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The origin and evolution of laterals in Proto-Naish[1]

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Abstract

This paper reconstructs Proto-Naish initials with lateral main consonants using data from three Naish languages: Lijiangba Naxi (LJ), Malimasa (MM), and Yongning Na (YN). The methodology of using conservative languages, such as Written Tibetan, Burmese, and rGyalrong, in interpreting sound correspondences is emphasized. At least five lateral initials should be reconstructed to Proto-Naish. Initial correspondences relevant to laterals are also discussed.

Keywords: Lateral; Naish languages; Tibeto-Burman languages; Historical phonology

1. Introduction

The genetic position of Naish languages is a long-debated question (Okrand 1974; Bradley 1975, 2008; Chen 1997; Li Yongsui 2011; Jacques and Michaud 2011; Li Zihe 2013a). A well-rounded reconstruction of Proto-Naish is needed to solve this question. Jacques and Michaud (2011) and Li (2013a) proposed two versions of reconstruction but reached different conclusions. As descriptions of Naish languages accumulate (Michailovsky and Michaud 2006; Michaud 2006, 2008; Mi Ke (米可) 2009; Lidz 2010; Michaud and Xu 2012; Li 2013b; Michaud and He 2015), new historical comparisons are needed to improve the reconstruction in the hope of providing more evidence for the discussion of genetic position.

The reconstruction of lateral consonants in Sino-Tibetan languages is often complex. Concerning Naish lateral initials, Jacques and Michaud (2011) reconstructed three proto-initials and found the trace of the impact of obstruent pre-initials on lateral initials. Li (2013a) argued there should be four proto-lateral initials in Proto-Naish but did not relate Naish lateral initials to their counterparts in conservative Tibeto-Burman languages. The evolution of laterals in Tibeto-Burman languages should be understood as a background in reconstructing Proto-Naish. Matisoff (1990), Jacques (2004), and Hill (2013) provided good summaries.

To reach a better understanding of the phonological history of Naish languages, the present study employs the lexicon material of three Naish languages: Lijiangba Naxi (LJ), Malimasa (MM), and Yongning Na (YN). The data related to Lijiangba Naxi are from Pinson (2012), who collected multiple varieties of the Lijiangba dialect ("dialect used in the Lijiang plain", named after He and Jiang 1985), hence making it a comparative

dictionary (although with a rather shallow time-depth) of Proto-Lijiangba Naxi. The Malimasa lexicon is based on my own fieldwork from 2011 to 2019. Lexical items in Yongning Na are from Michaud's (2015) dictionary. There are two reasons for choosing these three languages: first, these languages have a comparatively rich documentation of no fewer than 3,500 lexical items, making it possible to restore more Proto-Naish morphemes than did Jacques and Michaud (2011) and Li (2013a); and second, the experience drawn from Li (2013a), a preliminary reconstruction of Proto-Naish in which the three languages contribute more than the other two Naish languages (dialects) in reconstructing Proto-Naish phonology. Seen from the data available so far, a few Naish languages (dialects) other than the three mentioned here, such as Bowan Naxi (Zeng 2013) and Laze (Huang 2009, Jacques and Michaud 2011), may be potential beneficial complement to Proto-Naish and included in a more complete reconstruction in case a larger vocabulary is built.

In this paper, I first discuss the methodology that should be employed in reconstruction. Second, I list the observed correspondences involving laterals in Naish languages. Third, I relate Naish languages with conservative Tibeto-Burman languages such as Written Tibetan (WT), Burmese (Bur., Old Burmese whenever the data is available, or Written Burmese with an assumed proto- form), and rGyalrong (GR) to determine the specific proto-lateral initials that should be reconstructed to Proto-Naish. Finally, I discuss some other correspondences that may affect the reconstruction of lateral initials.

2. Methodology

Previous reconstructions were unable to restore all the initials and their evolutionary paths owing to insufficient collected morphemes. Therefore, "enrichment" is needed to collect as many morphemes as possible to provide a solid basis for further reconstruction. Li's (2013a) preliminary reconstruction, which sketched a general picture of the evolution of five Naish languages (dialects), can be regarded as a necessary preparation for a sophisticated reconstruction. Since most Sino-Tibetan languages do not have sufficient description material, a preliminary framework is needed for researchers to obtain a survey of a group of languages.

Some scholars advocate a step-wise reconstruction (Trask 1996, Campbell 1998), which is ideal for phonologically highly eroded languages such as the Naish languages. During the process of erosion, multi-stepped changes may take place, and the conditions of change may disappear as changes occur successively, erasing the condition of previous changes. Inverted reconstruction (Hockett 1958), that is, employing conservative relative languages in reconstructing low-level proto-languages, is needed to reach a better understanding of the evolutionary paths of the languages in question. Verner's (1875) reconstruction of the Proto-Germanic stress pattern, and hence the explanation of exceptions to Grimm's law, serves as an example of this methodology. I would like to add a principle: contrasts in daughter languages must be reconstructed to the proto-language; phonetic differences may be attributed to the proto-language when the restored processes of sound change support such reconstruction with the help of conservative relative languages. The discussion in Section 4 is carried out under this principle.

The tonal changes of Naish languages are so complicated that I have to leave them for further consideration when the changes in initials and finals are clearer to us. The reconstructed forms in the present study are not marked with tones.

3. Correspondence relating to laterals in Proto-Naish

Multiple correspondence rules can be identified among the three Naish languages. Four sets of contrastive correspondences can be attested in Proto-Naish:

- Set I: LJ. Lateral approximants or voiced fricatives; MM. Lateral approximants or voiced fricatives; YN. Lateral approximants or voiced fricatives or zero initial.
- Set II: LJ. Voiceless fricatives; MM. Voiceless fricatives; YN. Voiceless lateral fricatives.
- Set III: LJ. Lateral approximants; MM. Voiceless fricatives; YN. Voiceless lateral fricatives.
- Set IV: LJ. Lateral approximants; MM. Lateral approximants; YN. Voiceless lateral fricatives.

Examples with final correspondence (e: e: i) have been found in all four sets. Therefore, the four sets are in contrastive distribution, forming at least four initial categories in Proto-Naish.

Below I present a detailed analysis of the four correspondence sets with every confirmed example and speculate regarding the initial categories in Proto-Naish and their specific pronunciation.

3.1. Set I

Set I is a heterogeneous group consisting of seven non-contrastive correspondence rules (Table 1).

Some words listed above do not have parallel examples supporting their final correspondence, including (ɑː ɑː o), (ɯ: i: ɯ), and (u: o: ʯ). Table 2 provides some evidence from Naish languages.

In addition, (ɯ: i: ɯ) and (u: o: ʯ) are approximately parallel and supportive of each other from the perspective of the system.

Some morphemes in Table 1 are borrowings rather than retention from Proto-Naish. "Monk" is a Buddhist word and apparently a loanword from Tibetan, corresponding to WT *bla.ma*. This word is discussed in Section 4.2 below on the use of stratification. "Tiger" is a loanword from Austroasiatic languages (Jacques and Michaud 2011: 477). "Tea" is related to the etymon for "leaf" reflected by Lahu lɑ³¹. Benedict (1972) proposes that this word was derived from the root "leaf" reflected by Magar *hla* (and Jingpho *lap*). Sagart (1999), Matisoff (2003), and Wang and Wei (2017) all support this semantic innovation. However, scholars agree that this word exists in Proto-Tibeto-Burman regardless of whether it is a loanword. Therefore, it should be reconstructed to Proto-Naish.

The seven correspondence rules listed above are in complementary distribution, since no two examples share the same final correspondence. From another perspective, it is also true that the relevant final correspondences are in complementary distribution since no two examples share the same initial correspondence. This is a mutually conditional complementary distribution pattern. Wang (2007) proposes that in phonological generalization with the aim of historical comparison, one should set up two historical phonemes for each side of mutually conditioned categories to facilitate explaining sound laws. However, for Set I under discussion, if one distinct category is reconstructed for each correspondence rule, there will be a mass of initials in Proto-Naish. Naish languages have highly eroded initial and final systems and no early documents to rely on; hence, it is necessary to turn to related conservative languages to search for evidence to decide how many historical phonemes need to be reconstructed to Proto-Naish for these mutually conditioned correspondence rules. This step of inter-comparison, after the intra-comparison discussed in this section, is elaborated on in Section 4.

3.2. Set II

Set II covers two correspondence rules (Table 3).

Table 1. Correspondence Set I of Naish lateral initials

Initial corresp.	Final corresp.	Gloss	LJ	MM	YN
l: l: l	ɑ: ɑ: ɑ	monk	lɑ˧mɑ˧	lɑ˧mɑ˧	
		tiger	lɑ˧	lɑ˧	lɑ˧
		beat (people)	lɑ˩		lɑ˧˥
		spider	mɑ˧lɑ˧	mbɑ˧lɑ˧	bɑ˧lɑ˧
		capable	lɑ˩	lɑ˧	
		sorghum	lɑ˧nɑ˩	lɑ˧nɑ˩	
		rake	lɑ˧dʐɻ̩˩	lɑ˩ndʐɻ̩˥	
		group (people)	lɑ˩	lɑ˩	
		crotch	gɑ˧lɑ˩	gɑ˩lɑ˥	
		business	gɣ˧lɑ˩	zɚ˥lɑ˩	ɣ˧lɑ˩
	e: ɛ: i	rabbit	tʰo˧le˧	tʰu˩lɛ˩	tʰo˧li˧
		tea	le˥	lɛ˩	li˩
		crisp (n.)	kɑ˧le˩	kɑ˧lɛ˩	
	o: ɑ: o	valley	lo˩	lɑ˩kʰɣ˩	lo˧
		flush	lo˩	lɑ˩	
	ɣ: ɣ: ɣ	stone	lɣ˧	lɣ˧	lɣ˧
		maggot	lɣ˥	lɣ˩lɣ˧	
		to wind	lɣ˥	lɣ˧	lɣ˧
		flower bud	tɣ˥lɣ˧	tɣ˥lɣ˧	
	ɑ: ɑ: o	hand	lɑ˩	lɑ˩	lo˩
l: ɭ: l	o: u: o	work (n.)	lo˧	ɭu˧	lo˧
		to go over	lo˥	ɭu˩	
		yam	mjɑ˥lo˧	miɣ˩ɭu˧	
		thick	[lɑ˥]	ɭu˩	lo˧˥
	y: y: ɣ	CL (egg)	ly˧	ɭy˧	lɣ˧
		round		ɭy˩ɭy˧	to˩ko˩lɣ˧
	u: u: ɯ	horse fodder	lu˧	ɭu˩	lɯ˥
		beam	ku˧lu˩	u˥ɭu˩	zɣ˩lɯ˥
	ɯ: ɯ: ɣ	farmland	lɯ˧	ɭɯ˧	lɣ˧
		to plough	lɯ˩		lɣ˩
l: ɭ: j	u: u: o	a handful of	lu˧	ɭy˩	
		unit of weight (50g)	lu˧	ɭu˩	jo˩
l: l: ɬ	ɚ: a: a	table	[sɑ˧lɑ˩]	sɑ˧lɑ˩	sɯ˥ɬɑ˧
		seed	lɚ˥	lɑ˩	ɬɑ˩
	u: o: a	cushion	kʰu˧lu˩	kʰo˧lo˩	kʰwɑ˧ɬɑ˧
l: l: 0	ɚ: o: ɭ	fly (n.)	bɚ˩lɑ˥	mbo˩lo˥	bɣ˥ɭ̩˩
		cheek	lɚ˧be˩	lo˥be˩	pi˩ɭ̩˩
(zɿ:) l: z̩	(i:) a: a	road	[zɿ˧gɣ˧]	lɑ˩gɣ˧	zɑ˩tsɯ˥ "path"

Table 1. (*Continued.*)

Initial corresp.	Final corresp.	Gloss	LJ	MM	YN
l: ʐ̩: z̩	ɯː iː ɯ	heavy	luɨ	ʐ̩iꓶ	z̩ɯꓶ
	uː oː ɣ	four	luɨ	z̩oꓶ	z̩ɣꓶ
	ɯː oː ɣ	willow	luɨ	z̩oꓵ	z̩ɣꓶ

Notes to Table 1:

(1) LJ does not have a regular reflex for "cheek". The word listed above is from Baoshan Naxi (Li 2013a), which has a very similar phonology system.

(2) The reflex forms for "thick" and "table" have unexpected finals in LJ.

(3) YN has a word z̩ɣꓮ "road" which seems to have undergone irregular sound changes. Another variant z̩aꓴ of the morpheme "road" in the word "path" is a perfect match. YN does not contrast l- with z̩- before a (also before ɤ, see Michaud 2017, "Appendix A: Vowels and Consonants", pp. 447–86), therefore, the correspondence (MM l-: YN z̩-) can be regarded as a conditional variant of l-: l-. It can be assumed that Proto-Naish *l- became YN z̩- before YN -a. This also accounts for the facts that "road" shares the same origin as "valley" "hand" and "work (n.)" (shown in Table 8). But the reflex form in LJ has an unexpected final and has to be treated as an exception.

Table 2. Examples of final correspondences supporting the words in Set I

Final corresp.	Gloss	LJ	MM	YN
ɑ: ɑ: o	hand	laꓴ	laꓴ	loꓴ
	air	saꓵ	saꓴ	soꓭ

Table 3. Correspondence set II of Naish lateral initials

Initial corresp.	Final corresp.	Gloss	LJ	MM	YN
x: x: ɬ	e: ɛ: i	moon	xeɨ	xeɨ	ɬiꓵ
		ear	xeɨ	xɛꓴ	ɬiꓵ
		soul	xeɨ	xɛꓴ	ɬiꓵ
		rest	xeɨ	xɛꓵ	ɬiꓵ
		"to stop"			
	o: o: o	rib	xoꓴ	xoꓵ	ɬoꓵ
	o: ɑ: o	deep	xoꓵ	xaꓴ	ɬoꓭ
f: f: ɬ	ʋ̩: ʋ̩: ʋ̩	brain	fʋ̩ꓵ	fʋ̩ꓴ	ɬʋ̩ꓭ
		saw	fʋ̩ɨ	fʋ̩ɨ	

The two correspondence rules are apparently in complementary distribution. (f: f: ɬ) appears where the final is ʋ̩ in all three languages. LJ has a word ɕjɣꓴ which means "rest", but it is difficult to explain the existence of the medial -j-. Possibly ɕjɣꓴ is a loan-word from Chinese 閑 ɕiɛn¹ᵇ. Surely, Set II is derived from one single initial category in Proto-Naish.

Table 4 provides some examples supporting the final correspondences (o: o: o) and (o: ɑ: o).

3.3. Set III

Set III has only three examples involving one correspondence rule (Table 5).

Table 4. Examples of final correspondences supporting the words in Set II

Final corresp.	Gloss	LJ	MM	YN
o: o: o	rib	xo˩	xo˧	ɬo˧
	learn	so˧	so˩	so˩
o: a: o	deep	xo˥	xaʴ˩	ɬo˩
	valley	lo˩	laʴkʰʴ˩	lo˧
	to flush	lo˩	laʴ˩	

Table 5. Correspondence Set III of Naish lateral initials

Initial corresp.	Final corresp.	Gloss	LJ	MM	YN
l: x: ɬ	e: ɛ: i	trousers	le˧	xɛ˥kʰuɑ˧	ɬi˩qʰwʴ˩
	y: y: i	armspan	ly˩	xy˩	ɬi˩
	ɯ: ɛ: ?	arrow	lɯ˧	xɛ˧	

There is a word ʐe˧ "arrow" in Yongning. However, it is difficult to decide whether it is a regular reflex of the Proto-Naish "arrow".

Many examples in Sets I and II support the final correspondence rule (e: ɛ: i). Table 6 shows examples of the other two above-mentioned final correspondences (y: y: i) and (ɯ: ɛ: ?):

Table 6. Examples of final correspondences supporting the words in Set III

Final corresp.	Gloss	LJ	MM	YN
y: y: i	armspan	ly˩	xy˩	ɬi˩
	to push	my˥	my˩	mi˩
ɯ: ɛ: ?	arrow	lɯ˧	xɛ˧	
	real, good	gɯ˩	dʑiɛ˧	gi˩

3.4. Set IV

Set IV also has three examples involving one correspondence rule (Table 7).

Table 7. Correspondence Set IV of Naish lateral initials

Initial corresp.	Final corresp.	Gloss	LJ	MM	YN
l: l: ɬ	e: ɛ: i	musk deer	le˧	le˧	ɬi˧
		turnip	le˧by˩	le˧by˥	ɬi˩bi˩
		Bai (ethnic group)	le˧bʴ˧	lɛ˧by˧	ɬi˧bʴ˧

Examples supporting the final correspondence (e: ɛ: i) have been mentioned above.

The above four sets are correspondences related to laterals in Naish languages. Set I, possibly reflecting multiple phonemes in Proto-Naish, is complicated; Sets II, III, and IV are relatively simple. The next step is to relate the morphemes mentioned above to Written Tibetan and Burmese to decide how many proto-initials are included in Set I and the specific value of the proto-initials.

4. Interpretation of Proto-Naish lateral initials

In this section, I refer to WT, Bur. and GR to explain the correspondence rules proposed above.

In the search for cognates, nouns and verbs are analysed separately because the verb morphology may blur the sound laws. Although Naish languages and Bur. do not have inflections, WT has systematic conjugation in which prefixes that may severely affect the initial correspondence are often used. Therefore, the present study addresses nouns first and then discusses verbs based on the sound correspondences detected from nouns. The existence of inflexional prefixes cannot be ruled out in Proto-Naish, but it is practical that special correspondences at grammatical level can be better identified after discovering the correspondence rules at phonological level. A discussion on the possibility of verb inflection in Proto-Naish will be made in 5.2 and 5.3.

Morphemes of Bur. are from STEDT database or the word list in Hill (2019) (all converted in Hill's 2019 transcription system). Data of Burmic languages is from Huang (1992) unless otherwise specified. rGyalrong examples are from Jacques's (2015–16) dictionary of Japhug rGyalrong.

4.1. Proto-initials of nouns in Set I

In Set I, some morphemes have cognates in WT, Bur. or GR. These morphemes form Set Ia (Table 8).

Table 8. Set Ia, which has cognates in WT, Bur. or GR

Gloss	LJ	MM	YN	WT	Bur.	GR
valley	lo˩	lɑ˩kʰɤ˩	lo˧	lung		
hand	lɑ˩	lɑ˩	lo˩	lag	lak	tɯ-jaʁ
work (n.)	lo˧	ɭu˧	lo˧		lup	
road	ʐi˧gɤ˧	lɑ˩gɤ˧	ʐɑ˩tsɯ˥	lam	lamḥ	

Matisoff (2003: 287) proposed the *khyaung* "valley" in Bur., but identified it as a loanword from South Asia or Southeast Asia; therefore, it cannot be the source of the morpheme "valley" in Naish languages. Some Burmish languages preserve cognates with Naish languages, such as Achang *laŋ31* and Leqi *laŋ31*. Matisoff (2003) reconstructed *laŋ1* in Proto-Lolo-Burmish. Tangut 㦎 *lạ* (#3485 in Li Fanwen's 1997 dictionary. All Tangut character numbers mentioned hereafter are from the same source) is also a cognate of "hand". Therefore, a simple *l- can be reconstructed to Proto-Naish for Set Ia.

Some other morphemes in Set I have cognates with plosive initials in WT, Bur. or GR. They belong to Set Ib (Table 9).

Table 9. Set Ib, which has cognates with plosive initials in WT, Bur. or GR

Gloss	LJ	MM	YN	WT	Bur.	GR
cheek	lə˧be˩	ɭo˥be˩	pi˩ɻ̩˧	ldan	pāḥ	tɯ-ɣmba
stone	lɣ˧	lɣ˧	lɣ˧		kyok< *klok	

Conrady (Hill 2013) and Li Fang-kuei (1933: 149) argued that there was a change *'l > ld from Proto-Tibetan to Written Tibetan. Sun (1993: 334) supplemented a parallel change. Xiang Bolin (向柏霖) (2008) also supports this sound law. The morpheme "cheek" was mentioned in both Li (1933) and Xiang Bolin (向柏霖) (2008) as an example of Proto-Tibetan *'l-. The cognate in Proto-Naish may also have a nasal pre-initial or have lost it, without clear evidence from Naish languages. *pāḥ* in Bur. may be the source of another morpheme in the word "cheek" in Naish languages (LJ *be*˥: MM *be*˥: YN *pi*˩), which also corresponds to GR tɯ-ɣmba. The morpheme "stone" has an initial ky- in WB. Matisoff (2003: 70) argues that its initial was *r-l- in Proto-Tibeto-Burman and kl- in Burmese inscription and was later changed from -l- to -y- in WB. Some conservative Burmish languages support proto-initial *l-, for example, Leqi *luk31tsəŋ31* "stone" and Bola *lauʔ31taŋ55* "stone". Khaling also has a possible cognate for "stone" *lūŋ*. However, there is not sufficient evidence to decide whether this morpheme had a pre-initial in Proto-Naish.

The two above-mentioned morphemes should have had sonorant pre-initials in Proto-Naish, if there were any, rather than obstruent initials (see 4.2 for further details). Since they do not contrast with morphemes in Set Ia, it is also possible to assume that they did not have any pre-initial, which could explain their modern forms in Naish languages as well. I propose that the value of Set Ib is *(N)l-, with a possible (N) that stands for a sonorant pre-initial.

The morpheme "cushion" in Naish languages (see Table 1) may correspond to WT gtan/gdan "cushion". However, there has been no evidence showing that WT gt-/gd- was derived from proto-initials with l as the main consonant. The sound change of this morpheme remains problematic.

The morpheme "thick" in Naish languages (see Table 1) is also a suspected example. In WT, there is a morpheme mthong/'thong "tall", but Jacques and Michaud (2011) do not believe that it is related to the Naish "thick". Bur. *thū* "thick", which possibly corresponds to its WT counterpart, suggests that the morpheme "thick" in Naish languages may have a different origin.

In addition, four morphemes in Set I have cognates in WT with alveolo-palatal affricates or fricatives as their initials and l- initial in Bur. or GR. They form Set Ic (Table 10).

Benedict (1939, 1972) proposed that WT bzhi "four" is related to Bur. liy "four". Gong (1977) and Jacques (2004) generalized four "lateral palatalization" rules in the change from Proto-Tibetan to WT: *lj->zh-, *lhj->lc-, *nlj->lj-, and *pl->phy-. Two of the above four morphemes have undergone Benedict's Law in Tibetan, namely, *ljing "farmland" and *blji "four". Another two, *ɦlji "heavy" and *ɦlang "willow", have undergone Conrady's Law (Hill 2013). The initials of these morphemes in Naish languages reflect the stage before lateral palatalization occurred. Four of the five morphemes in Bur. have the l- initial, which serves as part of the evidence for lateral palatalization, suggesting that the initial in Proto-Naish should be lateral.

Table 10. Set Ic, which has cognates with alveolo-palatal initials in WT and l- in Bur. or GR

Gloss	LJ	MM	YN	WT	Bur.	GR
farmland	luɯ˦	ʎuɯ˦	lʏ˦	zhing	lay "paddy field"	tɯ-ji (< *lji)
four	lu˦	zo˦	zʏ˦	bzhi	liy	kuβde (< *kə-ptlej)
heavy	luɯ˦	zi˦	ʐɯ˦	lcid	leḥ < *liyḥ	-rʑi
seed	lə˥	la˩	ɻa˩	ljang "seedling"		
willow	luɯ˦	zo˥	zʏ˦	lcang	-lā "poplar"	

"Seed" has an initial lj- in WT and *nlj- in Proto-Tibetan according to Conrady's Law. No cognate has been detected in Bur. but has been found in some Burmish languages, such as Achang *li55* "seedling" and Xiandao *li31* "seedling", and in turn is related to Naish languages. This adds to the evidence for lateral palatalization.

Similar to Set Ib, a pre-initial N- is needed as a condition of Conrady's Law 'l > ld, but it may either exist or have been lost at the stage of Proto-Naish, since no effect on the initial of "heavy", "seed" and "willow" has been detected in Naish languages. "Four" possibly lost its pre-initial at the Proto-Naish stage, or it should have reflexes with voiceless fricative initials in Naish languages (see the discussion of Set II in 4.2). If "four" kept its pre-initial in Proto-Naish, a medial *-j- must be reconstructed since it has to serve as a condition for the change of the pre-initial other than Set II. In addition, "heavy" and "four" have retroflex initials, which may result from the change of *-j-. Therefore, it is better for us to reconstruct a medial *-j- for the proto-initial.

Another morpheme worth mentioning is "beautiful": LJ *lɤ21*: MM *iʐ21*: YN *ɣ35*. This initial correspondence cannot be supported by a parallel example in Naish languages. WT has *mchor* "beautiful", which may be another example of lateral palatalization, but evidence of the final correspondence is still lacking. Bur. has *lha* "beautiful" with a lateral initial, but Bur. voiceless laterals probably evolve from obstruent + lateral clusters. Therefore, this example is also dubious.

To conclude, the correspondence rules among Naish languages, WT, Bur., and GR detected in Set I can be summarized as follows. The proto-initials generalized are shown in Table 11.

The correspondence rule (l: l: l) appears in both Ia and Ib, supporting the idea that Ia and Ib may be the same proto-initial. (l: ʎ: l) appears in both Ia and Ic, possibly because of the medial -j-, which caused changes in the final and then, in turn, caused the initial change. "Farmland" in Ic may have a nucleus *i in Proto-Naish, similar to WT. Then, the palatal medial *-j- made the nucleus move backwards to ɯ and then disappeared. Finally, ɯ caused the initial to become retroflexed, merging with the initial of "farmland".

The correspondence rule (l: l: ɻ) does not have an example related to WT or Bur. The only difference from (l: l: l) lies in the fact that YN has ɻ rather than l. Michaud (2008) argues that ɻ and l are in nearly complementary distribution; contrast is caused by Chinese loanwords. Therefore, I believe that the two correspondence rules are reflects of one proto-initial at the stage of Proto-Naish, namely, *l-.

4.2. Proto-initials of nouns in Set II

Most morphemes in Set II have cognates in conservative languages with the main initial consonant l or n, as well as an obstruent pre-initial in WT and s- or r- in GR (Table 12).

Table 11. Summary of the correspondence rules among Naish languages, WT, Bur. and GR detected in Set I

No.	Naish corresp.	WT (Main consonant)	Conditions in WT	Bur.	GR	Proto-Naish
Ia	l: l: l l: ʎ: l (ʐ:) l: ʐ	l		l	l	*l
Ib	l: l: l l: ʎ: j l: ʎ: 0	d				*(N)l
Ic	l: ʎ: l l: ʐ: ʐ	c、zh	Medial -j-	l	l	*lj

Table 12. Set II, which has cognates in WT, Bur. or GR

Gloss	LJ	MM	YN	WT	Bur.	GR
moon	xe˧	xɛ˧	ɬi˧	zla	la	sla
soul	xe˧	xɛ˩	ɬi˧	bla	lip-prā "butterfly, soul"	tu-rla
rib	xo˩	xo˧	ɬo˧	glo "side, flank"/snam		tu-rnom
brain	fv̩˥	fv̩˩	ɬv̩˦		ūḥnhok < *ˀnuk	tu-rnoʁ
saw	fv̩˧	fv̩˧				
ear	xe˧	xɛ˩	ɬi˧	rna	nāḥ	tu-rna
deep	xo˥	xɑ˩	ɬo˦		nak	rnaʁ

In this table, the morphemes can be further divided into two subsets. "Moon" and "soul" have laterals as the main initial consonants in all three relative languages, while "brain", "ear", and "deep" have nasals. "Rib" remains problematic: it may correspond with the WT snam (Jacques and Michaud 2011). However, WT sn- is more likely to correspond to n- in Naish languages, e.g. WT *sna*: LJ *ɳi˥*: MM *ny˦*: YN *ɲi˦* "nose"; WT *snying*: LJ *nv̩˥*: MM *nv̩˦*: YN *nv̩˩* "heart". WT rn- is a better counterpart of x- in Naish languages. In addition to "ear" listed in the table, there are two more examples: LJ *xy˩*: MM *xi˦*: YN *hv̩˥˦*: WT *dma*: Bur.: *nī*: GR. *ɣu-rni* "red"; LJ *xu˥*: MM *xu˦*: WT *rnams* "many, group (of people)". Therefore, WT *glo* is a possible cognate of "rib" of Naish languages.

Since in many cases WT sn- corresponds to Proto-Naish n-, "brain", "ear", and "deep" should be considered examples that have undergone the change from nasal to lateral after a pre-initial other than s-, possibly r-, as GR suggests. Therefore, the change **rn > Proto-Naish *Cl- should be assumed. The motivation for the change may be a dissimilation caused by sonorant-sonorant sequence, and then the **r- changed to an obstruent-like sound. Although no Naish language confuses n- with l-, it is possible to assume such a typologically common sound change before the stage of Proto-Naish.

WT *klad* "brain" may be a possible cognate of its Naish counterparts, but the final correspondence has not been attested.

In Bur., these morphemes have l-, nh-, or n- as initials. Since WB has undergone a dramatic reduction in the initial consonantal clusters, I believe that the proto-form of initials of these morphemes should be obstruent+l clusters.

Tangut also shows the two sources of this initial. "Moon" 𗱠 *lhji* (#2814), which corresponds to WT, Bur. and GR apparently belongs to the lateral subset, while "ear" 𗼑 *nju* (#4681) shows that it should have been a nasal at the Proto-Tibeto-Burman stage. The problematic "rib" seems to derive from a nasal from the evidence of Tangut cognate 𗾩 *no* "rib" (#2519).

Therefore, a single Proto-Naish initial can account for the correspondence generalized by Set II. The proto-form should be *Cl-, where C- stands for an obstruent pre-initial.

I have not yet related "deep" in Naish languages to any morpheme in WT. In Jäschke (1980 (1881)), there is *rnyog* "thick, turbid", which is consistent with the correspondence rule but differs considerably in meaning. WT has another morpheme *gtong* "depth, bottom" for which a *gl- > gt rule should be proposed but is not supported by parallel examples such as "rib" and "soul". Evidence from Naish languages shows that at the stage of Proto-Naish, the initials of "ear" and "deep" are the same as the morphemes discussed above; therefore, I believe that the initials of these two morphemes merged with *Cl- no later than the stage of Proto-Naish.

"Monk" in Naish languages is apparently a loanword from Tibetan, corresponding to WT *bla.ma*. The correspondence rule is WT bl-: Naish l-. This is further evidence showing

that the correspondence rules I proposed above effectively distinguish loanwords from cognates.

4.3. Proto-initials of nouns in Set III

Two morphemes in Set III have cognates in WT with the main initial consonant d as well as a nasal pre-initial and an initial l- in Bur. or GR. Another one has rl- in WT (Table 13).

"Arrow" and "arm span" are examples of Bodman's Law (Bodman 1980; Hill 2011: 450), which requires a pre-initial *m- as the condition. Therefore, these morphemes must have an *ml- initial in Proto-Tibetan. The counterpart in Bur. also supports the idea that the proto-initial should be a lateral sound. rGyalrong *l- can also be restored from internal evidence of rGyalrong dialects (Jacques 2004). Tangut 𣀜 *lji̱* (#5710) can also serve as an evidence.

"Trousers" is a compound in both Malimasa and Yongning. The comparable morpheme in the compound probably has the meaning "thigh". This morpheme did not undergo Bodman's law possibly because there is a pre-initial b-, which in turn prevented r- from being lost. Bur. does not have a corresponding morpheme, but in some conservative Burmish languages, the morpheme "trousers", similar to Achang *l̥ɔ31* and Leqi *l̥o55*, may be related to that in Naish languages. Tangut 𣀜 *lji̱* (#1388) also suggest that the proto-initial should be a lateral.

In all, the proto-initial reflected in Set III should have a lateral as the main initial consonant. The difference in reflexes from the previous two sets should have resulted from a nasal or liquid pre-initial. Li (2013a) discovered Set III and reconstructed a proto-initial *C_1l- to summarize it and later proved that *$C1$- is a nasal with the placement of articulation different from that of the main consonant (Li 2019). Therefore, the pre-initial in question should also be a nasal. The pre-initial of the morpheme "thigh" may have become nasal at the stage of Proto-Naish due to a sporadic change.

However, this proto-initial cannot be reconstructed as *Nl- because of the origin of WT 'd- cannot be 'l-, which later changed to ld-, as Hill (2011) proposed, and Proto-Naish faces the same problem if an *N- is reconstructed. Sparked by the reflexes in Naish languages, I suppose that in Proto-Naish, this proto-initial has a voiceless lateral l̥ as the main consonant, and the same is true in Proto-Tibeto-Burman, since the reflexes in Malimasa and Yongning are voiceless fricatives. This proto-initial of Proto-Naish can be reconstructed as *Nl̥-, where *N- stands for a nasal pre-initial. The nasal pre-initial may have changed to *h- in Malimasa and Yongning, due to the assimilation effect from the voiceless lateral, and then merged with Set II (*Cl-), resulting in similar reflexes. The *h- stage can be supported by Guiqiong *hɔ̃55* "arm span", Xide Yi *hi33* "arrow", Kelun *khli55* "arm span" and *khli31* "arrow", which further changed from *h- to *kh-. In Lijiangba, however, *N- may have made the voiceless lateral voiced, then merged with Set Ib (*(N)l-) and finally became l-.

It is unlikely that the initial in Proto-Naish still keeps the medial *-j-, although it can be reconstructed to Proto-Japhug (Jacques 2004) and reflected in Old Chinese (Hill 2013), since no effect of *-j- can be detected in the reflexes in Naish languages.

Table 13. Set III, which has cognates in WT, Bur. or GR

Gloss	LJ	MM	YN	WT	Bur.	GR
arm span	ly˩	xy˩	ɬi˩	ʼdoms "fathom"	laṃ "fathom"	tɯ-ɹom < *tljam
arrow	lɯ˦	xɛ˦		mda	mlāḥ	tɯmɲa < *-mlja
trousers	le˦	xɛ˥kʰuɑ˦	ɬi˩qʰwɤ˧	brla "thigh"		

Table 14. Set IV, which has cognates in WT, Bur. and GR

Gloss	LJ	MM	YN	WT	Bur.	GR
musk deer	le˧	le˧	ɬi˧	gla		
turnip	le˧by˩	le˧by˥	ɬi˩bi˧	la phug	mun lā u	
Bai (ethnic group)	le˧by˧	le˧by˧	ɬi˧by˧			

4.4. Proto-initials of nouns in Set IV

The correspondence of morphemes in Set IV with WT, Bur. and GR is illustrated in Table 14.

It is difficult to explain the correspondences of Set IV. "Musk deer" has an obstruent +l initial cluster in WT (and in Tangut 㲘 *lha* [#5167] "deer"), and should have a counterpart with a voiceless fricative initial in Naish languages, like Set II, but actually both YN and MM have an initial l-. Jacques (2008) proposed a *g- prefix in animal names, e.g. WT *glag* "eagle" which is comparable to Japhug Rgyalrong *qa-ljaʁ* "eagle". It is possible that the pre-initial g- in WT *gla* is a trace of the prefix, and remained as a prefix at the stage of Proto-Naish. In LJ and MM the word completely lost the prefix and merged with *l-, but YN kept it to a later stage and finally became a lateral fricative as a reflex of *Cl-.

"Turnip" deserves some discussion. It seems to have a close relationship with its Chinese counterpart 蘿蔔 *luó bō* < Middle Chinese (MC) *la bjuwk*. The first syllable in Old Chinese (OC) is *rˤaj (Baxter and Sagart 2014), in which the vowel a corresponds to WT a, Bur. a and Naish (e: ɛ: i) (see Jacques and Michaud 2011), and the initial r- corresponds to WT r-, Bur. r-, or WT Cr-, Bur. Cr-. The examples of correspondence Set V (see 5.1) illustrate this pattern clearly:

- "to measure": Chi. 量 *liáng* < MC *ljang* < OC *raŋ: WT *grangs* (√*sgrang*): Bur. *khraṅ* (Hill 2019: 284).
- "dragon": Chi. 龍 *lóng* < MC *ljowng* < OC *[mə]-roŋ: WT *'brug*.
- Also the problematic "bone": Chi. 律 *lǜ* < MC *lwit* < OC *[r]ut: WT *rus*: WB. *ruiḥ* (< OB. *ruiw*) (Hill 2019: 215).

Therefore, WT *la* and WB *lā* are unlikely to be cognates of Chinese but rather early loanwords. Similar cases, such as Hani "mule" and "gong", have been identified as early Chinese loans (Sagart and Xu 2001). The cognate in Proto-Naish, if there is one, should have an *r- initial (see the correspondence of Set Ib). Actually, LJ and MM have regular reflexes of *r- but YN does not. It is inappropriate to attribute this irregularity to YN itself since some adjacent languages also show lateral fricative initials in the word "turnip": Namuyi ɬi⁵⁵ bi⁵⁵, Xumi ɬɛ³³ bɛ⁵³, Pumi ɬe¹³ bɛ¹³ (Sun et al. 1991). No hypothesis of a pre-initial has been made to the reconstruction of this words in Sino-Tibetan, therefore, a better explanation may be an areal feature, or an innovation of "Na-Qiangic" (Jacques and Michaud 2011).

The second syllable in Old Chinese is *bˤok (Baxter and Sagart 2014). There has not yet been sufficient evidence to establish Sino-Tibetan obstruent correspondences. Hill (2019) provides four examples to be reconstructed *b-, from the correspondence OC. b- or ph-: WT b-: WB. b-, of which three have possible cognates in Naish languages:

"bee": LJ ba˧: MM biu˧: WT *bya* "bird": WB. *pyāḥ* < *byāḥ*
"insect": LJ bv̩˥: MM bi˩: YN bv̩˧: WT *'bu*: WB. *puiḥ* < *buwḥ* < *buwkəḥ*: Chi. 蝮 *fù* < MC *hjuwk* < OC *pʰuk < *pʰukə "a kind of snake"
"burn": LJ mbə˩: MM dʐo˩: YN dʐv̩˧: WT *'bar* < *'bər*: WB. *pa* < *ba* < *bar* < *bər* "shine": Chi. 焚 *fén* < MC *bjun* < OC *bən

The correspondences shown above also suggest "turnip" in WT and Bur. are loanwords representing later sound changes. But the b- initials in Naish languages form a perfect match with Chinese.

It is unlikely that Naish borrowed the word "turnip" from Tibetan. Naish has a voiced initial in the second syllable, which is unlikely to be the result of borrowing from Tibetan ph-. The Tibetan final -ug in the second syllable is also difficult to become (y: y: i) since different correspondences can be detected:

"poison": WT dug: LJ dʑʌ˩: MM dʑʌ˩: YN dʑʌ˧˥
"to arrive": WT √thug: LJ tʰʌ˩: MM tʰʌ˩: YN tʰʌ˧
"bladder": WT lgang phug: LJ sə˧pʌ˩: MM suɯ˧pʌ˩: YN suɯ˧pʌ˩

In summary, considering the regularity of sound correspondence, "turnip" in Naish languages may be cognate with Chinese, or at least very early Chinese loanwords, even earlier than the time when it was borrowed to WT or Bur.

The name of the Bai ethnic group is not borrowed from the Bai language but has to be attributed to an innovation in Naish languages.

I temporarily reconstruct an initial ḷ- for Set IV in consideration of the lateral fricative reflex in Yongning, and the uncertainty of the existence of a prefix/pre-initial. This correspondence appears only under the condition that the final correspondence is (e: ɛ: i), but not every case of this correspondence.

4.5. Initials of verbs

Three of the verbs mentioned above are related to WT. An individual discussion on the correspondence is needed.

(1) "To flush": this morpheme is a verb in Naish languages but an adjective in WT. The initial correspondence is consistent with Set Ia: LJ lo˩: MM laʑ: WT *long*. It should have an initial *l- in Proto-Naish.

(2) "Horse fodder": this morpheme is a noun in Naish languages but corresponds to the WT verb "to lick": Present. *ldag*, Perfect. *bldags*, Future. *bldag*, Imperative. *ldogs*. Coblin (1976) reconstructed the stem as **ldag* and argued that the present form had lost its prefix '-. Li Fang-kuei (1933) believed that WT ld- derived from the Proto-Tibeto-Burman *l-; therefore, the sound change that "to lick" underwent was **lag > ldag*. Gong's (2001) reconstruction of this morpheme is **N-lag*. Bur. has a related morpheme, *yak*, which has reflexes in Achang *liap55* and Xiandao *lɛʔ55*. This supports the fact that this morpheme has a lateral initial in Proto-Tibeto-Burman. "Horse fodder / to lick" meets the sound law generalized for Set Ib in 4.1; therefore, it should have an *(N)l- initial in Proto-Naish.

(3) "Rest": The cognate in WT is *'dug* "stay, sit down". It does not have an inflection but an honorific form *bzhugs*, which is another attested example of "lateral palatalization" (*bzhugs < *bljugs*, Hill 2011: 450). Naish languages have morphemes corresponding to the honorific form of WT: LJ ɕiʁ21: MM xe33: YN ɬi33: WT *bzhugs*, as WT 'd must have derived from *'l- (Li Fang-kuei 1933). If the correspondence is correct, "rest" must be a Set II word in Proto-Naish with the *Cl- initial. A potential cognate *nuna* in rGyalrong also suggests *Cl- in Proto-Naish. However, LJ ɕiʁ21 may be a Chinese loanword that should not be used in reconstruction. It is therefore necessary for us to check other Naish languages for a more definitive answer.

In addition, "bone" in Naish languages may be a cognate with WT and Bur.: LJ *lo33*: MM *lɯ33*: YN *ʐ̃33*. WT has *rus* "bone" and OB has *ruiwḥ* "bone". However, a parallel example has not been detected. More evidence is needed for further discussion.

5. Discussion on relevant proto-initials

5.1. *r- relevant to laterals

This set of correspondence, namely Set V, is very similar to Set I: LJ. Lateral approximants; MM. Lateral approximants; YN voiced fricatives. But it contrasts with Set I. Therefore, this set must reflect a different proto-initial.

These two morphemes, although they have different initials, have -r- medials in related conservative languages. They also have regular final correspondences parallel to "seed" (Table 10) and "brain" (Table 12) respectively. It is therefore reasonable to assume that the two morphemes have *r- at the stage of Proto-Naish and evolved from *Cr- (C stands for plosives) in Proto-Tibeto-Burman.

5.2. Alveolar plosives relevant to laterals

In 4.3 on the discussion of Set III, it was mentioned that WT 'd- may originate from Proto-Tibeto-Burman initials with a voiceless lateral as the main consonant. Examples of these initials have cognates in Naish languages with voiceless lateral initials. Does WT 'd- have origins other than the voiceless lateral? Another set of cognates between Naish languages and WT provides answers to this question (Table 16). I call it Set VI.

The final correspondence (o: o: o) can be supported by a parallel example "rib" in 3.2; (ɣ: ɣ: ɣ) has parallel examples "brain" and "saw". (ɯ: ɚ: ɯ) has the example shown in Table 17.

All three morphemes mentioned in Table 16 are verbs that have a conjugation in WT. The alternations are illustrated in Table 18.

All three verb roots have alveolar plosives as the main consonants of the initials, which is similar to Set Ib in 4.1. Have the three morphemes undergone the change lateral > stop? I do not think this is the case. First, the pre-initial '-, which seemingly serves as the condition of the lateral > stop law, is actually a prefix of these morphemes instead of an inherent part of the root. Second, "to gouge" has a cognate in Bur. *tu3* that also has an

Table 15. Correspondence of set V, which has cognates with -r- medials in WT or Bur.

Initial corresp.	Final corresp.	Gloss	LJ	MM	YN	WT	Bur.	RG
l: l: ʐ(w)	ɚ: a: a	to measure	lɚ˥	la˧	ʐwa˧ "to weigh"	√sgrang	khraṅ	
	ɣ: ɣ: ɣ	dragon	lɣ˩	lɣ˩	mɣ˧bɣ˧(ʐɣ˥)	'brug		

Note: YN does not have a *ʐɣ syllable, therefore, the word "dragon" and "to measure" can be summarized as one correspondence rule (l: l: ʐ(w)). "Road" (see Table 1) cannot be an example of this rule since YN contrasts ʐwa with ʐa.

Table 16. Correspondence set VI of Naish lateral and alveolar plosive initials

Initial corresp.	Final corresp.	Gloss	LJ	MM	YN	WT	Bur.	GR
d: ɭ: d	o: o: o	to see	do˩	ɭo˩	do˧	See Table 18		mto
	ɯ: ɚ: ɯ	to get	dɯ˧	ɭɚ˧	dɯ˧	See Table 18		rndu
	ɣ: ɣ: ɣ	to gouge	dɣ˧	ɭɣ˧	dɣ˥	See Table 18	tūḥ "to dig"	

Table 17. Examples of final correspondences supporting the words in Set VI

Final corresp.	Gloss	LJ	MM	YN
ɯː ɚː ɯ	to get	dɯ˧	lə˧	ɖɯ˧
	buckwheat	ə˩gɯ˩	ia˧dʐɚ˧	jɤ˩gɯ˩

Table 18. Conjugation of WT verbs in Table 16

Gloss	Present	Perfect	Future	Imperative	Reconstructed root (Coblin 1976)
to see	lta <*'lta	bltas	blta	ltos	lta
to get	'thob	thob	'thob	rnyed	--
to gouge	'don	bton	gdon	thon	don/thon

alveolar plosive as its initial. This suggests that from the Proto-Tibeto-Burman stage, this set of morphemes has alveolar plosives as the main initial consonants.

Moreover, there is another initial correspondence rule (d/ɖ: d/ɖ: d/ɖ) among Naish languages, which is related to WT d-. Additionally, there is (nd: d: d), which is related to WT ld- or rd-. See Tables 19 and 20.

From Tables 19 and 20, Set VI in Naish languages is related to WT '-+alveolar plosives. Consequently, it is clear that for the three morphemes listed in Table 19, it is the present forms of WT verbs that are in line with the sound correspondence. The presence of *N- in Proto-Naish explains the correspondence: *N- is lost in LJ and YN without having an effect on the main initial consonant, which remains plosive, but instead, the feature "sonorant" is transferred to the main initial consonant in MM and makes it a lateral, hence the correspondence (d: l: d). Li Zihe (2013a) detected the correspondence and reconstructed it as $*C_1d$ and then proved it to be a nasal (Li Zihe 2019). It should be reconstructed as *Nd-, consistent with the principle in Section 4.

Table 19. Correspondence of Naish alveolar plosive initials

Initial corresp.	Final corresp.	Gloss	LJ	MM	YN	WT	Bur.	GR
d/ɖ: d/ɖ: d/ɖ	ɚː aː a	dirt	ɖɚ˩	dɑ˩	ɖɑ˩	drag		droŋ "dirty"
	ɑː ɑː ɑ	to weave	dɑ˩	dɑ˩	dɑʎ	See Table 20		taʁ
nd: d: d	oː oː o	fool	do˩	do˩	do˧ "foolish"	ldong "blind" See Table 20	thoṅḥ	ɣnda
		to smash	ndo˥	do˩				

Table 20. Conjugation of WT verbs in Table 19

Gloss	Present	Perfect	Future	Imperative	Reconstructed root (Coblin 1976)
to weave	'dogs	btags	gdag	thogs	*dag/thag
to smash	rdung	brdungs	brdung	rdung(s)	*rdung

However, because some verbs in Naish languages correspond to the present form of WT, a new question arises: did verbs in Proto-Naish have inflection? Li Zihe (2019) raises a similar question. If verbs in Proto-Naish were conjugated, more evidence should be accumulated to restore the conjugation pattern. If Proto-Naish verbs did not have inflection, we have to examine whether these verbs are loanwords from Tibetan. In the surrounding Kham Tibetan dialects, most inflections of verbs have disappeared. Reflexes of WT verbs in these dialects are derived from the WT present forms. It is possible that from these dialects, Naish languages borrowed words.

The sound change of alveolar plosives and laterals from Proto-Tibeto-Burman to WT and Proto-Naish can be generalized in the way shown in Table 21.

5.3. Fricatives relevant to laterals

Another Proto-Naish initial that has reflexes with the fricative initial in Naish languages also has a close relationship with laterals through correspondence with WT and WB. The correspondence set that supports this proto-initial is named Set VII (see Table 22).

There are two possible cognates in WT. "To patch" did not have a reconstructed root in Coblin (1976). I reconstruct *lan for this root according to the conjugation patterns generalized in this study. However, this root cannot explain the correspondence between WT l- and the Naish fricative initial. A possible solution is to relate the WT present form with gl- to the Naish fricative initial, which was attested in Set II. This repeats the question raised in 5.2, that is, I have to assume that either Proto-Naish verbs have inflection or the word "to patch" is a loanword.

The morpheme "wide" has a relatively simple history: the cognate in WB has an initial ky- that evolved from kl-, which is parallel to "stone" discussed in 4.1.

The proto-initial reflected by Set VII, despite it having fricative reflexes in all three Naish languages, differs in the placement of articulation from Set II. One possible explanation is that the cognates of Set VII in WT have nasal coda, while related morphemes of Set II in WT have plosive coda or no coda (see 4.2), which forms a condition for different changes in the initial. Another possibility is that Sets VI and II represent two historical strata, especially the initial correspondence of "to patch", which may be the result of borrowing.

Table 21. Generalization of the sound change of alveolar plosives and laterals

Proto-Tibeto-Burman (main initial consonant)	Condition (pre-initial)	WT	Proto-Naish
d-	Nasal	'd-	Nd- (possible loan)
	Liquid	ld-, rd-	nd-
	Obstruent or zero	gd-, d-	d-
l-	Nasal	'd-	(N)l-
	Obstruent	gl-, kl-, bl-, zl-, ...	Cl-

Table 22. Correspondence Set VII of Naish fricative initials

Initial corresp.	Final corresp.	Gloss	LJ	MM	YN	WT	Bur.	GR
f: x: h	ɣ: uɑ: uɤ	to patch	fɣ˥	xuɑ˧˥	hwɤ˥	See Table 23		
		wide	--	xuɑ˩	hwɤ˩	klong	klay	jom

Table 23. Conjugation of WT verbs corresponding to the Naish "to patch"

Gloss	Present	Perfect	Future	Imperative	Reconstructed root (Coblin 1976)
to patch	glon	glan	glan	glon	<*lan>
to fix	slan	bslan	bslan	slon	*slan

5.4. Uvular or glottal obstruents relevant to laterals

There are another two morphemes, namely, "dung" and "tongue", which are relevant to lateral initials but may have changed to obstruents at the stage of Proto-Naish (see Table 24).

Table 24. "Dung" and "tongue" in Naish languages and related languages

Gloss	LJ	MM	YN	WT	Bur.	GR
dung	tɕʰɚ˩	kʰe˩	qʰe˩	lci	khliyḥ< *kliyḥ	tɯ-ɣli
tongue	ɕi˥	ɕi⤋	hi˩	lce	lhya-	

Cognates in Bur. suggest that these two morphemes should have had lateral initials. Benedict (1972) proposed a path of sound change of "dung", attributing the resulting c in WT to *s-khli > *sklji > *hlji > lci. Naish languages seem to have stopped halfway at the *hlji stage and then became *hi or *qhi in Proto-Naish. The change from *s-khli to *hlji must have occurred prior to the Proto-Naish stage, or *sklji or *hlji would have merged with Set II (*Cl-), but no trace of a lateral has been preserved at the Proto-Naish stage. "Tongue" may have undergone a change parallel to "dung". Therefore, they probably derived from lateral initials but changed to obstruents at the Proto-Naish stage.

6. Conclusion

This paper illustrates how to reconstruct highly eroded languages from two pieces of evidence: contrasts in daughter languages are reconstructed to the proto-language; and conservative relative languages are employed to decide whether phonetic differences reflect contrasts in the proto-languages. Under this principle, at least five proto-initials with lateral main consonants have been reconstructed to Proto-Naish. Initials with laterals as the main consonants in Proto-Naish are summarized in Table 25.

Table 25. Initials with laterals as the main consonants in Proto-Naish

Set	Initial	Sound change
Ia	*l-	**l-
Ib	*(N)l-	< ** (sonorant pre-initials+) l-
Ic	*lj-	< ** (sonorant pre-initials+) lj-
II	*Cl-	**Cl-, *Cl- < **rn-
III	*N̥l-	** nasal or liquid pre-initials+ l̥-
IV	*l̥-	

Relevant initial correspondences are discussed, including the Proto-Naish *r-, which also became l- or ẓ- in Naish languages but still contrasts with reflexes of proto- lateral initials, the Proto-Naish *Nd-, which became lateral in some Naish languages, a possible conditional change from the Proto-Naish *Cl- to fricatives in syllables with nasal codas, and a possible early change from *s-khlji to *qhi or *hi prior to the Proto-Naish stage.

Given the complexity of Naish languages, more morphemes must be collected to reach a more systematic reconstruction and a better understanding of Naish historical phonology.

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