-Ø)*	*E. Miji* *-Ø*	*W. Miji* *-Ø (-ʔ/-k)*	*Hruso* *-Ø*
thorn	*m-(d)z(y)u(:)k	kə-**d͡zə̀ˀ**	kʰə-**zau**	gə-**dʒik**	ku-**tʃu** (AA)
sit, stay	*m-(t/d)u(ŋ/k)	**d͡zùˀ**	**-**	deŋra-**dʒuŋ ~ dʒuʔ**	-
eye	*s-myak ⩙ s-mik	me-**jàˀ**	**mẽ**	**mər** ~ **mə**-ri ~ **meʔ**	ʔi-**ɲi**[9]
itch	*m-tsik	kə-**d͡zùˀ**	-	gu-**d͡zu** (SM)	sə-**d͡zu** (SA)
leaf	*rwak	mə-**rɛ̀ˀ**	-	mə-**le** ~ u-**leʔ**	ʔə̆-**xe**; ʃe-**re** (SA)
red	*tsya(k/ŋ)	ja-**t͡ɕòˀ**	mə-**tʃi**	mə-**tʃə** ~ mə-**tʃu** ~ a-**tʃu**	**tʃu**
six	*d-k-ruk	**rɛ̀ˀ**	**ra**(m)	**re**(ʔ)	**xe**; **ri**-jɛ (SA)
bite	*twak	**to**:	**ta**(ʔna)	**tʰai ~ tʰaʔ**	**tʰo**-dʒo
frog	*t(u/i)k	**d͡zə**:	**dʒou**	**dʒou**	ʃe-**dʒa**

*Table 15. Reflexes of PTB *-k.*

There are relatively few examples of the elision of the syllable-final alveolar and bilabial plosives. Elision of syllable-final **–t* appears a strong trigger for diphthongisation of the preceding vowel.

Gloss	*PTB* **-t*	*Bangru* **vˀ (-Ø)*	*E. Miji* *-Ø*	*W. Miji* *-Ø (-ʔ)*	*Hruso* *-Ø*
eight	*b-r-gyat	sə-**gàiˀ**	ɕə-**gə**	tʃi-**gə ~ ɕagə(i)**	ʃə-**gdʒə**
blow	*k/s-mut	**màiˀ**	-	-	-
hand, arm	*k(r)u-t	mə-**gɛ̀iˀ**	**gi**	**gi**	ʔa-**gdʒə**
grind, crush	*kri:t	**ràiˀ**	**-**	**rʲ** (SM)	**ri** (SA)
flower	*b/s-wat	mə-**bua**:	gə-**bo**	u-**boʔ**	ʃo-**ba**

*Table 16. Reflexes of PTB *–t.*

Gloss	*PTB* **-p*	*Bangru* *-Ø (-vˀ)*	*E. Miji* *-Ø/-m*	*W. Miji* *-Ø (-m)*	*Hruso* *-Ø*

[9] Palatalisation **my-* > *ɲ-* in this lexeme is also common in the Western Tani languages (Sun 1993:126).

Gloss	*PTB*	*Bangru*	*E. Miji*	*W. Miji*	*Hruso*
fat (n)	*s-bʷa(m/p)	mə-**ba**:	məm-**bau/bou**	məm-**bau**	ʔə̆-**bi**
cry	*krap	**k(j)e**:	**krəm**-na	**krəm**-na ~ **kʰə̆**	**kʃo**
fireplace	*g-rap	**làʾ**	-	də-**tʰlẹ** (SM)	huk^{h}i-**je** (SA)

*Table 17. Reflexes of PTB *–p.*

4.4. ONSET NASALS.

The syllable-initial**m-* is preserved in the Hrusish languages.

Gloss	*PTB*	*Bangru*	*E. Miji*	*W. Miji*	*Hruso*
	**m-*	*m-*	*m-*	*m-*	*m-*
body hair	*s/r-mul	mə-**məŋ**	-	u-**mu**	(u/i)**mu** (SA)
elder sister	*ma	mə-**mua** ~ a-**ma**:	ʔa-**ma**	a-**mo** ~ a-**mu**	ʔa-**ma**
fire	*mey	**mɛ**:	**mai**	**mai**	**mi**
vomit	*mwa ⩙ mya-n	**mu**:	**-**	**mu** (SM)	-
dream	*r/s-mwəy; OC *C.məŋ-s	tja-**mə**:	ta^{i}-**mat** ~ tai-**mə**-na	tʰe-**me**(-ma) ~ tʰa^{i}-**me(ʔ)**	tʃʰi-**mi**-jo

*Table 18. Preservation of PTB onset nasal *m-.*

A change observed in Bangru and Eastern Miji is the reflex *r-* of Proto-Tibeto-Burman **n-* and, in a single attested case, syllable-initial **ŋ-*. The picture for Western Miji is ambiguous, with in some lexemes preservation of the initial *n-*, in others development into *r-*. The aberrant Bangru entry for 'year' is a probably loan from Nyasang, cf. Proto-Tani *ñiŋ* (Sun 1993) versus the more regular Miji forms.

Gloss	*PTB*	*Bangru*	*E. Miji*	*W. Miji*	*Hruso*
	**n-/*ŋ-*	*r-*	*r-*	*n-/r-*	*ɲ- (n-)*
younger sibling	*na:w	mə-**rə**:	**raŋ ~ rəᵊ**	**nu** ~ ɲa-**nu**	ʔo-**nu**; **ɲiu** (SA)
two	*(g/s)-ni-s	kə-**rɛi**	kə-**ran** ~ kʰe-**rə**	ge-**ni ~ gə-rin**	(kʃə)
near	*s-ney	mə-**rɛ**:	me-**roi**	mə-**ni**	ʔə-**ɲi**-sə
listen, hear	*r/g-na	**rɛi**	**roi**-na	**rei**	-
short	*s-ŋ(i/u)ŋ	mə-**rõŋ**; mə^{31} **ŋoŋ^{55}** (LB)	mə-**ruŋ**	mə-**ruŋ** ~ a **ruŋ**	-
year	*s-ni(:)ŋ	a**nəŋ**nəŋ	də-**raŋ**	du-**re(n)**	-

Table 19. PTB onset nasal n-/ŋ- to Bangru, Eastern and Western Miji r-.

There are a number of noted exceptions to the sound change Proto-Tibeto-Burman **n-* to Bangru and Eastern Miji *r-*, as presented in Table 20. The exact conditions under which this sound change has taken place and its implications for the internal classification of the Hrusish languages remains a subject for future research, but it might be indicative of a sub-grouping of Bangru with Eastern Miji.

Gloss	*PTB* **n-/*ŋ-*	*Bangru* *n-/ɲ-*	*E. Miji* *n-/ɲ-*	*W. Miji* *n-/ɲ-*	*Hruso* *n- (ɲ-)*
ill	*na-(n/t)	**nua ~ noa**	**-**	**no** (SM)	**na** (SA)
mother	*ney ⩕ ni(y)	(mə/a)-**ɲɛ**:	a**ɲe**	a**ɲi** ~ a**nai**	a-**ɲi**
breast; milk	*s-nəw(k/ŋ)	mə-**nəŋ**	mə**naŋ** ~ **nag**	ʃufu-**nu** ~ ʃu-**no**-və	-
2SG	*naŋ	**ni**: ~ **ɲi**:	**ni**	**ni**	-
1SG	*ŋa-y	**ɲo**:	**ɲi**-jaŋ	**ni**-jaŋ ~ **ɲi**-jaŋ; **ɲaŋ** (SM)	**no**

Table 20. Exceptions to PTB onset nasal n-/ŋ- to Bangru, Eastern Miji and Western Miji r-.

4.5. RHYMES WITH FINAL NASALS.

Reflexes of the Proto-Tibeto-Burman syllable-final nasals are mixed. The Proto-Tibeto-Burman final **-ŋ* is commonly preserved in Bangru, as is shown in Tables 36 and 37. Proto-Tibeto-Burman syllable-final *–m* is either elided with nasalisation of the preceding vowel or velarised in Bangru. Miji has preserved syllable-final *-m* as syllable final alveolar or bilabial nasal in a few cases. In Hruso, the syllable-final *-m* has been more widely attested in entries such as *(ʔo)sam* 'daughter' (SA, AA), *mim* 'woman' (SA, AA), *(ʔo)ɲum* 'younger sister' (SA, AA), *ərim* 'tail' (SA), *səm* 'forest (SA), *pum~pom* 'five' (SA, AA) and *kam* 'bitter' (SA).

Gloss	*PTB* **-m*	*Bangru* *-Ø*	*E. Miji* *-ŋ (-Ø/-m)*	*W. Miji* *-n/-ŋ (-Ø)*	*Hruso* *-Ø*
sleep	*g-(d)z(i/u)m	**d͡ʑe**:	**dʒi**(na)	**dʒi**	**dɹu**-mudʒo; **dʒu** (SA)
iron	*syam	**sə̃**:	**-**	**sen** (SM)	**sə** (SA)
otter	*s-ram	**sə̃**:	-	-	si-**ze** (SA)
pillow	*m-k(u/i)m	go-**kɛ̃ĩ**	go-**kəm**	(nu/wo)**kʰən**	di-**kʃo**
egg	*(r/l)um	do:-**rɛiŋ**	do-**riŋ**	do-**ri(ŋ)**	dʒe-**dʒe**
heart	*m-lu(ŋ/m)	mə-**loŋ**-wə:	**luŋ**-vəᵘk ~ **loŋ**-və	**luŋ**-vəᵘk	ʔə̆-**lə̆**-biu

*Table 21. Reflexes of PTB *-m.*

*4.6. REFLEXES OF SONORANTS *L AND *R.*

In onset position, Proto-Tibeto-Burman **l-* generally corresponds with a lateral approximant *l-* in the Hrusish languages.

Gloss	*PTB* **l-*	*Bangru* *l-*	*E. Miji* *l-*	*W. Miji* *l- (ɬ-)*	*Hruso* *l-*
leg	*la	mə-**lɛ̰**:	**lei**	**lai**	əʃi-**lə**-bu (SA)
full	*(p/b)liŋ	**ləŋ**-bəla	**len ~ lən**-daŋ	**lən ~ len ~** pʰi-**ɬaŋ**; o-**lin** (SM)	-
heart	*m-lu(ŋ/m)	mə-**loŋ**-wə:	**luŋ-**vəᵘk ~ loŋ-və	**luŋ-**vəᵘk	ʔə-**lə̆**-biu
month	*s-(g)la	**lùʾ**	**lə**	**lə ~ lu**	-
swallow	*mlyəw-k	pə-**lja ~** pɛ:	-	bə-**l̨ui** (SM)	-
take	*(g/m/s)-lay ≍ (r/s)-ley	**lə**:	**lə**-na	**lə** ~ ho-**ɬə** ~ **ɬəʔ**-ne	**la**-dʒo
sell	*(g/m/s)-lay	**la**:	**laə**-na	**laº**	-

*Table 22. PTB *l– > Bangru l–, Miji l-, Hruso l-.*

In a few instances, the reflex of Proto-Tibeto-Burman **l-* is a trill or fricative in Bangru and Hruso, whereas the Miji reflexes can be a retention of the lateral approximant or change into a trill.

Gloss	*PTB* **l-*	*Bangru* *r-*	*E. Miji* *l- (r-)*	*W. Miji* *l- (r-)*	*Hruso* *r-*
road	*lam	**rɛ**:-bõ	**la**-baŋ	**la**-baŋ ~ **lem**-baŋ	**xa**-bo; **ra**-bo (SA)
bow	*(g/b/m)-la-y	kə-**ràiʾ**	kə̆-**ra**^{i}	gə-**ri ~** g-**ri** ~ kʰi-**ri**	kʰi-**ri**
four	*b-ləy	pu-**ru**-wɛ̃ĩ	pə-**le**^{i}	bə-**le**^{i} **~** b-**li**	psə̆-**xi**; pʰi-**ri** (SA)

*Table 23. PTB *l– > Bangru r–, Miji l- ~ r-, Hruso r- ~ x-.*

In Miji we additionally observe a change from Proto-Tibeto-Burman **l–* to the palatal approximant *j–* and, in a secondary development, to fricatives *ʃ- ~ dʒ-*. Lada Puroik, spoken in the Eastern Miji area, shows a similar development.

Gloss	*PTB* **l-*	*Bangru* *l-*	*E. Miji* *j- (l-)*	*W. Miji* *j- (ʃ-/dʒ-)*	*Hruso* *l-*
heavy	*s-ləy-t	**la**-təŋ	mə-**le**^{i}	mə-**ji**	**liu** (SA)
lift	*laŋ	**lõ(ŋ)**	**jan ~** i-**jaŋ**-na	**jan ~ ʃaŋ**	**lo** (SA)
tongue	*m/s-lay ≍ s-ley	pə-**lja**:	**ja**-kʰe/kʰijo	**dʒa**-kihi ~ **jaʔ**-kʰi	ʔedʒa-b**la**; ze-b**la** (SA)

Gloss	*PTB*	*Bangru*	*E. Miji*	*W. Miji*	*Hruso*
wind	*g-ləy	**loa**	**jo**	**jo**	**lau** (SA)

*Table 24. PTB *l– > Bangru l–, Miji j-, Hruso l-.*

As reflexes of Proto-Tibeto-Burman **r-*, we generally find trill *r-* in Bangru and Miji and the phoneme(s) that has been variably transcribed as ⟨r, x, ɣ, ʁ⟩, in Hruso.

Gloss	*PTB* **r-*	*Bangru* *r-*	*E. Miji* *r-*	*W. Miji* *r-*	*Hruso* *r-/x-*
fight	*ray	wa-**rɛ**:	-	nau-**rj̆** (SM)	tʰo-**ri** (SA)
six	*d-k-ruk	**rɛ̀ʔ**	**ra**(m)	**re**(ʔ)	**xe**; **ri**-jɛ (SA)
grind, crush	*kri:t	**raìˀ**	**-**	**rį̆** (SM)	**ri** (SA)
far	*s-r(i/u)ŋ	a-**rəŋ**	mə-**rən**	ma-**raŋ** ~ a-**rən** ~ mə-**rən**	ʔə-**xə**; ə-**ra** (SA)
fear	*kri(y)	ɲi-**ri**-mɛ̀ˀ	**-**	**rin** (SM)	**ri**-je (SA)
egg	*(r/l)um	do:-**rɛiŋ**	do-**ri(ŋ)**	do-**ri(ŋ)**	-

*Table 25. PTB *r– > Bangru r–, Miji r-, Hruso r-/x-.*

In a few very basic lexemes, reflexes of Proto-Tibeto-Burman **r-* are a retention of *r-* in Bangru and Hruso, but change to *l-* in Western Miji, with ambiguity in Eastern Miji.

Gloss	*PTB* *r-*	*Bangru* *r-*	*E. Miji* *l-/r-*	*W. Miji* *l-*	*Hruso* *r-*
leaf	*rwak	mə-**rjɛ̀ˀ**	-	mə-**le** ~ u-**leʔ**	ʔə̆-**xe**; ʃe-**re** (SA)
salt	*g-ryum	**ru**:	**lə**	**lu**	**xu**; **ru ~ ɣu** (SA)
bone	*m/g/s-rus	mə-**ri**:	ma-**riaŋ**	mi-**liaŋ**	ʔə̆-**xə̆**-be; e-**rə**-bje (SA)

*Table 26. PTB *r– > Bangru, Miji r- ~ l-, Hruso r-/x-.*

4.7. ORIGIN OF HRUSISH FRICATIVES AND AFFRICATES.

Proto-Tibeto-Burman **t͡s-* and **d͡z-* are preserved as affricates *t͡ɕ-/t͡ʃ-* and *d͡ʑ-/d͡ʒ-* in the Hrusish languages. Several examples, such as the entries for 'itch' and 'eat', show a voicing contrast between the reconstructed Proto-Tibeto-Burman forms and the Hrusish reflexes.

Gloss	*PTB* **ts-*	*Bangru* *t͡ɕ-*	*E. Miji* *t͡ʃ-*	*W. Miji* *t͡ʃ-*	*Hruso* *t͡ʃ-*
wing	*g-(t)syəw-k/ŋ	mə-**t͡ɕù**ˀ	-	gə-**t͡ʃi** (SM)	-

Gloss	*PTB* **ts-*	*Bangru* *t͡ɕ-*	*E. Miji* *t͡ʃ-*	*W. Miji* *t͡ʃ-*	*Hruso* *t͡ʃ-*
red	*tsya(k/ŋ)	ja-**t͡ɕòˀ**	mə-**tʃi**	mə-**tʃə** ~ mə-**tʃu** ~ a-**tʃu**	**tʃu**
finger	*(t)s(y)ow	məgɛ-**t͡ɕoa**	gi-**tʃoʔ**	gi-**tʃoʔ**	ʔědʒə-**tʃə**

*Table 27. Reflexes of PTB *(t)s(y)-.*

Gloss	*PTB* **dz-*	*Bangru* *d͡ʑ-/t͡ɕ-*	*E. Miji* *dʒ- (tʃ-)*	*W. Miji* *dʒ-/tʃ-*	*Hruso* *tʃ- (dʒ-/ʃ-)*
hot, warm	*tsa-t ≍ dza-t	i-**t͡ɕòˀ** ~ jə-**t͡ɕòˀ**	mə-**dʒu**	a-**dʒiu** ~ mə-**dʒ(i)u**	**ʃu**; **ʃəu** (SA)
eat	*N-dz(y)a-k/n/t/s	**t͡ɕùˀ ~ t͡ɕèˀ**	**tʃu ~ tʃə**	**tʃu**	**tʃa**
sleep	*g-(d)z(i/u)m	**d͡ʑe**:	**dʒi**-na	**dʒi**	**dɹu**-mudʒo; **dʒu** (SA)
thorn	*m-(d)z(y)u(:)k	kə-**d͡ʑèˀ**	-	gə(**dʒik/dʒu**) ~ bi-**tʃu**	ku-**tʃu**

*Table 28. Reflexes of PTB *(d)z(y).*

Examples of palatalisation and affrication of Proto-Tibeto-Burman **t-* and **d-* can be found in Tables 10 and 11 and include Bangru *d͡ʑəː*, Miji *dʒou*, Hruso *ʃe-dʒa* 'frog' from Proto-Tibeto-Burman *t(u/i)k FROG and Bangru *gə-t͡ɕəŋ*, Miji *dʒuŋ ~ dʒoŋ ~ dʒoʔ*, Hruso *tʃu-dʒu* 'spear' from Proto-Tibeto-Burman *m-duŋ ≍ m-daŋ SPEAR. The examples in Tables 10 and 11 also show that affrication in Miji and Hruso is in an advanced stage compared to Bangru.

4.8. VOWEL REFLEXES.

This section will present the main reflexes of Proto-Tibeto-Burman vowels in the Hrusish languages. These reflexes are summarised in Table 29, equally frequent realisations are after slashes and marginal realisations are between parentheses.

PTB	*Bangru*	*Eastern Miji*	*Western Miji*	*Hruso*	#	*Table #*
*-a	-o (-òˀ)	-	-	-o(u)	4	30
*-a	-u (-ùˀ)	-u (-ə/-u)	-u (-a/-ə/-i)	-u (-a/-ə)	6	31
*-aC	-o/-òˀ/-õ	-u (-aC/-i)	-u (-aC/-ə/-i)	-o/-u (-am)	6	32
*-aC	-a/-àˀ	(-ẽ/-au)	(-ə/-e/-au)	-i (-ə)	5	33
*-aC	-ɛ̀ˀ/-ɛ	-	-eC	-e	3	34
*-aC	-u	-ə	-u	-u	1	35
*-u(C)/-i(C)	-ə(ŋ)	(mixed)	(mixed)	-ə (-u/-a)	9	36
*-u(C)	-u (-uŋ/-oŋ)	-oŋ (-uŋ)	-uŋ (-oŋ)	-u (-ə)	2	37
*u(C)	-i (-ɛ̀ˀ)	(mixed)	(mixed)	(mixed)	3	38
*-iC/-uC	-ɛi(C)/-ai	-ə(C)/-i(C)	-ə(C)/-i	-ə (-u/-o/-i)	8	39

*-əy	-ai (-ɛi/-i)	-ei	-i (-ei)	-i (-ə/-u)	7	40
*-ay/-ey	-ɛ (-aiˀ)	-ai (-oi/-i/-e)	-i (-a/-ai/-e)	-a/-i	8	41
*-əw(C)	-ə(C) (-u/-o)	-ə(C) (-a(C))	-ə (-u/-i/-əu)	-ə (-a/-y)	6	42
*-aw/-ow	-o/-u	(-ou/-i)	(-oʔ/-ə/-u(C))	(-uo)	3	43

Table 29. Summary of reflexes of monophthong and diphthong vowels.

Sun (1993: 378) earlier reported a change from the Proto-Tibeto-Burman vowel **-a* to vowel *-u* in open syllables for Miji. The data indicate that whereas this observation generally holds for Miji, the Bangru picture partially reflects the Tani reflex *–o* (Sun 1993: 308), and Hruso shows even more diverse reflexes.

Gloss	*PTB* **-a*	*Bangru* *-o (-òˀ)*	*Miji*	*Hruso* *-o(u)*
1SG	*ŋa-y ⩙ *ka	**ŋo**:	-	**no**
hard	*s-ra	mə-**lo**:	-	go-**ɣou** ~ go-**rou** (SA)
nose	*ka ⩙ *ŋa	mi-**ko**: ~ məŋə-**ko**:	-	-
penis	*la	mə-**lòˀ**	-	-

*Table 30. PTB *-a to Bangru –o.*

Gloss	*PTB* **-a*	*Bangru* *-u (-ùˀ)*	*E. Miji* *-u (-ə/-i)*	*W. Miji* *-u (-ɑ/-ə/-i)*	*Hruso* *(-u/-ɑ/-ə/-o)*
month	*s-(g)la	**lùˀ**	**lə**	**lə ~ lu**	-
neg. imp.	*(t/d)a	**tu-**	**-**	**tʰa**- (SM)	**d͡ʒu**- (SA)
vomit	*mwa ⩙ mya-n	**mu**:	**-**	**mu** (SM)	-
five	*l/b-ŋa	pə-**ŋu**:	pu-**ŋu**	bu-**ŋu** ~ bo-**ŋu** ~ pu-**gu**	p**om** ~ p**um** (SA)
eat	*N-dz(y)a-k/n/t/s	**t͡ɕùˀ**	**tʃu ~ tʃə**	**tʃu**	**tʃa**
meat	*sya-n	**sùˀ ~ ɕùˀ**	**si**-kijuŋ	**ʃi**-t͡ʃuŋ	**tsə** ~ **sə** (SA)

*Table 31. PTB *-a to Bangru –u.*

In closed syllables the reflexes of the Proto-Tibeto-Burman vowel **-a* are mixed and apparently independent of phonotactic conditions, resulting in *–o, -a, -ɛ* and even *–u*. Similar variation is also observed in Miji and Hruso.

Gloss	*PTB* **-aC*	*Bangru* *-o/-òˀ/-õ*	*E. Miji* *-u (-aC/-i)*	*W. Miji* *-u (-aC/-ə/-i)*	*Hruso* *-o/-u (-aC)*
bite	*twak	**to**:	**ta**(ʔna)	**tʰai ~ tʰaʔ**	**tʰo**-dʒo
bitter	*b-ka-(n/m/ŋ)	kə-**kjo**:	mə-**kʰu**	a/mə-**kʰu**	**kam**-ʃo
hot, warm	*tsa-t ⩙ dza-t	i-**t͡ɕòˀ** ~ jə-**t͡ɕòˀ**	mə-**dʒu**	a-**dʒiu** ~ mə-**dʒ(i)u**	**ʃu**
red	*tsya(k/ŋ)	ja-**t͡ɕòˀ**	mə-**tʃi**	mə-**tʃə** ~ mə-**tʃu** ~ a-**tʃu**	**tʃu**
look; see	*kaŋ	**gõ**:	**gaŋ**-na	**waŋ**	**ho**-dʒo

Gloss	*PTB*	*Bangru*	*E. Miji*	*W. Miji*	*Hruso*
lift	*laŋ	**lõ(ŋ)**	**jan** ~ i-**jaŋ**-na	**jan** ~ **ʃaŋ**	**lo** (SA)

*Table 32. PTB *-aC to Bangru –o.*

Gloss	*PTB* **aC*	*Bangru* *-a/-àˀ*	*E. Miji* *(-ẽ/-au)*	*W. Miji* *(-eC/-au/-ə)*	*Hruso* *-i (-ə)*
eye	*s-myak	me-**jàˀ**	**mẽ**	**mə**-ri ~ **meʔ**	ʔi-**ɲi**
fat (n)	*s-bʷa(m/p)	mə-**ba**:	məm-**bau**	məm-**bau**	ʔə̆-**bi**
fireplace	*g-rap	**làˀ**	-	də-**tʰlẹ** (SM)	-
flow	*sywar ≍ *g/b-sywa-n/t	**sa**:	-	-	-
louse	*s(y)ar	**sàˀ**	-	-	**ʃə** (SA)

*Table 33. PTB *-aC to Bangru -a.*

Gloss	*PTB* **aC*	*Bangru* *-ɛ̀ˀ/-ɛ*	*E. Miji* *-*	*W. Miji* *-e(C)*	*Hruso* *-e*
split	*pryak	**prɛ**:	-	-	-
leech	*k-r-pʷat	lə-**wɛ̀ˀ**	-	də-**vẹ** (SM)	-
leaf	*rwak	mə-**rjɛ̀ˀ**	-	mə-**le** ~ u-**leʔ**	ʔə̆-**xe**; ʃe-**re** (SA)

*Table 34. PTB *-aC to Bangru -ɛ.*

Gloss	*PTB* *-aC*	*Bangru* *-u*	*E. Miji* *-ə*	*W. Miji* *-u*	*Hruso* *-u*
tooth	*twaŋ	mə-**tu**:	**tə**	**tʰu ~ tu**	ʔe-**tʰu** ~ ə-**t͡ʃu** (SA)

*Table 35. PTB *-aC to Bangru -u.*

In general, PTB **-u(C)* and **-i(C)* are reduced in Bangru to *-ə(ŋ)*. The reflexes for Miji and Hruso are far less consistent.

Gloss	*PTB* **-u(C)/-i(C)*	*Bangru* *-ə(ŋ)*	*E. Miji* *(mixed)*	*W. Miji* *(mixed)*	*Hruso* *-ə (-u/-a)*
spear	*m-duŋ ≍ m-daŋ	gə-**t͡ɕəŋ**	**dʒoŋ ~ dʒoʔ**	**dʒuŋ**	tʃu-**dʒu**
body hair, feather	*s/r-mul	mə-**məŋ**	-	u-**mu**	-
frog	*t(u/i)k	**d͡ʒə**:	**dʒou**	**dʒou**	ʃe**dʒa**
vagina	*tsyuk	mə-**t͡ʃàˀ**	-	-	-
hair (head)	*s-pu	gə-**pə**:	go**pal** ~ go**pə**	wo-**pʰijo** ~ u-**pʰiᵘ**	-
live, grow up	*s-riŋ	**səŋ**	**-**	**ʃən** (SM)	ə-**ʃə** (SA)

Gloss	*PTB* **-u(C)/-i(C)*	*Bangru* *-ə(ŋ)*	*E. Miji* *(mixed)*	*W. Miji* *(mixed)*	*Hruso* *-ə (-u/-ɑ)*
far	*s-r(i/u)ŋ	a-**rəŋ**	mə-**rən**	ma-**raŋ** ~ a-**rən** ~ mə-**rən**	ʔə-**xə**; ə-**ra** (SA)
full	*(p/b)liŋ	**ləŋ**-bəla	**len** ~ **lən**-daŋ	**lən** ~ **len** ~ pʰi-**ɬaŋ**; o-**lin** (SM)	-
name	*r-mi(ŋ/n)	mə-**mjəŋ**	**mə̃rn**	**mə̃rn**	ʔəɲə-**ɲə**; ʔaɲi-**ɲi** (SA)

*Table 36. Reflexes of PTB rhyme *-u(C) and *-i(C).*

There are a number of noted exceptions to this rule, in which PTB **-u(C)* corresponds to Bangru *–u*, *-oŋ* or *–uŋ*.

Gloss	*PTB* **-u(C)*	*Bangru* *-u (-uŋ/-oŋ)*	*E. Miji* *-oŋ (-uŋ)*	*W. Miji* *-uŋ (-oŋ)*	*Hruso* *-u (-ə)*
drink	*N/s-**tuŋ**	**toŋ** ~ **tuŋ**	**toŋ**na ~ **tʰoŋ**	**tʰoŋ** ~ **tʰuŋ** (SM)	**tʰu**-dʒo
heart	*m-**lu(ŋ/m)**	mə-**loŋ**-wə:	**luŋ**-vəᵘk ~ **loŋ**-və	**luŋ**-vəᵘk	ʔə̆-**lə̆**-biu
child	*m-**(t/d)u**	mə-**d͡ʒu**:	-	-	-
guts	*r-**gyu**-ŋ	mə-lə-**gu**:	-	-	-
white	***plu**	lə**pu**:	-	-	-

*Table 37. PTB *-u(C) to Bangru -u (-uŋ/-oŋ).*

Additional exceptions include the ones in Table 38.

Gloss	*PTB* **u(C)*	*Bangru* *-i (-è²)*	*E. Miji* *(mixed)*	*W. Miji* *(mixed)*	*Hruso* *(mixed)*
bone	*s/m/g-r**u**s	mə-**ri**:	ma-**riaŋ**	mi-**liaŋ**	ʔə̆-**xə̆**-be; e-**rə**-bje (SA)
who	*s**u**	**ti**:wo	**təə**	**tʃʰu**	**d͡ʒu**
six	*d-k-**ruk**	**rè²**	**ra**(m)	**re**(ʔ)	**xe**; **rijɛ** (SA)

*Table 38. Exceptions to the reflexes of PTB rhyme *-u(C).*

Furthermore, as Table 39 shows, Proto-Tibeto-Burman vowels **-i* and **-u* followed by a syllable final alveolar fricative, stop or nasal or bilabial nasal correspond with diphthongs in modern Bangru, a uniquely Bangru development not shared by Miji or Hruso. Proto-Tibeto-Burman nasal coda **-n/-ŋ* commonly results in nasalisation of the diphthong, and elision of final alveolar plosive *–t* resulted in falling pitch and glottal stop. One exception is the reflex of the Proto-Tibeto-Burman root SLEEP **g-(d)z(i/u)m*, Bangru *d͡ʒe:*, Miji *d͡ʒi*, Hruso *dɹu* ~ *d͡ʒu* shown in Table 21, perhaps as a result of allophamic variation between root

#127 **s-y(i/u)p* and #128 **g-(d)z(i/u)m*. The Bangru and Miji reflexes of Proto-Tibeto-Burman **bi-ŋ* GOAT, Bangru *sə-pɛ̃ĩ̃*, Eastern Miji *ʃə-pen ~ ɛu-prem*, Western Miji *ʧe-prem ~ ʃə-pʰărən*, strongly suggest a Proto-Tibeto-Burman root with syllable-final biliabial nasal **bi-m*.

Gloss	*PTB* **-iC/-uC*	*Bangru* *-ɛi(C)/-ai*	*E. Miji* *-ə(C)/-i(C)*	*W. Miji* *-ə(C)/-i*	*Hruso* *-ə (-u/-o/-i)*
egg	*(r/l)um	do:-**rɛiŋ**	do-**riŋ**	do-**ri(ŋ)**	-
pillow	*m-k(u/i)m	go:-**kɛ̃ĩ̃**	go-**kəm**	(nu/wo)**kʰən**	di-**kʃo**
three	*g-sum	kə-**tɛ̃ĩ̃**	kʰə-**təm**	gə-**tən** ~ kə-**tʰən** ~ kʰə-**təm**	**dʒə**
liver	*m-sin	mə-**tɛ̃ĩ̃**	-	mə-**tʰən** (SM)	ĕ-**djŭ** (SA)
blow	*k/s-mut	**màìˀ**	-	-	-
grind, crush	*kri:t	**ràìˀ**	-	**rį̀** (SM)	**ri** (SA)
hand, arm	*k(r)u-t	mə-**gèìˀ**	**gi**	**gi**	ʔa-**gdʒə**
two	*(g/s)-ni-s	kə-**rɛi**	kʰe-**rə**	gə-**rin ~** ge-**ni**	**kʃə**

*Table 39. Diphthongisation of PTB vowels *i and *u in Bangru.*

Bangru shares the Tani development of Proto-Tibeto-Burman diphthong **-əy* to monophthong vowel *–i* in two lexemes, but like Eastern Miji has most commonly preserved a diphthong vowel. Western Miji and Hruso have generally monophthongised to vowel *–i*.

Gloss	*PTB* *-əy*	*Bangru* *-ai (-ɛi/-i)*	*E. Miji* *-ei*	*W. Miji* *-i (-ei)*	*Hruso* *-i (-ə/-u)*
think	*məy	**mi**:	-	**mjen** (SM)	-
rain	*m-t(w)əy(n)	nə-**di**:	-	-	ɲe-**d͡zə**-ʃi (SA)
give	*s-bəy-n/k	**bai**	**ba^{i} ~ be^{i}**-na	pʰe-**bi ~ bi ~ biʔ**-ne	**dʒi**-dʒo
four	*b-ləy	pu-**ruwɛ̃ĩ̃**	pə-**le^{i}**	bə-**le^{i} ~ bli**	psə̆-**xi** ~ pʰi-**ri** (SA)
rub	*sywəy	pə-**sɛi**	-	-	-
excrement	*kləy	**lai**	-	-	-
die	*səy	**tai**	**tei**-na	**ʧi**	**dʒu**; **d͡zi** (SA)

*Table 40. Reflexes of PTB diphthong *-əy.*

In general, the reflex of Proto-Tibeto-Burman diphthongs **-ay* and **-ey* is Bangru **-(j)ɛː*, though this is probably a secondary development from *–ai*, as illustrated by the noted exception 'bow'. The common Hruso and Western Miji reflexes of **-ay* is *–a,* and of **-ey* is *–i*, whilst Eastern Miji tends to reflect the diphthongs.

Gloss	*PTB* **-ay/-ey*	*Bangru* *-ɛ (-aiˀ)*	*E. Miji* *-ai (-oi/-i/-e)*	*W. Miji* *-i (-a/-ai/-e)*	*Hruso* *-a/-i*

Gloss	*PTB*	*Bangru*	*E. Miji*	*W. Miji*	*Hruso*
make; do	*day	dja ~ **dɛ**:	-	-	**d̪a**-dʒo
bow	*(g/b/m)-la-y	kə-**rài˒**	kə̆-**ra**^{i}	ge-**ri** ~ k^{h}i-**ri**	k^{h}i-**ri**
fight	*ray	wa-**rɛ**:	-	nau-**rị** (SM)	t^{h}o-**ri** (SA)
tongue	*m/s-lay ⩙ s-ley	pə-**ljɛ**:	**ja(**-k^{h}e/k^{h}ijo^{i})	**dʒa**-kihi ~ **ja˒**-k^{h}i	ʔedʒa-**bla**
fire	*mey	**mɛ**:	**mai**	**mai**	**mi**
seed	*sey	mə-**tɛ̃**:	**ta**^{i}-lo^{i}	**t^{h}e**-li ~ **t^{h}e**-dʒo	-
near	*s-ney	mə-**rɛ**:	mə-**ro**^{i}	mə-**ni** ~ a-**ɲiŋ**	ʔə-**ɲi**-sə
mother	*ney ⩙ ni(y)	(mə/a)**nɛ**:	a-**ɲe**	a-**nai ~ a-ɲi**	a-**ɲi**

*Table 41. Reflexes of PTB diphthongs *-ay and *-ey.*

Proto-Tibeto-Burman diphthong **-əw* usually corresponds to Bangru *-ə*, but marginally vowels *–u* and *–o* also occur, a development mirrored in Hruso and Miji.

Gloss	*PTB* *-əw*	*Bangru* *-ə(C) (-u/-o)*	*E. Miji* *-ə(C) (-ɑ(C))*	*W. Miji* *-ə (-u/-i/-əu)*	*Hruso* *-ə (-ɑ/-y)*
breast; milk	*s-nəw(k/ŋ)	mə-**nəŋ**	mə**naŋ** ~ **nag**	ʃufu-**nu** ~ ʃu-**no**-və	-
steal	*r-kəw	lə-**kə**:	tʃə-**k^{h}ə**-na ~ ʃi-**k^{h}a^{u}**	tʃi/tʃə-**k^{h}ə** ~ tʃi-**k^{h}u**	**kʃa**-t͡ʃudʒo; t͡sa-**k͡sə** (SA)
smoke	*kəw-n/t	mɛ-**kə**:	ma^{i}-**k^{h}ən**	ma^{i}-**k^{h}ən**	mŭ-**kʃə**
snake	*bəw	**bə**:	**bə^{u}**	(ɲa-)**bəu** ~ **b^{h}u**	**by**
wing	*g-(t)syəw-k/ŋ	mə-**t͡ɕù˒**	-	gə-**t͡ʃi** (SM)	-
elder brother	*(g/k)əw-n	a-**ko**:	**kə**-vo^{i}	a-**k^{h}ə**-vo ~ a-**ke**-vo ~ **k^{h}ə**-voʔ	-

*Table 42. Reflexes of PTB diphthong *-əw.*

Proto-Tibeto-Burman diphthong **-aw* (**-ow*) generally corresponds to Bangru simple vowels *–u/-o*.

Gloss	*PTB* **-aw/*-ow*	*Bangru* *-o (-u)*	*E. Miji* *(-ou/-i)*	*W. Miji* *(-o(ʔ)/-ə/-uC)*	*Hruso* *(-uo)*
lick	*s-lya:w	kə-**lo**:	-	-	-
bird	*daw OR *dow	pə-**d͡ʑu**:	bə-**dʒi**	bə-**dʒə** ~ bu-**dʒuʔ**	-
chicken	*daw OR *dow	**do**:	**dou**	**dok ~ doʔ ~ dup**	**dʒuo**

*Table 43. Simplification of PTB diphthongs *-aw and *-ow.*

5. LEXICAL ISOGLOSSES

On basis of our current understanding of the phonology of Bangru and the sound changes from Proto-Tibeto-Burman to Bangru, we were able to identify satisfactory etymologies in almost 50% of the lexical entries. For the remaining 50%, in quite a number of cases we found cognates of Bangru with other regional reconstructed proto-languages, presented in section 5.1. In section 5.2, we present some isoglosses with reconstructed proto-languages that also exhibit the Proto-Tibeto-Burman **s-* to *t-* change. A small but still significant number of Bangru forms appears to have Hrusish cognates but no, or only scattered, cognates in other languages, presented in section 5.3. For want of space, most of the supporting data can be found in the appendices B and C. Wherever possible, we have made a first preliminary attempt at reconstructing Proto-Hrusish forms, based on our Bangru data and the comparative Miji and Hruso data and the observations in the previous section.

5.1. ISOGLOSSES WITH NEIGHBOURING LANGUAGES

The influence of the Western Tani language Nyasang is clearly reflected in Bangru. The table in appendix B presents a summary of some of the most obvious Nyasang loans in Bangru. Despite these loans, a large proportion of the Bangru vocabulary remains distinctly non-Tani. Illustrative of this is perhaps the fact that there are very few correspondences between the fifty 'characteristic Tani roots' presented by Sun (1993: 430) and Bangru, and borrowing of these cannot be excluded. In fact, for the vast majority of these fifty items, Bangru shows perfectly regular reflexes of Proto-Tibeto-Burman roots. Puroik appears to be another important contact and/or substrate language for Bangru, with around 50 shared lexical isoglosses between the two languages. Most of these are reflexes of a shared Proto-Tibeto-Burman root. Table 44 presents some Proto-Hrusish reconstructions[10] together with possible isoglosses in languages spoken in the immediate vicinity of the Hrusish languages. The complete set of underlying data can be found in Appendix C.

Entry	*Bangru/Miji/Hruso*	*PH*	*Other proto-forms, isoglosses*
sun	d͡ʑùˀ/dʒoʔ/dʒu	*d͡ʑuʔ	Bokar duŋ-ñi, Bengni do:-ñi (PT)
paddy rice	ˀɛ̃:/en~an/ʔo	*an	PT *am-bɯn RICE (UNCOOKED); Rawang am^{33} (LP)
woman	ɲəwɛ:/nəmraʲ/-	*nə-mə-raj	-
soil	nòˀ/naʔ/no	*naʔ	PT *mroŋ; Bengni ño:; BG ɲak̚; SS kʰnɔ̃ ~ kʰnũ:

[10] These reconstructions reflect the most likely form at the Proto-Hrusish level, based on the sound correspondences between Proto-Tibeto-Burman and Bangru and internal sound correspondences. Indeterminate consonants are indicated by C, indeterminate nasal by N, indeterminate vowels by V.

Entry	*Bangru/Miji/Hruso*	*PH*	*Other proto-forms, isoglosses*
long	məpaŋ/məpijaŋ/pʃu	*mə-pjaŋ	PK apɹaŋ; BG əpʰjaŋ
deep	mərju:/arək~mərə~məruʔ~marik/rju	*mə-ruk	PT *rɯŋ; PKC *ruak EMPTY; SS ʾaruk ‘empty’
ten	rəŋ/lən/xə	*rəŋ	PT *rjɯŋ; PTk *ra
hundred	ləŋ/bəluŋ/pʰuɣu	*bə-luŋ	PT *lɯŋ; also Koro pələ (AK)
do	ru:/ru/-	*ru	PT rjɯ; PNN *rə:y; BG rjɛt; SS ra(t/ʔ) ~ rɛ(t/ʔ); Nyasang ri; Bengni rji
cut	tɛ/tʰaʲ(ne)~taʲ-na/d͡ʒɛ ~ dʒo-jo	*taj	PTk *tat; PT *tək; TS tok; Kayan tʰài ‘cut surface, plough’ (MK)
friend	mədz͡ua/mədʒo~madʒro~adʒo/ʔodʒo	*mə-dz͡oʔ	PT *ǰ(o/u)n ~ *ǰen; PR a-dua
house	ne:/ɲan~nam~ɲe~ɲeon/ɲe	*nam	PTB #5746 *nam VILLAGE; Galo namə (GLDC 09 Galo); Koro ɲe (AK); Baram nam (Kansakar 2010) ‘house’
take	lə:/lə~ɬə/la	*lə	PT *laŋ; PKC *laa-I, laak-II; TS la; KD la; PK lei~rei.
excrete, defecate	(lai)t͡ɕai/-/t͡si	*t͡səj	PKC *tseʔ; TS, KD t͡ʃʰɛt; BG t͡se:; SS t͡ɕʰa: ~ tɕʰɔ̃:
waterfall	kuase(ŋ)/-/k͡sət͡su	*kua-suʔ	PK kuasuaʔ
ant	səɲi:/ʃiŋiŋ~ɕəɲi/siŋi	*si-ni	Bugun ɕiŋiŋ
road	rɛ:bõ/labaŋ~lembaŋ/xabo	*lam-baŋ	Apatani lem-bo (PT); TM lemdaŋ
younger sibling	mərə:/rə~nu~ɲanu/ʔonu	*mə-nuŋ	SS miriŋ ‘younger sister of man’
salt	ru:/lə~lu/ru	*lu	PT lo, Nyishi a-lu
this	həŋ/huŋlo~huŋji~hə̃ŋaʲ/heji~ho	*huŋ	PK həŋ; Galo ‘hi (GLDC)

Table 44. Lexical isoglosses with neighbouring languages.

5.2. ISOGLOSSES WITH OTHER NORTHEAST INDIAN LANGUAGES

Some of the lexemes for which we did not find reconstructed Proto-Tibeto-Burman roots have cognates in the Kuki-Chin, Tangkhulic and Central Naga languages. These isoglosses deserve extra attention because they have reconstructed proto-forms and these languages share the Proto-Tibeto-Burman **s-* to *t-* change, and might be further evidence of a larger genetic sub-grouping of Tibeto-Burman languages in Northeast India.

Entry	*Bangru/Miji/Hruso*	*PH*	*Proto-forms, cognates*
knife	wɛ:t͡səŋ/vaʲt͡ʃoŋʒi/vetsə	*vaj-t͡suŋ	PKC *tsem

Entry	*Bangru/Miji/Hruso*	*PH*	*Proto-forms, cognates*
cloud	waːwəː/mimu ~ mʲemy ~ maʲmaŋ ~ maʲmər/məmə	*maj-məwŋ	PKC *may; PT *m(ə/u)k; PTk *moj
where	kəː/kʰəjo~kʰija~kʰək~kʰroʲ/hagə	*kəʔ	PKC *koy ⩙ khoy ⩙ hoy
spicy	səː/məʃu ~ məʃiu/nəʃə ~ nəsə	*mə-su	PTk *sa
sweet	d͡ʑaŋ/mezaŋ~adʒaŋ~mədʒan~ mədʒaŋ~ mədʒijaŋ/dʃə̆mtʃu	*mə-jaŋ	PCN *a-m-jaŋ; BG pʰijaŋ
snow	tərɛ̃ː/dəlen/-	*də-ren	PCN *rə(ʔ) ICE / SNOW
boil (water)	luː/-/lusu~xuʃəʃə	*lu	PCN *m-lu

Table 45. Lexical isoglosses with Northeast Indian languages.

5.3. HRUSISH LEXICAL ISOGLOSSES.

Finally, there are a number of lexical forms shared between Bangru and at least one of the other Hrusish languages for which we could find only a few isolated cognates or no cognates at all elsewhere. Lack of data from many other Tibeto-Burman languages is probably a major cause, but perhaps some lexemes represent unique Hrusish lexical isoglosses. Full data are again available in appendix C.

Entry	*Bangru/Miji/Hruso*	*PH*	*Cognates*
with (together)	d͡ʑərə/dʒoru/-dʒa	*d͡ʑVru	
awake	piː/pʰrəu/pʰi	*pri	
bee	màìˀ/maʲ~miʔ~meʲ/mə̆dʒəd̪u	*majk	
garlic, onion	jəkɛ̃ĩ/kʰjomu~kəmoŋ~pəkʰemu ~kʰikmo~kiomu/sukum	*kik-muŋ	
straight	məkəroː/mugəraŋ/gədou	*mə-gə-raŋ	PTB #2160 (p/b)lyaŋʔ
new	məkərəː/məkərə~məgəniu~ agənu/ʔə̆kə̆n	*mə-gə-nu	
seven	məwàìˀ/mija(k)/mɹo~mrjo	*mə-ljak	BG məlijaː
nine	sətəŋ/sətən/sṯə	*sə-tiŋ	
cloth	gìˀ/grə/gije	*gi-le	Koro gile (AK)
ring (finger-)	gəleˀ/gile~gilan/gzə͡tsəlje	*gə-leC	Koro lale (AK)
light	lətõː/malətʰaŋ~mədətʰaŋ~ mənətaŋ~alitʰaŋ/lə̆to	*mə-lə-taŋ	
spittle	jèˀ/ʒe̯/-	*jeʔ	
(swidden) field	waː/vaw/-	*wa	
door	nepãĩ/banpi~banpʰik~vapʰi/-	*piŋ	BG haːpiŋ
broom	sjaː/naʃi~nesi~namʃoʲ~ namɕoirə/ɲeso	*(nam)sjaj	
yesterday	təgaː/degau~təga/-	*də-gaC	
day	ˀagu:/hũe/-	*ga	
what	təŋ/tan~tən~tʰen~tin/-	*tiŋ	SS *ti
how many	kəɲəruː/kəɲo/kʰəɲa	*kə-na	

Entry	*Bangru/Miji/Hruso*	*PH*	*Cognates*
dry	məki:/akʰijaŋ~məkʰəjam~ mekʰijan/kɹo	*mə-ki-laŋ	
short	mərõŋ/məruŋ~aruŋ/udu	*mə-nuŋ	
old	məɕua:/məʃoʔ~aʃoʔ/ʔăme	*mə-ɕoʔ	
thigh	məru:/lu̯/-	*mə-lu	TS lum
sky	ɲədəlu:/gijaŋ~(na)dʒang/ medzə~ɲə͡dzə	*nə-də-laŋ	
vegetable	pe:/pʰen/pʰijɛ	*pen	
night	nəga:/d͡ʒaŋgau~geŋgau/ɲegi	*nə-gaC	
2PL	d͡ʑe:/d͡ʒi/d͡ʒo	*d͡ʑV	
cook	ku:/kʰu~kə~kʰəne/kʰu	*ku	
aconite	nəpɔ̃/nəpʰaŋ/-	*nə-paŋ	
horn	məsu/məʃuʃoŋ/ʔəʃəbd͡ʒa	*mə-su	
that	pɛt͡ɕi/pait͡ʃəlo/-	*paj-t͡ɕi	
know	ni:/nina~nĭ~ŋintʃina~nintʃe/-	*ni	
dirty	ɲət͡ʃi/nɪt͡ʃi/ɲit͡s	*ni-t͡ɕi	
liquor	t͡ɕi:/-/t͡ʃə	*t͡ɕi	
mortar	ləra:/dəlo/rulu	*lu-lV	
pestle	pəla:/bəlau/-	*bə-laC	
fish	t͡sət͡səmɛ:/tri~tʰri~tʃoʲ/tʃʰe	*trV	
wood	go:/u~go/ʃo	*(g)o	
laugh	tua/tʰo~tona/tʃʰəjo	*toC	
speak	te:/ta/tʃʰedʒo	*təwC	OC taw-s; Kayan tài (MK); Burmese tãi[22] (TBL)
root	məkɛ̃ĭ/(go)kʰrən~məkʰən~ okʰriŋ/ʔăkʃe	*mə-kriŋ	
stand	gi:/gijon~gəroŋ/gudʒu	*gu	
walk	dja:/dai/dʒu	*daj	TS dɪ; Dulong di[53] (TBL)
pig	jùˀ/dʒo(ʔ)~dʒio~dʒuo/-	*jowʔ	
water	wi:/və/-	*wi	Guiqiong wi[53] (ZM); Jiulong Pumi wi[35] (TBL)
tell	t͡ɕàtə/tʃo~tʃoana~tʃua~tʰe/tru	*t͡ɕaC	
bad	mənɛ̃ĭ(ŋ)/məni~məɲi~aɲirə/ma[u]	*mə-niŋ	
few	mi:gəmɛ/mija~meʔ/meʔ	*mejʔ	

Table 46. Possible Hrusish lexical isoglosses.

6. CONCLUSIONS

In Table 5 we presented a summary of the main sound changes that we have hitherto identified for the Proto-Tibeto-Burman consonants. Similarly, Table 29 presents the main reflexes of Proto-Tibeto-Burman monophthong and diphthong vowels. Although none of these individual sound changes can be considered

unique to the Hrusish cluster within the Tibeto-Burman language family, the combination of these individual sound changes is a strong indication for a shared phonological history of these individual linguistic varieties.

The Proto-Tibeto-Burman **s-* to Hrusish *t-* change is not unique in the Tibeto-Burman language family and has been attested for the Kuki-Chin, Bodo-Garo, Central Naga and Tangkhulic languages as well as Karbi. But none of the surrounding languages such as the Tani languages, the Kho-Bwa languages and the Bodic languages have participated in this sound change. In the surrounding Tani and Kho-Bwa languages, syllable-final plosives are generally preserved, whereas the Hrusish languages exhibit a strong tendency towards open syllables. Similarly, the Tani and Bodo-Garo languages and the Kho-Bwa languages Puroik, Khispi and Duhumbi preserve syllable-final nasal consonants, whereas the Hrusish languages exhibit a tendency for weakening or loss of syllable-final nasals, with as noted exception the velar nasal. The phonological development from Proto-Tibeto-Burman **n-* to *r-* observed in a number of Hrusish lexemes is only shared to some extent by Eastern Puroik. Miji and Lada Puroik share the phonological change from Proto-Tibeto-Burman *l-* to *j-* in a small number of lexemes. This development has not been observed in Bangru or Hruso and neither in the Tani languages or other Puroik varieties. The consistent loss of Proto-Tibeto-Burman syllable-final **–l* and **–r* in the Hrusish languages differentiates these languages from the neigbouring Tani languages, which have preserved these consonants in coda position.

Miji has rather consistent reflex *–u* of Proto-Tibeto-Burman **–a* in open syllables, whereas Bangru shows alternation with the outcome *–o*, also observed in the Tani languages. The Kho-Bwa languages generally preserve the Proto-Tibeto-Burman syllable-final **–a*. Unlike Miji and Hruso, Bangru has diphthong reflexes of the Proto-Tibeto-Burman syllable-final consonants **–iC* and *–uC*.

Our data thus present additional evidence for Sun's 1993 assumption that Bangru's closest genetic relatives are the languages of Shafer's 'Hruso', i.e. Miji and Hruso. Possible substrate languages, lexical and phonological innovations and borrowing from contact languages have long masked the affiliation of this cluster. The phonological aberrance of particularly Hruso was already noticed by Shafer (1947: 184) who commented that

"…dialect A [Miji] (...) is considerably more archaic than dialect B [Hruso]…"

The present paper also indicates that a considerable number of lexemes in the Hrusish languages do not fit well with hitherto reconstructed Proto-Tibeto-Burman roots. A fair number of these lexemes reconstructs well at the Proto-Hrusish level and there are also a number of regional cognates for these reconstructed roots. This might contribute to the reconstruction of additional roots

for Proto-Tibeto-Burman and will be an interesting, if not challenging subject for future research.

Although most Bangru speakers are convinced of the continued viability of their language, the survival of Bangru is threatened by the rapid spread of Nyasang as the locally and regionally dominant language. In mixed Bangru-Nyasang households, Nyasang often becomes the mother tongue of the children, who might not have more than a passive command of Bangru. Outside the household, Hindi and Nyishi are the languages of communication, and the role of Nyishi is strengthened by the rapid spread of various Christian denominations in the area, for whom Nyishi is the liturgical language. Hopefully, this description will encourage other linguists to write a comprehensive descriptive grammar of the language, for which we would gladly make our data and analyses available.

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APPENDICES

APPENDIX A: LIST OF GLOSSES AND ABBREVIATIONS TO SECONDARY SOURCES.

From own data:

BG: Bugun
KD: Khispi & Duhumbi
NY: Nyasang/Nyishi
PK: Puroik
SS: Sartang & Sherdukpen
TM: Tawang Monket
TS: Tshangla
WT: Written Tibetan

From secondary data:

AA: Abraham et al. (2005) Hruso Aka
ABN: Abraham (2005) Nyishi
AE: Abraham et al. (2005) 'Eastern' Miji
AK: Abraham et al. (2005) Koro Aka
AS: Shafer (1947) Aka
AW: Abraham et al. (2005) 'Western' Miji
OC: Baxter Sagart (2014) Old Chinese
GL: GLDC (2009) Galo
LB: Li (2003) Bangru
LP: LaPolla 2003
MK: Manson (2010) Kayan
PBG: Joseph and Burling (2006) Proto-Bodo-Garo
PCN: Bruhn (2014) Proto-Central-Naga
PKC: VanBik (2009) Proto-Kuki-

Chin
PNN: French (1983) Proto-Northern Naga
PT: Sun (1993) Proto-Tani
PTB: Proto Tibeto-Burman STEDT
PTk: Mortensen 2012 Proto-Tangkhulic
SA: Simon (1993 [1970]) Hruso Aka
SH: Shafer (1947) Hruso Aka
SM: Simon (1979) 'Western' Miji
TBL: Sun (1991) Tibeto-Burman lexicon
ZM: Sun (1991) Tibeto-Burman

Guide to transcription of Simon (1979): th = [θ~tʰ], dh = [ð~dʰ], ng = [ŋ], ñ = [ɲ], zh = [ʒ], ts = [t͡s], dz = [d͡z], sh = [ʃ], tsh = [t͡sʰ], c = [t͡ʃ], ch = [t͡ʃʰ], j= [d͡ʒ], hl = [ɬ], ll = [ɭ], -h = ʔ, aw = [au], iw = [iu], y = [j].
Guide to transcription of Simon (1993 [1970]): hh = [x], gh = [ɣ], ny = [ɲ], ng = [ŋ] or vng = ṽ, í = [ə], sh = [ʃ], zh = [ʒ], ú = [y], j = [d͡ʒ], c = [t͡ʃ], ch = [t͡ʃʰ], ts= [t͡s], dz = [d͡z], ks = [k͡s], gz = [g͡z], e = [e] or [ɛ], o = [o] or [ɔ].

APPENDIX B: PLAUSIBLE NYASANG/TANI LOANWORDS IN BANGRU.

Unless mentioned otherwise (SM/SA), Hruso data from AA; E. Miji data from AE, Western Miji data from AW.

Gloss	*PTB, PT, Nyasang*	*Bangru*	*E. Miji*	*W. Miji*	*Hruso*
buffalo	mintiu (ABN); Pur. miŋdək	miŋdə(k)	ɕəkəram ~ ɕəkʰam	ʃukʰre ~ ʃəkʰen	ɸəmə; fumu (SA)
sugarcane	bapih (NY)	bapi̱:	kəlaŋdʒan	gəlaŋdʒaŋ ~ gedaŋ	d̪ŭgo
mosquito	taruŋ (NY)	taruŋ	sirdoŋmai ~ sirijoŋdaŋmaⁱ	sərədaŋ ~ sirijaŋdo ~ suriŋdaŋ	səxən (SA)
duck	pədʒ͡ap (NY); PT *ǰap DUCK; IA hañs	pədʑ͡ap	ũso	ũso ~ muso ~ husõ	ʔosa; asa (SA)
maize	tupu (ABN)	təpu:	ɕə̆ban ~ ʃibat	sibeʔ	sə̆be; t͡sibje (SA)
chili	jamdək (NY); Pur. jaŋdək	jəda:	dʒaijo	dʒaju ~ dʒaᵘ	adə
spider	aparam (NY)	aparaŋga	nərija(nam)	baʃidərgaᵘ ~ batʃibegau ~ basidərgiaŋ	ʃagəxa
banana	PT *ko-pak; Pur. kopak	kɔpə̀(ʔ)	ləlaŋ	rilang	xo̱lo
lizard	sozəŋ sopəŋ (NY)	sod͡ʑəŋ (sopəŋ)	gusuman	bətʃabətʃi/t͡ʃuŋkʰaŋkjuŋ	-
tired	api	api:	ɬə ~ lə	ɬə ~ lə	la
gold	in; PT *ɯn	aiŋ	seʔ ~ san	ʃə ~ sen	ʃə
rainbow	ha’rigo’go (ABN)	harigogo	jomonəkəⁱ	rumudəkʰre ~ dʒimodəkʰe ~ dʒumodəkʰre	ɲedʒiləgo; jed͡ʒ̆əʃə (SA)
elbow	laʔbəŋ (NY)	laabəŋ	paʔtʃəŋkaŋ ~ patʃeka	paŋtrəŋkʰu ~ patʃiŋku	apobe
back	kojɔŋ (NY); Pur. kətʃjek	kəjoŋ; məkət͡ɕàì	kəbaŋ	(mə)gəbaŋ	ʔə̆tʃəbo; ot͡səbo (SA)
knee	ləbəŋ (NY); PT *lə-bɯŋ	ləbəŋ	lekəpiu	lekəpiu ~ legəpʰu ~ leikʰu	ʔəʃpə; əʃipʰə (SA)
left	laʔt͡ʃi (NY); PT *lak-ke LEFT SIDE	laʔt͡ʃi	sivijo	sivijo ~ savijo	ɸovo; pʰəvo (SA)
right	labjɛʔ (NY); PT *lak-brɯk RIGHT SIDE	laʔbjɛk	ɕədʒen	sidʒən ~ sidʒiŋ	tʃədʒə; sət͡zə (SA)
dog	PTani *pjaŋ WILD DOG	sopɛ:	zazaⁱ	ʃadʒi ~ sadʒik ~ ʃazeʔ	ʃyjo; səljo ~ t͡səlo (SA)
branch	#1278 s-ka(:)k; #6653 PTani *ɦak	a:ʔ	gonotʃaŋ ~ mənətʃaŋ	mətʃitʃaᵘ ~ (o/u)dətʃa(ŋ)	ʃoɸo, ʔoɸotsa

Gloss	*PTB, PT, Nyasang*	*Bangru*	*E. Miji*	*W. Miji*	*Hruso*
love	#1359 *m-ba(k/ŋ) LOVE/ COPULATE; PK a-pak; Bengni pak (PT)	po:	mədʒovəna ~ loraŋ	luŋdʒaŋ ~ avirə ~ matʃodori; luŋʒaŋ (SM)	nalbo; nələvo (SA)

APPENDIX C: ALPHABETICAL BANGRU LEXICON.

Unless mentioned otherwise (SM/SA), Hruso data from AA; E. Miji data from AE, Western Miji data from AW.

Gloss	*PTB*	*Bangru*	*E. Miji*	*W. Miji*	*Hruso*	*PH*	*Proto-forms, isoglosses*
aconite	-	nəpõ:	-	nəpʰaŋ (SM)	-	*nə-paŋ	-
ant	-	səɲi:	ɕəni	ʃiɲiŋ ~ siɲi	siɲi	*si-ni	BG ʃiɲiŋ
awake	-	pi:	-	pʰrəu (SM)	pʰi (SA)	*pri	-
axe	#2772 *r-pʷa	pərd͡ʑɛiŋ ~ purud͡ʑin	pələ ~ pʰĕlu	bulu ~blu	pʰod͡ʒe (/SA)	*bə-ru(d͡ziŋ)	SS pʰəlu; KD pʰa
bad	-	mənɛ̃ĩ(ŋ)	məni	məni ~ məɲi ~ aɲirə	maᵘ	*mə-niŋ	-
bamboo (big)	#2549 *g/r-pʷa	ba:	braᵘ ~ brə	braᵘ ~ bro ~ dʒⁱu	sə	*bra	PK məbɹa: ‘small bamboo’; WT sba ‘cane, bamboo’
bark (tree)	#729 *p(r/y)a SKIN	gəpja:	-	oupʰrɻ̆ (SM)	ʃokʰu (SA)	*(g)o-prja	-
bear	#2777 *d-wam	sət͡ɕõ:	ʃitʃaŋ	ʃit͡ʃaŋ ~ ʃi-staŋ; ʃut͡sang	ʃətʃo; sət͡so (SA)	*sə-t͡saŋ	PK sətəm; BG sətʰum; SS sətʰuŋ; KD ɕatʰɔm
bee	-	maìˀ	miˀ ~ maⁱ	miˀ ~ meⁱ	mădʒəd̪u	*majk	-
big (thick, wide)	#183 *(t/d)ow-n SWELL / THICK	mədua; məbja: ~ məbɛ:	mədəbu ~ mədo	mədo ~ ado ~ məhiŋ	djo; dɛu (SA)	*mə-doˀ	SS *ʔadɔk; KD ʔɔdɔʔ
bird	#1604 *daw OR *dow	pəd͡ʑu:	bədʒi ~ pəɕə	bədʒə ~ budʒuˀ ~ bəziⁱ; buzu̯ (SM)	musə	*bə-dow	PK pədou; SS bət͡ɕʰa: ~ pt͡ɕʰɛ
bite	#1799 *twak PECK AT/BITE	to:	ta ~ taʔna	tʰai ~ tʰaˀ	tʰodʒo	*taˀ	WT ’thog ‘pick, pluck’; TS ʈok ‘bite’

Gloss	*PTB*	*Bangru*	*E. Miji*	*W. Miji*	*Hruso*	*PH*	*Proto-forms, isoglosses*
bitter	#229 *b-ka-(n/m/ŋ) BITTER / BILE / LIVER	kəkjo:	məkʰu	akʰu ~ məkʰu	kamʃo	*kam	PT *ko ~ ka:; BG əkʰo:; TS kʰa-lu
blanket	-	kambol	kombolo	kombolo(u)	kombolo	-	IA kanbal
blood	#230 *s-hywəy-t	ja:	medʒaʲ ~ ʒi	ʒi ~ dʒaʲ	ʃə; iʃə (SA)	*jaC	TS ji ~ ʑi
blow	#503 *k/s-mut	màìˀ	-	-	-	-	-
body	#14 *du	mədʑ̀òˀ	ʒaʲ	zaʔ	ʔoso; əso (SA)	-	BG seo:
body hair, feather	#363 *s/r-mul ⪤ *s-mil ⪤ *s-myal	məməŋ	-	umu	(u/i)mu (SA)	*mə-muC	PK amuiŋ; SS ʔamiŋ; KD mur
boil (water)	-	lu:	dʒom ~ zəmna	dʒən ~ dʒrən; ʒiu (SM)	xuʃəʃe; lusu (SA)	*lu	PCN *m-lu; Idu ma^{55} lu^{55} (ZM)
bone	#232 *m/g/s-rus; #238 *g-r(w/y)a(ŋ/k)?	məri:	mariaŋ	miliaŋ	ʔəxəbe; erəbje (SA)	*mə-ri-jaŋ	-
bow	#2386 *(g/b/m)-la-y BOW/ ARROW	kəràìˀ	kəraʲ	kʰiri ~ g(ə)ri	kʰiri	*gə-raj	BG rək; KD, SS, TS li
breath	#32 *N-sak	sòˀ	-	ditʰu (SM)	-	-	OC *sək; Western Tani *sak; PCN *sak; KD ɕoʔ 'rest'; TS ɕoŋ 'rest'
breast; milk	#259 *s-nəw(k/ŋ)	mənəŋ	mənaŋ ~ nag	ʃufunu ~ ʃunovə; ɲu̯ (SM)	apʰu	*mə-nuŋ	SS nuŋ~nyŋ; TS nu; KD ɲu
broom	-	sja:	namʃoʲ ~ namɕoirə	naʃi ~ nesi	ɲeso	*(nam)sjaj	-
burn	#340 *duk BURN / KINDLE	(mɛ:) dʑ̀o:; blɤ53 (LB)	frəna	fra(n/ŋ) ~ peneʔ; pʰrjaŋ ~ pʰen (SM)	pejo; pʰwa (SA)	-	-
cane; rope	#533 *s-rwi(y) CANE/CORD	su: ~ ɕu:	-	ʃu (SM)	ʃu (SA)	*su	PKC *ruy ⪤ hruy CORD/RATTAN; PCN *a-(h)rəj; PT *soŋ;

Gloss	*PTB*	*Bangru*	*E. Miji*	*W. Miji*	*Hruso*	*PH*	*Proto-forms, isoglosses*
							Bengni u-šoː (Sun 1993: 93)
chicken	#1604 *daw OR *dow BIRD	doː	doᵘ	dok ~ doʔ ~ dup	dʒuo	*dowC	-
child	#2708 *m-(t/d)u NEPHEW/ DESC.	mədz͡ʑuː	-	amai (SM)	sa (SA)	-	TS za ‘son’
chin	-	məguː	gutʃa(ʔ)	gutʃa(ʔ)	ʔěgado; gad͡ʒo (SA)	*mə-ga-daʔ	Koro gumdu (AK); PK akou; BG tʰəkʰau; KD, SS gamde; DS gamtʰuŋ
cloth	-	gìˀ	gije	gije ~ gəri ~ grə	gije	*gi-le	Koro gile (AK)
cloud	-	waːwəː	maⁱmaŋ ~ maⁱmər	mⁱemy ~ mimu; meimiu (SM)	məmə; mum(u) (SA)	*majməwŋ	PKC *may; PT *m(ə/u)k
coal	-	mjɛːpeːziŋ ~ mɛːpəziŋ	-	-	-	-	-
cook	-	kuː	kə ~ kʰu	kʰə ~ kʰu	kʰu; kʰo (SA)	*ku	-
cooking oil	-	tiːliː ~ t͡ɕənɛː	pandʒaŋvə	pʰeŋdʒanrə; pʰenʒaŋvu (SM)	luboxu	-	IA tēl
copula	#450 *way BE / COPULA	wi	-	-	-	-	-
cow	-	səː	ʃufə	ʃufu ~ dʒufu ~ dərfu	pʰolxu; fulxu (SA)	*su	PTk *se; KD ɕa
cry	#1103 *krap WEEP	k(j)eː	krəmna	kʰə̆	kʃo	*kraC	OC *k-ɾəp; TS gɛp; KD kʰip
cut		tɛ ~ tæ	taⁱna ~ rap ~ voăna	tʰaⁱ(ne)	dʒojo; d͡ʒɛ (SA)	*taj	PTk *tat; PT *tək CUT UP; TS tok
day	-	aguː	gijaŋtaŋ	dʒaŋtaŋ ~ hũe	jo	*ga	-

Gloss	*PTB*	*Bangru*	*E. Miji*	*W. Miji*	*Hruso*	*PH*	*Proto-forms, isoglosses*
dead body	#17 *s-maŋ BODY / CORPSE	səmoː	-	-	d͡zu (SA)	-	PT *si-maŋ; Puroik səmaː
deep	-	mərjuː	mərə	arək ~ məruʔ ~ merik	ɾju	*mə-ruk	PT *rɯŋ; PKC *ruak EMPTY; SS ʾaruk ‘empty’
die	#27 *səy	tai	teina	tʃi	dʒudʒo; d͡za/i (SA)	*θəj	PKC *thii-I, thiʔ-II
dig	#3573 *s/m-du	taː	-	tʰa̯ʊ̯ (SM)	t͡ʃi (SA)	*taC	-
dirty	-	ɲət͡ɕi̤	-	nɪt͡ʃi (SM)	ɲit͡s kriɲiu (SA)	*ni-t͡ɕi	-
do	-	ruː	rəna ~ ru	ru ~ rutʃine ~ tʰerore	dadʒo	*ru	PT *rjɯ; PNN *rəːy; BG rjɛt; SS rɛ(t/ʔ) ~ ra(t/ʔ); KD le; Nyasang ri; Bengni rji
door	-	nepãĩ	banpi ~ vapʰi	vimpʰi ~ vapʰi; banpʰik	ɲĕgdəʃe ~ ɲekd͡ʒusi (SA)	*piŋ	BG haːpiŋ
dream	#130 *r/s-mwəy	tjamə:	taⁱmat~ taⁱməna	tʰeme(ma) ~ tʰaⁱmeʔ	tʃʰimijo	*tai-mə	OC *C.məŋ-s
drink	#502 *N/s-tuŋ	toŋ ~ tuŋ	tʰoŋ ~ toŋna	tʰoŋ ~ tʰoŋme; tʰuŋ (SM)	tʰudʒo	*tuŋ	WT ’athung
dry	-	məkiː	mekʰijan	akʰijaŋ ~ məkʰəjam ~ mekʰijan; məkʰjaŋ (SM)	kɹo; kʰrou (SA)	*mə-ki-laŋ	BG əkou
eat	#36 *N-dz(y)a-k/n/t/s	t͡ɕùˀ ~ t͡ɕèˀ	tʃu ~ tʃəna	tʃu; t͡sʊ̯ (SM)	tʃadʒo; t͡sa (SA)	*t͡ɕa	KD t͡ɕʰa; SS t͡ɕu; BG t͡siə
egg	#3438 *(r/l)um	doːrɛiŋ	doriŋ ~ doriet	dori(ŋ)	dʒedʒe	*do-riŋ	BG əriː
eight	#2259 b-r-gyat	səgàìˀ	ɕəgə	t͡ʃigə ~ səgə	ʃəgdʒə; səg͡zə (SA)	*sə-giC	SS, KD sargɛ

Gloss	*PTB*	*Bangru*	*E. Miji*	*W. Miji*	*Hruso*	*PH*	*Proto-forms, isoglosses*
elder brother	#2362 *(g/k)əw-n	ako:	kəvo^{i}	akʰəvo ~ akəvo ~ kʰəvoʔ	ʔaja; ắ-khī (elder), ắ-yǎ (younger, AS)	*(a/mə)ko	BG kʰua (younger)
elephant	-	sətɛː ~ sətəː	atai	atʃi	atʃʱə	-	IA hātʰi
empty	-	məhe: (ruaroŋ)	mihijaŋ	(a/mi)kʰijaŋ	ʔəɸo; ufou (SA)	*mə-hi-laŋ	PNC *hoom EMPTY / VACANT
excrete, defecate	-	(lai)t͡ɕai	-	-	t͡si (SA)	*t͡səj	PKC *tseʔ URINATE / DEFECATE; TS, KD t͡ʃʰɛt; Bugun t͡seː; SS t͡ɕʰaː
excrement	#572 *kləy BODY DIRT / EXCREMENT	lai	-	-	-	-	-
eye	#33 *s-myak ⋊ s-mik	mejàˀ	mẽ	məri ~ meʔ ~ mer	ʔiɲi	*mə-jaʔ	BG mjɛk
far	#1011 *s-r(i/u)ŋ LONG	arəŋ	mərən	maraŋ ~ arən ~ mərən	ʔəxə; əra (SA)	*mə-rəŋ	BG ruaŋ 'far'; KD ʔuriŋ ~ ʔuliŋ; SS ʔarɛŋ; TS riŋbu all 'long'
fat (n)	#163 *s-bʷa(m/p) SWOLLEN/ FAT/THICK	məbaː	məmbau ~ məmbou	membau	ʔəbi	*mə-baC	-
fear	#2337 *kri(y)	ɲirimɛ̀ˀ	-	rin (SM)	rije (SA)	*ri	BG ryːm
few	-	miːgəmɛ	mija	meʔ ~ mija	meʔ	*mejʔ	-
fight	#2596 *ray	warɛː	-	nau-ri (SM)	tʰo-ri (SA)	*rəj	-
finger	#330 *(t)s(y)ow	məgɛit͡ɕoa	gitʃoʔ ~ ditʃo	gitʃoʔ ~ gitʰə; git͡so̬ (SM)	ʔĕdʒətʃə; eg͡zət͡sə (SA)	*mə-guC-t͡ɕoʔ	-
fire	#2136 *mey	mɛː	mai	mai	mi	*maj	-
fireplace	#2599 *g-rap	làˀ	-	dətʰle̬ (SM)	hukʰije (SA)	*laC	-

Gloss	*PTB*	*Bangru*	*E. Miji*	*W. Miji*	*Hruso*	*PH*	*Proto-forms, isoglosses*
fish	-	t͡səd͡zəmɛ:	tʃo^{i}	t^{h}(r)i; t^{h}ui ~ t͡ʃui (SM)	tʃ^{h}e; t͡ʃ^{h}i (SA)	*trV	Guiqiong tʃə55 ni55 (TBL); Mawo Qiang ʁzə (TBL)
five	#1306 *l/b-ŋa	pəŋu:	puŋu	boŋu ~ buŋu ~ pugu	pom; pum (SA)	*bə-ŋu	PCN *pha-ŋa
flow	#2680 *sywar ⋊ *g/b-sywa-n/t	sa:	-	-	-	-	-
flower	#2185 *b/s-wat	məbua:	gəbo	uboʔ	ʃoba	*mə-boC	PK məbuaiʔ; BG əbua
friend	-	mədʑ͡ua	mədʒo	mədʒo ~ madʒro ~ adʒo	ʔodʒo; d͡ʒɛ (SA)	*mə-d͡ʑoC	PT *ǰ(o/u)n ~ *ǰen; Pur. a-dua ; BG e:d͡ʑak
frog	#645 *t(u/i)k	d͡ʑə:	dʒou	dʒou	ʃedʒa; ʃəza (SA)	*d͡ʑuC	-
fruit	#1019 *sey	mətɛ̃:	gutan	ut^{h}en	ʃə̆dʒe	*θai	PKC *thay
four	#2409 *b-ləy	puruwɛ̃ĩ̃	pəlei	bəlei ~ bli	psə̆xi; p^{h}iri (SA)	*bə-ləj	TM bli; TS, KD pɕi; SS bəsi; PLB *b/ʔ-ləy^{2}
full	#111 *(p/b)liŋ	ləŋbəla	ləndaŋ ~ len	lən ~ len ~ p^{h}iɬaŋ; olin (SM)	gu	*liŋ	BG əlije:
garlic, onion	-	jəkɛ̃ĩ̃	kiomu ~ kemoŋ	k^{h}ikmo ~ pək^{h}emu; k^{h}jo̯mu (SM)	sukum (SA)	*kikmuŋ	KD mɔŋ; BG muaŋ; SS mɔŋsiŋ
give	#2158 *s-bəy-n/k	bai	ba^{i} ~ be^{i}na	p^{h}ebi ~ biʔna ~ bi	dʒidʒo	*bəj	TS, TM bi; KD ɕi; BG p^{h}y; PLB *bəy^{2}
goat	#6033 *bi-ŋ	səpɛ̃ĩ̃	ʃəpen ~ ɕuprem	tʃeprem ~ ʃəp^{h}ə̆rən; ʃup^{h}rin (SM)	k^{h}əʃə; k^{h}isi (SA)	*se-preN	BG səp^{h}in; PBG prɯn^{2}
grandfather	#1638 *b/m-laŋ PENIS / MALE / HUSBAND	məlo: ~ alo:	-	alu (SM)	-	-	-

Gloss	*PTB*	*Bangru*	*E. Miji*	*W. Miji*	*Hruso*	*PH*	*Proto-forms, isoglosses*
grandmother	#2665 *sru(w) AUNT/ ELDER SISTER	aseː ~ məseː	-	aʒui (SM)	-	-	WT sro-mo ‘aunt’
grass	#5642 *s-yəy GRASS / WEEDS	rəsjaːrɛː ~ rəsɛːrɛː	-	t͡sen (SM)	bije ~ t͡sə ~ suso (SA)	-	-
grind, crush	#2333 *kriːt	ràìˀ	-	ri̬ (SM)	ri (SA)	*rajC	PT *rit
guts	#2116 *r-gyu-ŋ (prov.)	mələguː	-	luŋ (SM)	-	*mə-luŋ	BG əlui
hair	#1228 *s-pu FEATHER / WING / HAIR (body)	gə́pɨ̀	gopal ~ gopə	upʰiᵘ ~ wopʰijo	ʔeket͜ʃe; ikʰijet͡ʃʰi (SA)	*go-pu	WT mgo-spu
hard	#174 *s-ra	məloː	-	məgaŋ (SM)	goɣou (AA); gorou	*mə-gaŋ-lo	-
hammer	-	martolə	t͜ʃəmpo	t͜ʃəmpo; t͡simpʰo̥ (SM)	martăl	-	IA martal
hand, arm	#712 *k(r)u-t	məgɛ̀ìˀ	gi	gi	ʔagdʒə; eg͡zə (SA)	*mə-guC	-
have; exist	#3602 *du STAY/ LIVE	duː	-	du (SM)	du (SA)	*du	WT ʼdug
head	#386 *m-gaw ⪤ s-gaw; #1224 *kuk	goːkɛ̃ĩŋ	(mo)goᵘ	dəkʰijaŋ ~ uː ~ tokijaŋ	ʔekʰje	*mə-go-kuŋ	-
heart	#1381 *m-lu(ŋ/m)	məloŋwəː	loŋvə ~ luŋvəᵘk	luŋvəᵘk ~ kebaŋlaŋ ~ məɲijo	ʔə̆lə̆biu	*mə-luŋ-wəwC	BG ələbau
heavy	#2415 *s-(l/r)əy-t	latəŋ	məleⁱ	məji ~ məiʔ ~ ai	ju; liu (SA)	*mə-ləj	BG əlai; SS ʔali; KD ʔuli
horn	-	məsu	(məsə)zuŋ/ʃoŋ	(mə/a)(ʃu/ʃi) ʃoŋ /dʒuŋ	ʔəʃəbdʒa; səb͡zə (SA)	*mə-su	-
horse	-	goːraː	-	ʃugro (SM)	fugra (SA)	-	IA gʰoɖā
house	#5746 *nam VILLAGE (+HOUSE (prop.))	neː	nam	ɲan ~ ɲe ~ ɲeon; nen (SM)	ɲe	*nam	Galo namə (GLDC 09 Galo); Koro ɲe (AK); PBG nok; Baram nam (Kansakar 2010)

Gloss	*PTB*	*Bangru*	*E. Miji*	*W. Miji*	*Hruso*	*PH*	*Proto-forms, isoglosses*
how many	-	kəɲəru:	kʰəɲa	(kə/gə)ɲo	kʰəɲa	*kə-na	-
human	#1002 *r-mi(y)-n PERSON/ MAN	ləwə: ~ nəwə:	ɲijə	ɲiuʔ; ɲi̯ (SM)	nə̆na	*niC	-
hundred	-	ləŋ	pəloŋ	bluŋ ~ beluŋ	ɸoxa; pʰuɣu (SA)	*bə-luŋ	PT *lɯŋ; Koro pələ (AK)
ill	#160 *na-(n/t) ILL/ PAIN/SORE/ ACHE	nua ~ noa	-	no (SM)	na (SA)	*noC	-
insect	#2178 *bəw INSECT/ SNAKE	bə:loŋ	bilo ~ biluŋ	biluŋ	bŭl:u; bilu (SA)	*bəw-luŋ	-
iron	#2676 *syam	sə:	-	sen (SM)	sə (SA)	*suN	-
itch	#199 *m-tsik; #1457 *m-sak	kədz͡ʑùʾ	-	gudz͡ʑu (SM)	sədz͡ʑu (SA)	*gə-dz͡ʑuk	-
kick	-	pa:	təgeŋna	laitegeŋ ~ dəgrən ~ tekraŋ	gədrə; gəd͡ʒu (SA)	*dəgraŋ	-
kill	-	gja:	gaʲna	wai ~ waitʃo (strike, beat?)	gə (SA)	*gajC	-
knife	-	wɛ:ts͡ʑəŋ	vaʲtʃoŋʒi	vetʃin ~ vaʲtʃoŋʒi; vaits͡ʑən (SM)	betʃasa; vets͡ʑə (SA)	*vaj-ts͡ʑuŋ	PKC *tsem
know	-	ni:	nina ~ nĭ	nĭ ~ ŋintʃina ~ nintʃe; ɲi (SM)	g̱aŋxudʒo; hosə (SA)	*ni	-
laugh	-	tua	tona	tʰo ~ tʰoᵘ	tʃʰəjo; t͡ʃi (SA)	*toC	-
leaf	#2085 *rwak; #824 *s-lap	mərjɛ̀ʾ	məlam ~ golap	məle ~ uleʔ	ʔə̆xe; ʃere (SA)	*mə-rajC	BG ərap; KD ʔulap, SS ʔalɛ:
leech	#2555 *k-r-pʷat	ləwɛ̀ʾ	-	dəve̯ (SM)	-	*lə-wajC	SS pʰywɛ:
leg	#350 *la LEG/FOOT	məlɛ:	lei	lai	əʃi ləbu (SA)	*laj	KD lej; SS lɛ:
lick	#628 *s-lya:w LICK / TONGUE	kəlo:	-	-	-	-	BG ljak; KD lak

Gloss	*PTB*	*Bangru*	*E. Miji*	*W. Miji*	*Hruso*	*PH*	*Proto-forms, isoglosses*
lift	#5406 *laŋ	lõ(ŋ)	jan ~ijaŋna	jan ~ ʃaŋ	lo (SA)	*laŋ	-
light	-	lətõ:	mənətaŋ	malətʰaŋ ~ alitʰaŋ ~ mədətʰaŋ	lə̃to; lutʰou (SA)	*mə-lə-taŋ	BG ətʰou
liquor	-	t͡ɕi:	(pə̆)tʃaŋ	tʃaŋ	tʃə; t͡si (SA)	*t͡ɕi	WT chang
listen, hear	#811 *r-gna	rɛi	roina	rei	dʒədʒo; d͡zəxu (SA)	*rej	-
live, grow up	#71 *s-riŋ ⩙ s-r(y)aŋ	səŋ	-	ʃən (SM)	əʃə (SA)	*siŋ	NY səŋ; OC *sreŋ
liver/lungs	#1390 *m-sin LIVER/ HEART/BILE	mətɛ̃ĩ̃	-	mətʰən (SM)	ĕ-djŭ (AS)	*mə-θin LIVER	PCN *m-sən; PKC *thin LIVER
long	-	məpaŋ; mə[31] braŋ[55] (LD)	məpijaŋ	məpijaŋ	pʃu; psiu (SA)	*mə-pjaŋ	PK apɹaŋ; BG əpʰjaŋ
look, see	#1405 *kaŋ KNOW/SEE	gõ:	gaŋna	waŋ	hodʒo	*gaŋ	PT *kaŋ
louse	#2652 *s(y)ar; #2609 *s-r(y)ik	sàˀ	-	fi̯ (SM)	ʃə (SA)	*saC	-
make; do	#552 *day DO	da ~ dɛ:	-	-	d̪adʒo	*daj	-
man (male)	#1002 *r-mi(y)-n PERSON / MAN; #5484 *wa MAN/ PERSON	ɲəwi:	ɲəjə	ɲiju ~ nuˀ ~ nuvə; nuvu (SM)	məhu; muxu nəna (SA)	*niC	-
meat	#34 *sya-n	sùˀ ~ ɕùˀ	sĭkijuŋ	ʃitʃuŋ	ɸu; t͡sə, sə (SA)	*su	PKC *sʰaa ANIMAL / FLESH / MEAT
medicine	-	do:wai	dawa	dawa	d̪oxa	-	IA davā
melt	-	ŋua ~ gua; d͡ʑɛ:	-	-	-	-	PT *ǰit ~ *ǰet
month	#1016 *s-(g)la MOON/MONTH	lùˀ	lə	lə ~ lu	kʰobe	*lu	-
moon	-do-	alo: ləbai	lə	lɛ ~ lu	hŏbe; hubje (SA)	*lu	-

Gloss	*PTB*	*Bangru*	*E. Miji*	*W. Miji*	*Hruso*	*PH*	*Proto-forms, isoglosses*
mountain	#3581 *s-gaŋ MOUNTAIN/ RIDGE, HILL	gaŋ ~ səpi:	poŋ	pʰuŋ ~ poŋ	pʰu; pʰudeu (SA)	-	Koro goŋ (AK); PK gɹaŋ; WT sgang; Miji/Hruso: PTk *pʰuŋ
mouth; language	-	məɲəŋ	ɲek ~ ɲeləʲ	niwi ~ nui	ʔănzu; un͡dzu (SA)	*mə-nuŋ	PCN *mən
mortar	-	ləra:	-	dəlo (SM)	rulu (SA)	*lu-lV	TS lu
mother	#2507 *ney ⩙ ni(y) AUNT/ MOTHER-IN-LAW	məɲɛ: ~ aɲɛ:	aɲe	anai ~ aɲi	aɲi	*me-naj	PKC *nii; PTk *ni AUNT
name	#2450 *r-mi(ŋ/n)	məmjəŋ	mə̃rn	mə̃rn	ʔəɲəɲə; ʔaɲiɲi (SA)	*mə-mjiŋ	TM mjɛŋ
near	#2496 *s-ney	mərɛ:	məroʲ	məni ~ aɲiŋ	ʔəɲisə	*mə-nej	-
neg. imp.	#2681 *(t/d)a	tu-	-	tʰa- (SM)	d͡ʒu- (SA)	*ta-	SS thə-; KD tʰa-; BG də-
new	-	məkərə:	məkərə	məgəniu ~ agənu	ʔăkă̱n; əkʰən (SA)	*mə-gə-nu	-
night	-	nəga: ~ aga:	(k/g)eŋgau	(dʒaŋ/tʃaŋ)gau	ɲegi	*nə-gaC	-
nine	-	sətəŋ	ɕətan	sətən	sṯə; stʰə (SA)	*sə-tiŋ	-
nose	#2093 *ka ⩙ *ŋa	miko: ~ məɲəko:	nebijoŋ	nibuŋ ~ nibiuŋ ~ nebijoŋ	ʔuʃə; (un/nu) su (SA)	-	-
old	-	məɕua:	məʃoʔ	(a/mə)ʃoʔ	ʔăme; emije (SA)	*mə-ɕoʔ	-
one	-	akə̃: ~ akɨ:	aŋ ~ akʰijo ~ akʰowa	akʰeʔ ~ akʰijo ~ akʰo ~ atro	ʔa	*a-ken	PT *kon
otter	#2595 *s-ram	sə̃:	-	-	size (SA)	-	WT sram
paddy rice	-	ɛ̃:	ŋam	enʃo ~ aɲsoʔ ~ an	ʔo	*an	PT *am-bɯn RICE (UNCOOKED)
penis	#1624 *la MALE	məlòˀ	-	-	-	-	KD, SS, BG lak

Gloss	*PTB*	*Bangru*	*E. Miji*	*W. Miji*	*Hruso*	*PH*	*Proto-forms, isoglosses*
pestle	-	pəla:	-	bəlau (SM)	-	*bə-laC	-
pig	#1006 *pwak	jùˀ	dʒo(ʔ)	dʒio ~ dʒuo ~ dʒoʔ; ʒo (SM)	ʊo; vo (SA)	*jowʔ	PKC *wok; PTk *hwok; BG wɔk
pillow	#692 *m-k(u/i)m	gokɛ̃ĩ	gokəm	ukʰum ~ (nu/wo)kʰən	dĭkʃo	*go-kuN	-
pull	-	sa:	bre ~ ɕaana	roʔ ~ horo	byjo	-	-
put	-	wu: ~ vu:	-	rou (SM)	-	-	-
rain	#298 *m-t(w)əy-n ⨯ *m-ti-s WATER etc.	nədi:	fro	fro; pʰrjo (SM)	jedʒ̆ʃə; ɲedzəʃi (SA)	*nə-dəj; *pro	PK am-pɹu:; BG ha:pʰiɛ
red	#2683 *tsya(k/ŋ) RED (prov.)	jatɕòˀ	mətʃi	mətʃə ~ mətʃu ~ atʃu	tʃu	*tɕaʔ	TS tsalu
revenge	-	ra:	-	-	-	-	-
ring	-	gəleˀ	gilan	gile ~ gilan	(gzətsə/dʒ̆ətʃe) lje	*gə-leC	Koro lale (AK)
river	#298 *m-t(w)əy-n WATER / RIVER; #2322 *kl(y)u(ŋ/k) VALLEY / RIVER	wəgo:	vəjaŋ ~ vədo	vəjaŋ ~ vədo	kʰu; xudɛu (SA)	-	PTk *koŋ
road	#1017 *lam	rɛ:bõ	labaŋ	labaŋ ~ lembaŋ	xabo; rabo (SA)	*lam-baŋ	Apatani lem-bo (PT); Chungli Ao lə[1] maŋ (PCN); TM lemdaŋ
root	-	məkɛ̃ĩ ~ məltù	məkʰən ~ gokʰrən	kʰrən ~ okʰriŋ ~ ukʰən	ʔə̆kʃe; əkʰrə (SA)	*mə-kriŋ	BG ərəŋ
round	-	məwə:	mədəriu	mədəriu	odʒ̆ou; udʒ̆ərəu (SA)	*mə-də-rəw	-
rub	#2674 *sywəy RUB / SCRAPE / SHAVE	pəsɛi	-	-	-	-	-
run	#6163 *b-(l/r)əy	bi:	-	ʒum (SM)	-	-	-
sago palm		ləwo:	-	-	-	-	-

Gloss	*PTB*	*Bangru*	*E. Miji*	*W. Miji*	*Hruso*	*PH*	*Proto-forms, isoglosses*
salt	#2644 *g-ryum	ru:	lə	lu	xu; ru ~ ɣu (SA)	*lu	BG səruə
sand	-	səgaiʔ	ɕəgəro^{i}	bai; balji (SM)	bali	*sə-gə-raj	IA bālu ‘sand’
seed	#1019 *sey	mətɛ̃:	ta^{i}lo^{i}	t^{h}e-li ~ ăli ~ t^{h}e-dʒo ~ ma-la^{i}	ʔəsə	*mə-θai	PTk *t^{h}a
sell	#376 *(g/m/s)-lay EXCHANGE/BARTER	la:	laəna ~ k^{h}a^{u}	la^{o} ~ p^{h}ek^{h}o ~ tʃoŋret	dɹu	*laC	PK lou
seven	Hruso: #2505 s-ni-s	məwàìʾ	mija	mija(k)	mɹo; mrjo (SA)	*mə-ljak	BG məlija:
sew	#2350 *krwi(y)	kàìʾ	gə^{i}k^{h}rə ~ k^{h}rəmna	(grə-)k^{h}ri ~ k^{h}rə	kʃijo	*k(r)iC	-
short	#7175 *s-ŋ(i/u)ŋ	mərõŋ; mə^{31} ŋoŋ^{55} (LD)	məruŋ	məruŋ ~ aruŋ	ʔětʃesa; udu(sa) (SA)	*mə-nuŋ	-
shoulder	#1327 *pwaŋ ARM (upper) / SHOULDER	(mə)potɕ(i̤)	-	pastuŋ (SM)	-	-	-
sister (elder)	#1619 ma FEMALE / MOTHER	ama: ~ momoa	ʔama	amo ~ amu; momo (SM)	ʔama	*mə-ma	-
sit, stay	#1906 *m-(t/d)u(ŋ/k) SIT	d͡ʑùʾ	gijoŋ ~ gijona	deŋradʒuŋ ~ dʒuʔ ~ gijoŋ	xowe; ɣɔ ~ ro (SA)	*d͡ʑuC	BG duk; SS dyŋ; KD duŋ
six	#2621 *d-k-ruk	rèʾ	ra(m)	re(ʔ)	xe; rijɛ (SA)	*reC	BG rap
skin	#792 *p(r/y)a	məpja:	məpə ~ məpre	məpre	ʔătʃ^{h}ə	*mə-prja	OC *pra ~ m-paj
sky	-	ɲədəlu:	gijaŋ	(na)d͡ʒang	med͡ze; ɲed͡zə (SA)	*nə-də-laŋ	Bengni ñi-do:-mo: (PT)
sleep	#128 *g-(d)z(i/u)m	d͡ʑe:	dʒi(na)	dʒi	dɹumudʒo; d͡ʒu (SA)	*d͡ʑV	OC *ts^{h}imʔ; SS d͡ʑiŋ
smell (v)	#1416 *s-rim; #1415 *m/s-nam	rɛ̃:	-	ɲen (SM)	sohu (SA)	-	-
smoke (n.)	#2361 *kəw-n/t	mɛkə:	ma^{i}k^{h}ən	ma^{i}k^{h}ən	mŭkʃə	*maj-kən	-
snake	#2178 *bəw	bə:	bə^{u}	b^{h}u ~ nabu ~ ɲabə^{u}	by	*bəw	-

Gloss	*PTB*	*Bangru*	*E. Miji*	*W. Miji*	*Hruso*	*PH*	*Proto-forms, isoglosses*
snow	-	tərɛ̃ː	-	dəlen (SM)	tʰr̃ĩŋo (SA)	*dəren	PCN *rə(ʔ) ICE/SNOW/HAIL
soft, smooth	#2577 *pryaw-k SOFT / BOILED	ləpəriː ~ ləpriː	-	məbəljᷟ (SM)	d͡ʒu; nə (SA)	*mə-lə-prjuC	-
soil	-	nòˀ	naʔ	naʔ	no	*naʔ	PT *mroŋ EARTH; Bengni ñoː; BG ŋak̀; SS kʰnɔ̃ ~ kʰnuː
speak	PTB *taj/w (prop.)	teː	ta ~reena	ʃoʔ ~ tʃoʔ ~tʰroʔ; tʰe(n) (SM)	tʃʰedʒo	*təwC	OC taw-s, Middle Chinese tsyewᴴ; Pekon Kayan tài (MK); Luxi Leqi tạːi^{53} (TBL)
spear	#2205 *m-duŋ ⨯ m-daŋ	gət͡ɕəŋ	dʒoŋ ~ dʒoʔ	dʒuŋ; d͡zuŋ (SM)	tʃudʒu	*d͡ʑuŋ	BG d͡ziɔŋ; SS d͡ʑɔŋ
spicy	-	səː	məʃu	məʃu ~ aʃiu ~ məʃiu	nəsə; nəʃə (SA)	*məsu	PTk *sa
spittle	-	jèˀ	-	ʒe̯ (SM)	zem d͡ʒi (SA)	*jeʔ	-
split	#5616 *pryak SEPARATE / SPLIT	prjɛː ~ prɛː	-	-	-	-	-
stab, punch	-	koː	-	rəŋ ~ rən (SM)	k͡ʃi (SA)	-	PK koː ‘hit’
stand	-	giː	gijon ~ gəroŋ	gijon ~ magarangiᵘ	gudʒu	*gu	-
star	-	lət͡ɕɨː	mətʃoŋbijaŋ ~ nitʃobijoŋ	dətʃuŋ	lə̆t͡sə	*lə-t͡ɕuŋ	OC *s-tsʰˤeŋ; PNN *liːt STAR / MOON
steal	#2365 *r-kəw	ləkəː	ʃikʰau ~ tʃəkʰə	(t͡ʃi)kʰə	kʃatʃudʒo; sak͡sə ~ t͡sak͡sə (SA)	*kə	WT rku; BG mekaukau; PLB *kəw^{2}
storehouse, granary	-	t͡ɕuː	-	t͡ʃuŋ (SM)	-	*t͡ɕuŋ	OC *tsʰˤaŋ

Gloss	*PTB*	*Bangru*	*E. Miji*	*W. Miji*	*Hruso*	*PH*	*Proto-forms, isoglosses*
straight	-	məkəroː	-	mugəraŋ (SM)	gədou (SA)	*mə-gə-raŋ	-
suck	#259 *s-nəw(k/ŋ) BREAST/ MILK	pənuŋ	-	bənu (SM)	-	*bə-nuŋ	PK pənuː
sun	-	d͡ʑùˀ	dʒoʔ	dʒoʔ; zuʔ (SM)	dɹu; d͡ʒu (SA)	*d͡ʑuʔ	Bengni doː-ñi, Bokar duŋ-ŋ̥i (PT)
swallow	#627 *mlyəw-k	pəlja ~ pɛː	-	bəɭui (SM)	-	*bə-ljaC	PCN *m-lju(k)
sweet	-	d͡ʑaŋ	mədʒan ~ məzaŋ	adʒaŋ ~ mədʒa(n/ŋ) ~ mədʒijaŋ	dʃə̆mtʃu; d͡ʒimtʃiu (SA)	*mə-jaŋ	PCN *m-yaŋ SWEET; Bugun pʰijaŋ
swell	#111 *(p/b)liŋ FULL / FILL	ləŋ	-	olin (SM)	-	*liŋ	-
(swidden) field	-	waː	-	vaw (SM)	-	*wa	-
swim	-	d͡ʑaː	brəona ~ vəsaŋna	ju ~ tʃiaŋ ~ ʃaŋ	hudɹo; d͡ʒo (SA)	*d͡ʑaC	PT *bjaŋ
tail	#1288 *r-may ⋊ m-ray	mələwjaː	mənəmə(re/rai)	adəmaⁱ ~ adɛmek ~ mədərə; dimrai̯ (SM)	ʔexem; ərim (SA)	*mə-lə-mrjaj	OC mjwe̯i; Mandarin wěi
take	#376 (g/m/s)-lay ⋊ (r/s)-ley ⋊ b-rey EXCHANGE/ BARTER	ləː	ləna ~ miniroⁱ	lə ~ ɬəʔne ~ hoɬə; lu̯ (SM)	ladʒo	*ləw	PT *laŋ; PKC *laa-I, laak-II; TS la; KD la; PK lei~rei
tell	-	t͡ɕatə	tʃo ~ tʃoana	tʰroʔmo ~ tʃua ~ tʰe	tru; t͡ʃʰe (SA)	*t͡ɕaC	-
ten	PTB *ruŋ (prop.)	rəŋ	lən	ɬən ~ lən	xə; ɣə ~ rə (SA)	*rəŋ	PT *rjɯŋ; PTk *ra
that	-	pɛt͡ɕi̤	paⁱtʃia ~ paⁱtʃəlo	paⁱtʃəlo ~ pʰetʃilo ~ pʰetʃoi	tʰose	*paj-t͡ɕi	
that (lower)	-	put͡ɕ(i̤)	-	pʰut͡su (SM)	-	*pu-t͡ɕi	-

Gloss	*PTB*	*Bangru*	*E. Miji*	*W. Miji*	*Hruso*	*PH*	*Proto-forms, isoglosses*
thigh	-	məru:	-	lu̯ (SM)	-	*mə-lu	TS lum
think	#6621 *məy WISH, WANT (prov.)	mi:	-	mjen, ʃu (SM)	-	-	PK mi ‘think, wish’; TS mi ‘think’
this	-	həŋ	huŋlo ~ hə̃ŋa[i]	huŋlo ~ huŋji	heji; huŋlo (SA)	*huŋ	PK həŋ; Galo ‘hi (GLDC)
thread	-	nùˀ ~ nu:	kəbo	kŭpo ~ dʒaŋ ~ kəbo	məʃin	-	-
three	#2666 *g-sum	kətɛ̃ĩ	kʰətəm	gətən ~ kətʰən ~ kʰətəm	dʒə; d͡zə (SA)	*gə-θəm	-
thorn	#2218 *m-(d)z(y)u(:)k PIERCE/ THORN	kəd͡ʑàˀ	(kʰə/gə)zau	(gə)d͡ʒik/d͡ʒu	kut͡ʃu	*gə-d͡ʑuC	-
thousand	-	ləŋrəŋ; d͡ʑər akɬ:	hazari	hazari	hădʒaxa	-	IA hazār
tongue	#621 *m/s-lay ≍ s-ley	məɲəŋ pəlja:	jakʰe ~ jakʰijo[i]	dʒakihi ~ jaʔkʰi ~ lakʃi; ʒe̯gʰi (SM)	ʔedʒabla; zebla (SA)	*bə-laj	-
tooth	#3316 *twaŋ (prov.)	mətu:	tə	tʰu ~ tu	ʔetʰu; ət͡ʃu (SA)	*mə-taC	PK kətuaŋ; SS nətʰyn~ nutʰuŋ; KD hintuŋ
tree	-	gənɛ:	(ge/go)no[i]	uɲi ~ uniʔ ~ oʔni; ou (SM)	ʃoɲi; ʃõn (SA)	*(g)o-naj	lit. ‘wood+mother’ viz. PK hɹeŋ-mua; KD ɕiŋ-ama etc.
turquoise	-	ju:	-	-	-	-	WT g.yu
two	#2504 *(g/s)-ni-s	kərɛi	kəran ~ kʰerə	geni ~ gərin	kʃə; k͡sə (SA)	*gə-niC	WT gnyis
uncooked rice	-	ɛ̃:ləgɛ̃ĩ	ŋamnəgam	andəgən ~ an	ʔolgə	*an-lə-giN	PT am-bɯn; Rawang am[33] (LP)
vegetable	-	pe:	-	pʰeu̯ (SM)	pʰijɛ (SA)	*pen	-

Gloss	*PTB*	*Bangru*	*E. Miji*	*W. Miji*	*Hruso*	*PH*	*Proto-forms, isoglosses*
vomit	#1782 *mwa ≍ mya-n SPIT/VOMIT	muː	-	mu (SM)	-	*mu	-
walk	PTB *daj (prop.)	djaː ~ dɛi	daʲʔna	daʲ ~ naidaʲdu ~ daʲdewo ~ daʲʔna	d͡ʒe (SA); dʒu	*daj	TS dɪ; Dulong di[53] (TBL)
hot, warm	#1844 *tsa-t ≍ dza-t	it͡ɕòˀ ~ jət͡ɕòˀ	mədʒu ~ məzi ~ mələ	adʒiu ~ mədʒ(i)u; məʒiu (SM)	ʃu; ʃəu (SA)	*t͡ɕaC	PCN *tsha HOT; TS tsʰalu
water	-	wiː	və	və	kʰu	*wi	Guiqiong wi[53] (rain, ZM); Jiulong Pumi wi[35] (TBL); PK kua; BG, SS kʰo; KD kʰow
waterfall	-	kuase(ŋ)	-	-	k͡sət͡su (SA)	*kua-suʔ	PK kuasuaʔ
weave	#2686 *(t/d)ak	t͡sai ~ t͡ɕai	tʃomna ~ gəʲtʃom	ɕən ~ tʰrən ~ (grə/zan)triŋ	tʰijo	*traj	OC *tək; WT thags; KD dak
what	-	təŋ	tən	tan ~ tin ~ tʰen; tʰin (SM)	ha	*tiŋ	SS ti; KD ʔa~ha; TS haŋ
where	-	kəː	kʰək ~ kʰroi	kʰəjo ~ kʰija	hagə; hago (SA)	*kəʔ	PKC *koy ≍ khoy ≍ hoy (prov.); KD haʔkɔʔ; TM gat͡ɕʰə
white	#1235 *plu WHITE/ SILVER/MONEY	ləpuː	mugram ~ məgijaŋ	mugram ~ magəran ~ magəran	gro	*mə-gə-raN	-
who	#5632 *su (prov.)	tiːwoː	təə	tʃʰu ~ tʃiu	dʒu; d͡zu (SA)	*θu	PKC *tuu RELATIVIZER (who, which)
wind	#2412 *g-ləy	loa	jo	jo	lau (SA)	*low	
window	-	iːriŋ; paːruŋ ~ puaːruŋ	kʰirki	kʰirki	kʰirki	-	Hin. khiḍki

Gloss	*PTB*	*Bangru*	*E. Miji*	*W. Miji*	*Hruso*	*PH*	*Proto-forms, isoglosses*
wing	#731 *g-(t)syəw-k/ŋ	mətɕ͡ùˀ	-	gətʃ͡i (SM)	-	*gə/mə-tɕ͡əwC	-
with	-	dʑ͡ərə	-	dʒ͡oru (SM)	-dʒ͡a (SA)	*dʑ͡Vru	-
wood	-	go:	go ~ ge	u ~ oʔ	ʃo	*(g)o	-
woman	-	ɲəwɛ:	nəmra^{i}	nəmeg ~ nəmra^{i} ~ numazə	mim(i)	*nəməraj	PT *mji-mə: WOMAN; Koro mimi (AK)
year	#2501 *s-ni(:)ŋ ⨯ s-nik	anəŋnəŋ	dəraŋ	dure(n)	ʔodʒe; lidʒ͡ə (SA)	*də-niŋ	OC *C.nˤiŋ ‘harvest; year’; WT na ning ‘last year’; TS ɲiŋ
yesterday	-	təga:	təganogo	degau	ɸu; fwu (SA)	*də-gaC	Hruso ‘yesterday’ = Miji wu ‘day’, Bangru agu ‘day’
younger sibling	#2492 *na:w	mərə:	raŋ ~ rə:	(mə/ɲa)nu	ʔonu; ɲiu (SA)	*mə-nuŋ	PCN *nu; SS miriŋ ‘younger sister of man’; PCN *nu; Koro ne (AK)
1SG	#2530 PTB *ŋa-y ⨯ *ka I/ME/SELF	ɲo:	ɲijaŋ	nijaŋ ~ ɲijaŋ; ɲaŋ (SM)	no	*na(-jaŋ)	PT *ŋo: ‘I’
2SG	#2489 *naŋ THOU	ni: ~ ɲi:	ni	ni	bʰa	*ni	OC *naʔ
3SG	-	pɛtɕ͡i̤	a^{i}	i ~ pʰetʃ͡u	ʔi	*ʔi	TM ʔi
1DU	-	ka:re:	-	-	-	-	-
1PL	*nəy	kaɲi: ~ kani:	ani ~ animihõŋ	ani ~ aɲijaahuŋ	ɲi; ani (SA)	*ka-ni	PNN *nəy
2PL	-	ni:; dʑ͡e:	dʒimihõŋ ~ dʒei	dʒi ~ ina ~ dʒiməʃuŋ	dʒo	*dʑ͡V	WT khyed
3PL	-	dʑ͡e:(mələŋ/ kadɨ)	a^{i}ra	inamehijaŋ ~ pʰaina ~ airaahuŋ	na	*na	WT kho-na, mo-na 3SG