

Proto-Ersuic and Doshu

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In Yu (2012), I reconstructed the ancestor of Ersu, Lizu, and Doshu, based primarily on those varieties of Ersu and Lizu with sufficient available lexical data; unfortunately, there was not enough Doshu data available to allow finding patterns of regular sound correspondence. Yu 2012, Appendix A.2, presented an exhaustive but short list of Doshu words that had been documented and transcribed using the IPA.¹ The assumption (following Sūn 1982) was that the lexical similarities were sufficient to place Doshu in this subgroup, and that, should more data become available, the reconstruction could be refined to incorporate it. Since 2012, Chirkova and Handel (2013a), Chirkova and Handel (2013b), Chirkova (2014), Chirkova (2015), and Chirkova and Handel (2016) have released data from Doshu, making such an endeavor now possible.

However, not everyone has been as optimistic that Doshu's genetic affiliations can be so easily resolved. Some skepticism is fair, given the brevity of the aforementioned wordlist, but some scholars have expressed doubt that Doshu even belongs in the same branch of Tibeto-Burman as Lizu and Ersu. Huáng and Yǐn (2012:83) conclude that Doshu is not a dialect of Ersu, nor a Qiangic language, but closer to Loloish, based on their lexical and syntactic comparisons and the lack of directional verb prefixes. Similarly, Thurgood (2017:17), taking directional verb prefixes as a primary diagnostic, expresses the view that “the innovated directional verb prefixes and other evidence leave Duoxu outside of not just Proto-Ersuic but outside of Proto-Qiangic”. At the opposite end are papers such as Chirkova and Handel 2013a, etc., which *assume* a close relationship among Doshu, Lizu, and Ersu, but offer insufficient evidence to convince other scholars of that relationship.

With the data now available, I believe it is time to settle the question of Doshu's genetic affiliation in the only way possible: by establishing a sufficient number of sound correspondences and series of sound changes connecting Doshu with Lizu and Ersu and reconstructing their common ancestor. As it turns out, not only is this possible, we can actually do this with minimal revisions to the reconstruction provided in Yu 2012.

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¹Nishida 1973 analyzes an 18th century wordlist containing Tibetan alphabetic and Chinese character transcriptions of Doshu, but this material is ill-suited for reconstruction.

1 A Brief Overview of Doshu

Doshu (**doɭɕu**, cf. Sūn 1982; aka “Tosu” per Nishida 1973; or the pinyinized “Duoxu” per Chirkova), is a moribund language spoken in Mianning County, Sichuan.² The phonology of Doshu is outlined in both Chirkova 2014 and 2015; note, however, that the transcription system used in the pre-2015 papers differs from that used in 2015 and 2016. The Doshu transcription used in this paper will be based on the slightly older system, since it tends to represent the phonetic values more closely,³ which makes comparative work easier.

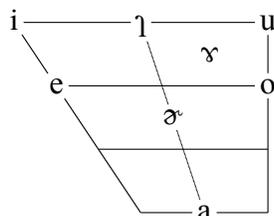
1.1 Phonology

The phonological inventory of Doshu is presented below, in a manner consistent with those presented in Yu 2012, ch. 1. The consonants of Doshu are as follows:

	labial	dental	palato-alveolar	(alveolo)palatal	velar
stop	b p p ^h (mb)	d t t ^h (nd)			g k k ^h (ŋg)
affricate		dz ts ts ^h	dʒ tʃ tʃ ^h	dʒ tɕ tɕ ^h (ndʒ)	
nasal	m	n		ɲ	ŋ
approximant	w	l		j	
fricative	f v	s z	ʃ ʒ	ç ʒ	x ɣ

The prenasalized consonants appear to be on their way out. As we shall see below, prenasalized initials from Proto-Ersuic are not consistently preserved in Doshu.

The vowels are as follows:



The apical vowel -ɿ can be analyzed as an allophone of -i after the dental and postalveolar fricatives/affricates.

²Chirkova (2014) reports that there were nine speakers as of 2013.

³For example, in the newer transcription system, the reader must remember that /va/ and /vo/ actually represent [wa] and [wo] (while /ve/ and /vu/ are simply [ve] and [vu]). In addition, some of the later analysis seems to contradict data presented in previous papers, e.g., Chirkova 2015 lists a voiced uvular fricative /ɣ/ (but no velar fricative /ŋ/) in the phonemic inventory and states that it “only occurs before /a/ (as in /ka³¹/ ‘needle’, /ka⁵³/ ‘be full (after meal)’.” However, Chirkova 2014 analyzes [ɣ] as an allophone of /ɣ/, along with an example of /ɣ/ before the vowel /e/, **ɣe**⁴⁴ ‘to be thick, coarse’, which is not found in Chirkova 2015.

Note that the rhotic vowel -ʁ only appears on its own (with no initial consonant) or suffixed to another syllable.

There is variation between ɣ ~ əu.

There are no coda consonants or nasalized vowels, with the following two exceptions: **ẽ⁴⁴ja⁴⁴** ‘duck’ and **xuŋ⁴⁴** ‘want’.

The medial glide -j- has a restricted distribution. It only appears in the final -je after labial and dental stops; -je and -ja after m-; and -je, -ja, and -ju after l-.

The medial glide -w- is rare.

Unlike Lizu or Ersu, which mostly have two tones,⁴ Doshu has four tones: high level (⁴⁴), high falling (⁵³), low falling (³²), and mid level/rising (³⁴).⁵ With suffixal -ʁ three patterns are possible: high level (⁴⁴), high falling (^{55,33}), or high rising (²⁵); this last pattern can be understood to arise from combining either of the tones ³² or ³⁴ with the suffix -ʁ.

Interestingly, the two falling tones are sometimes realized as creaky or with a glottal stop coda.

1.2 Morphology

From Chirkova (2015), which includes the short text “The North Wind and the Sun”, it is apparent that Doshu shares some common morphology with Lizu and Ersu, such as the negative and prohibitive prefixes **ma** and **t^ha**, the genitive (**j**)**i**, the comparative prefix **ja** (Chirkova calls this an “intensifying prefix”; in Ersu this has become a generic adjective prefix), the nominalizer **ɕu** (< ***su**), and a purposive nominalizer **le** (**ve**³⁴ ‘wear’ + **le**⁴⁴ = ‘clothes’; see also Zhang 2013:162).

Huáng and Yǐn (2012)’s sketch of Doshu illustrates further similarities with Lizu and Ersu, including an auxiliary verb **p^ha**³² ‘can, be able to’, a question prefix **a**⁵⁴ which attaches to the verb, and an apparently cognate numeral system including the bound “-ty (ten)” suffix **-zi**⁵⁴ < ***zi** which is used on numerals from ‘forty’ through ‘ninety’ (but not ‘twenty’ or ‘thirty’). There is also a set of verbs of existence: **dzo**⁴⁴ for animate/abstract objects, **bo**⁵⁴ for valuable items, **dze**⁵⁴ for things that are movable, and **ni**⁴⁴ for immovable objects. **dzo**⁴⁴ and **bo**⁵⁴ correspond exactly with Proto-Ersuic ***dzo** and ***bo**, while **dze**⁵⁴ seems to descend from ***dziu** ‘have/exist (container)’⁶. **ni**⁴⁴ is, I believe, related to ***hã** ‘have/exist (immovable)’, rather than ***niu** ‘have/exist (general)’ (see discussion in section 2.3, below). A sixth form, ***dɕwa** ‘have/exist (movable)’, is not found in Doshu.

On the other hand, Doshu does not seem to share any of the five directional prefixes reconstructable for Lizu and Ersu. Huáng and Yǐn (2012) report that there are no directional

⁴Note, however, that Chirkova and Chen 2013 and later papers recognize three tonal patterns in disyllabic words in Kala Lizu.

⁵These are equivalent to the ³³, ⁵³, ³¹, and ²² tones, respectively, from Chirkova 2015 and 2016; and the ⁴⁴, ⁵⁴, ^{32/21}, and ²¹⁴ tones from Huáng and Yǐn 2012.

⁶This root is not found in Ersu.

prefixes at all. Chirkova (2014) reports that Doshu does have some directional prefixes, most commonly **mi-** ‘up’ and **ɣ-** ‘down’, but also including such forms as **dzi-** ‘upward’ and **na-** ‘reciprocal’; however, these do not bear much resemblance to the ones found in Lizu/Ersu.⁷ This raises the possibility that rather than having a shared set of directional prefixes at the proto-level which were lost in Doshu only to be replaced by a different set of prefixes, Lizu/Ersu and Doshu comprise two separate branches of Ersuic, and that after they split, directional prefixes came into “fashion” via language contact and each branch chose a different set of prefixes.

1.3 Sources

All Doshu forms below are listed with their sources: Chirkova and Handel 2013a (“C13a”), Chirkova and Handel 2013b (“C13b”), Chirkova 2014 (“C14”), Chirkova 2015 (“C15”), Chirkova and Handel 2016 (“C16”), Sūn 1982 (“S82”), and Huáng and Yǐn 2012 (“H12”).⁸

Lizu(Mianning) forms are from my own fieldwork. Lizu(TBL) is from Dài and Huáng (1992). Lizu(Naiqu) is from Ikeda (2009). Ersu(Zeluo) is from Sūn et al. (1991). Lizu(Kala) and Ersu(Ganluo) are from Chirkova and Handel (2013a), Chirkova (2008), and Chirkova (2014).⁹ PTB forms are from Matisoff (2003).

2 Initials

Below, we will compare Doshu forms directly with the reconstructed forms from Yu 2012. For the most part this turns out to be sufficient; supporting forms for specific reconstructions will be brought in when necessary.

The original (2012) reconstructions will be listed in the first column. Some etyma require revisions based on the Doshu data; these will be listed in the “notes” column.

In cases where it may be unclear which syllables are under discussion, or where syllable boundaries might not be immediately obvious, the relevant syllables have been bolded.

2.1 Prenasalization

Prenasalization is lost on voiceless initials.

⁷From Yu 2012, ch. 6, these are ***de-** ‘up’, ***ne-** ‘down’, ***k^he-** ‘inward/upstream’, ***ŋe-** ‘outward/downstream’, ***t^he-** ‘away’.

⁸Huang and Yin’s phonological inventory is slightly different than Chirkova’s, but the differences are not great and will not affect our analysis in this paper. For a comparison of the two, see Chirkova (2015).

⁹Technically, Zeluo is inside Ganluo, and the TBL data is also from a variety of Kala Lizu (albeit older), but these labels should suffice for our purposes.

PEr(2012)	Doshu	source	gloss	notes
*ŋk ^h æ ¹	tɕ ^h a ⁵³	C14	sell	
*meŋk ^h e ²	me ³² -k ^h a ⁴⁴	C15	smoke	
*ŋk ^h o ¹	k ^h u ³⁴ -ga ⁴³	C14	lock	
*nts ^h ænts ^h æ ²	ts ^h o ⁴⁴ -tʃ ^h e ⁵³	C14	clever	
*(n)tʃ ^h a	tʃ ^h a ²¹ pu ³²	H12	skirt	
*nts ^h ɑ ¹	ɕe ⁵³ -p ^h u ³²	C14	liver	*nsa ¹ , PTB *m-sin
*dents ^h ɑ ¹	ɕe ⁴⁴ ‘pull, cross (bridge)’	H12	pull/lead (a cow)	*nsa ¹ , cf. Lahu še
*nts ^h u ²	ts ^h e ³⁴ -pu ³²	C16	lungs	
*nts ^h o ¹ iu ¹	ts ^h o ⁴⁴ nie ⁴⁴ ~ ts ^h o ⁴⁴ lie ⁴⁴	H12	flea	
*mp ^h i ²	p ^h je ³⁴ ‘vomit’	C16	spit	
*mp ^h jo	tɕ ^h o ⁵³	C13b	beautiful	

The initial of ‘liver’ merits some discussion. Doshu ɕe⁵³ may not seem to bear much resemblance to, e.g., Ersu(Zeluo) **ntsha**⁵⁵ or Lizu(Mianning) **nts^hɑ** (in fact Chirkova 2014, appendix item 114, marks it as not cognate), but I believe they plausibly descend from the same root. Here I have revised the reconstruction to have a prenasalized fricative, which is simply lost in Doshu. The development of *ɑ > je is completely regular, as is the subsequent palatalization of *s > ɕ. As for Lizu/Ersu, an epenthetic stop appeared between the nasal and the fricative,¹⁰ and following the pattern of all the other prenasalized voiceless obstruents, became aspirated, yielding **nts^hɑ**. The same applies to the homophonous ‘pull/lead’. As noted in Yu 2012:177, both roots may trace back to earlier ***sin**; note PTB ***m-sin** LIVER and Lahu še, which would descend from PLB ***sin**.

Some prenasalized voiced stops and affricates remain in Doshu, but not consistently:

PEr(2012)	Doshu	source	gloss	notes
*ŋgæ ¹	(n)dza ⁵³ (-pu ³²)	C15	door/gate	
*ŋge ²	ŋge ³²	C16	nine	
*deŋgwo ¹	ŋgo ³² ‘hold, grasp’	C14	pick up	
*ŋgo ²	ŋgo ⁴⁴ lje ⁴⁴	C16	tile	
*ŋgriupje ¹	ge ⁴⁴ pi ⁴⁴	C16	skin	
*ndziundzi ¹	dʒɿ ⁴⁴ dzi ⁴⁴	C15	letter/book	
*ndza ²	dʒe ³²	C14	Chinese (Han)	
*ndzomo ²	dzo ³² mo ⁴⁴	C14	official	
*ndze ¹	dʒɿ ³²	C16	ride (horse)	
*ndo	do ⁵⁵	S82	see	
*mende	me ³² -dje ⁴⁴	C14	clear (weather)	
*zjendzu	(n)dzu ³² -zi ⁴⁴	C14	nephew	
*k ^h endza ¹	dza ³²	C16	stand	

¹⁰Cf. the [t] that may appear in English “sense” /sen[t]s/ or “else” /el[t]s/.

PEr(2012)	Doshu	source	gloss	notes
*mbje ¹	(m)ba ⁴⁴	C16	mountain	*mban ¹
*mps ^h u ¹	ts ^h u ³⁴	C14	hail	

2.2 Preaspiration

Generally speaking, preaspiration appears to simply be lost:

PEr(2012)	Doshu	source	gloss	notes
*hko ¹	ku ³² -ku ⁴⁴	C14	hole	
*hkwa	qa ⁵⁵	S82	skinny	
*hke ¹	k ^h o ³⁴ -ma ³²	C14	hawk	This form is problematic since the initial is aspirated, whereas the other forms with velar initials are not.
*htjiu ²	ts ^h ₁ ⁴⁴ ?	C16	feces	This form is also problematic, both for the aspirated initial and the place of articulation.

In the particular case of preaspirated dental stop initials, we find a peculiar pattern: the Doshu reflexes of these etyma all have palatal nasal initials (with the exception of ‘thousand’, which may be a Tibetan loan). This would seem to suggest revised reconstructions with something like *s + nasal initials. The palatalized initials here are reminiscent of a similar phenomenon in Lepcha, where an *s- causative prefix developed into palatalization on the initial (a “secondary palatal infix” -y-, see Benedict 1943).

PEr(2012)	Doshu	source	gloss	notes
*sini/htimi ¹	je ³² -ma ⁵³ , je ³³ -mi ⁵³	C14	heart	*sni(mi) ¹ , PTB *s-ni-ŋ
*stim(b)u ¹	ja ³² -ku ⁵³	C14	nose	*sna, PTB *s-na
*sini/stē ²	je ³⁴	C14	seven	*snē ² , PTB *s-nis
	lo ⁴⁴ -ji ⁴⁴ -p ^h a ⁴⁴	C14	finger ¹¹	*lesne/lesē, cf. Lizu(Mianning) løstø, Lizu(Kala) ^{LP} Ietu
*htū ²	-tu ⁵³	C14	thousand	loan from Tibetan? cf. WT stonj

Unfortunately this leads to a problem. In Yu 2012, section 3.2.4, I reconstructed two types of “preaspirated” initials: *ht- vs. *st-, in order to account for Lizu forms with initials t- vs. k- (e.g., the forms from Lizu(TBL) ti⁵³mi⁵³ ‘heart’, vs. ki³³mu⁵³ ‘nose’ and skj⁵³ ‘seven’). It seems imprudent to try to make a distinction between sn- vs. hn- in the proto-language when we are also about to reconstruct voiceless nasals below, so instead I will now leave it as an unsolved mystery why some of these forms end up with velar initials. As I suggested in 2012, section 3.2.4, it may

¹¹The root for ‘finger’ was not reconstructed with a preaspirated initial in Yu 2012 since there were no other forms to corroborate the Mianning form, but add in the Doshu form here and it fits the pattern nicely.

well be conditioned by some component in the rhyme that has yet to be identified.

2.3 Voiceless Nasals

In Yu 2012, section 3.10, I reconstructed a set of words with glottal initials and nasal rhymes, based on Lizu forms of that shape and Ersu forms bearing a close resemblance but missing the nasalization. Two forms, Lizu(Naiqu) **m̥i**⁵³ and Lizu(TBL) **ŋi**⁵³ ‘bamboo’, were suggestive but, in my view, were too few and too aberrant to justify reconstructing anything else.

Chirkova and Handel (2013a) presented new data from Doshu suggesting that voiceless nasals should indeed be reconstructed in Proto-Ersuic for these cognate sets, specifically when Ersu has initial **x-**, Lizu has initial **h-** with a nasalized vowel, and Doshu has a nasal initial. Although Chirkova and Handel offer no actual reconstructions in their paper, in a number of cases such a reconstruction is relatively straightforward, e.g., ‘bamboo’, ‘sister’, and ‘chin’ below. However, the remaining forms are more difficult since the rhymes do not exactly match the patterns of sound correspondences found after other initials.

Below I offer tentative revised reconstructions, using the place of articulation suggested by Doshu and an educated guess as to the rhyme. (For notational convenience, I will write voiceless nasals in Proto-Ersuic using **h** + nasal.)

PEr(2012)	Doshu	source	gloss	notes
*hĩ ²	mi ⁴⁴	C16	bamboo	*hmi ² , PTB *ma
*dehĩ ¹	mje ³⁴	C16	ripe ¹²	*hme ¹ , PTB *s-min
*hjēmæ ¹	na ³³ ma ⁵³	C13a	sister	*hnammæ ¹ , PTB *s-nam
*mehĩ ²	mje ⁴⁴ la ⁵⁵ < *mje ⁴⁴ na ⁵⁵	C13a	chin ¹³	*mehnam ² , PTB *ŋam ?
*hjē ¹	je ⁴⁴	C16	borrow (tools) ¹⁴	*hni ¹ , PTB *r/s-ŋ(y)a
*hĩ	je ⁴⁴	C16	year	*hni, PTB *s-niŋ
*hã ¹	ŋi ⁴⁴	H12	have, exist (im-movable)	*hna ¹
*hwō	na ³²	C16	language	*hnwa
*dehē ¹	ŋo ⁴⁴	C13a	fragrant	*hŋo ¹
*hē ¹	mo ⁴⁴ t ^h i ⁴⁴ ma ³⁴ -ma ⁵³	C13a C16	mushroom teach	*hmo ¹ , PTB *g/s-məw possibly *hmæhmæ, cf. Ersu(Zeluo) xa ⁵⁵ xa ⁵⁵ ; not found in Lizu, and per- haps a loan, cf. PLB *?ma ^{1/2}

¹²Note that ‘ripe’ and ‘bamboo’ are homophonous (disregarding tone) in Lizu and Ersu, so the only evidence for distinguishing the rhymes here comes from Doshu.

¹³Previously there was no evidence to decide between the two rhymes **-i** vs. **-je**, for ‘chin’, but given that **-a** is the expected reflex of the rhyme originally reconstructed as Proto-Ersuic ***-je/jē** (now revised to ***-an/am**, see section 3.8 below), this seems to be the correct reconstruction.

¹⁴Conversely to ‘chin’, this root was reconstructed with **-je** based on the Lizu(Mianning) form **hjē**. However, with that rhyme the expected form would be **na** in Doshu; thus we reconstruct ***hni** and leave the Mianning form out as slightly irregular.

As mentioned above in section 1.2, the Doshu form **ni**⁴⁴ ‘have, exist (immovable)’¹⁵ is an interesting example of cognate identification. When looking at the 2012 reconstructions, we see two possible Proto-Ersuic forms: ***niu** ‘have, exist (general)’, or ***hñ** ‘have, exist (immovable)’. The former might seem much more likely at first glance, but let us take into account the expected sound changes. ***niu** would be expected to yield **ne** or **ne** in Doshu (see section 2.9.3); whereas if we revise the latter root’s reconstruction to ***hna**, the expected outcome in Doshu would be **ne**, a virtually identical result. Given that these two outputs are the same in form, it seems preferable to choose the root with the proper semantics: ***hna** ‘have, exist (immovable)’.

In addition to these, ‘bear’ and ‘bird’ might possibly be reconstructed with voiceless nasals, despite Lizu not having a consistent set of reflexes with nasalized glottal initials:

PEr(2012)	Doshu	source	gloss	notes
*xui/ŋui ¹	wa ⁴⁴	C14	bear	possibly *hŋui ¹ or *sŋui ¹ ; cf. Lizu(Kala) ŋo~fio, and Ersu(Zeluo) xa ⁵⁵ , PTB *d-wam
*xwajo ¹	ŋo ⁴⁴ -tçi ⁴⁴ /wo ⁴⁴ -tçi ⁴⁴	C14	bird	possibly *hŋwa ¹ or *sŋwa ¹ , PTB *s-ŋak
*hō ¹	xuŋ ⁴⁴	C15	want	

Finally, ‘want’ is notable since Lizu(Mianning) **hō** and Ersu(Zeluo) **fu**⁵⁵ (< ***xu**) fit the pattern, but Doshu is the odd one out here, since it does not have a nasal initial.

2.4 *hn- vs. *sn-

Notice that we have now reconstructed both voiceless nasals and ***s**-prefixed nasals for Proto-Ersuic. While the voiceless nasals are relatively straightforward, the ***s**-prefixed eytma could do with further examination:

PEr	Ersu	Lizu	Doshu	gloss	PTB
*sni(mi) ¹	Zeluo sŋ ⁵⁵ n ⁵⁵ i ⁵⁵ , Ganluo ^H szŋe	Kala ^{RP} temi, Mianning ʃtimi, TBL ti ⁵³ mi ⁵³	je ³² -ma ⁵³	heart	*s-ni-ŋ
*sna	Zeluo sŋ ⁵⁵ n ⁵⁵ bu ⁵⁵ , Ganluo ^H symb ^y	Kala ^{LP} tombu, Naiqu ki ³³ me ⁵³ , Mianning `ʃtimbu, TBL ki ³³ mu ⁵³	ja ³² ku ⁵³	nose	*s-na
*snē ²	Zeluo ʃŋ ⁵⁵ n ⁵⁵ , Ganluo ^H szŋ	Kala ^F tŋ~ ^F ktŋ, Naiqu ki ⁵³ , Mianning `ʃtɕ, TBL skŋ ⁵³	je ³⁴	seven	*s-nis
*lesne/lesē	Zeluo le ³³ su ⁵⁵ , Ganluo ^H lesv	Kala ^{LP} letu, Naiqu le ³³ se ⁵⁵ , Mianning ləʃtə, TBL le ³³ se ⁵³	lo ⁴⁴ -ji ⁴⁴ -p ^b a ⁴⁴	finger	

¹⁵The **n** here is Huang and Yin’s transcription, and is equivalent to **ɲ** in Chirkova’s transcription.

The general pattern is this: in Ersu the **s-* prefix has been reanalyzed as a full syllable with an apical/fricative vowel; in Lizu the **sn-* cluster becomes a voiceless unaspirated stop (Mianning preserves the sibilant in the cluster); and in Doshu we find palatal nasal initials.

The voiceless nasals and **s-* prefixed nasals seem to reflect multiple historical layers of **s-* prefixation. I.e., PTB **s-* + nasal had developed into voiceless nasals by the Proto-Ersuic stage, while Proto-Ersuic maintained a productive **s-* prefix for, e.g., body parts. Notice that three of the four forms above are body parts ('heart', 'nose', 'finger'); other roots which may belong in this set but which lack a corresponding Doshu form include 'mouth', 'tongue',¹⁶ and 'neck' (see Yu 2012, section 3.2.4).

With prefixal **s-* only appearing before **n/n̥-*, one might wonder what happened to the other places of articulation. Perhaps the 'bear' and 'bird' forms above can be reconstructed with **s-* prefixed velar nasals. That would mean there was an animal/body part prefix **s-* at the Proto-Ersuic level.

2.5 Velars

While the complex nasal initials above present some difficulties, most Proto-Ersuic initials are either unchanged in Doshu, or have relatively straightforward developments. The major developments are described below, according to place of articulation.

Velars are palatalized before **-æ* and **-i* (with the exceptions listed below):

PEr(2012)	Doshu	source	gloss	notes
*ŋk ^h æ ¹	tç ^h a ⁵³	C14	sell	
*gæ/gja ¹	dza ³²	C16	like/love	
*gægæ ¹	dza ³⁴ -dza ⁴⁴	C16	sing	
*ŋgæ ¹	(n)dza ⁵³ (-pu ³²)	C15	door/gate	
	me ³² -ja ⁵³	C14	cloudy (weather)	*ŋæ, cf. Lizu(TBL) me ³³ ŋæ ⁵³ , Ersu(Zeluo)me ³³ ŋa ⁵⁵
*megi ²	me ³² -dzi ³²	C14	thunder	
*tjeki ¹	tçe ⁴⁴ le ⁴⁴	C16	ladder	
*sēkæle ¹	ka ³²	C16	branch	
*kæ	ka	C15	classif. long	
*zikæ	zi ⁴⁴ ka ⁵³	C16	foolish/stupid	
*(ŋ)gætsi ¹	(ŋ)ga ²¹ tçi ⁴⁴	H12	eggplant	see section 2.9.1 for discussion of this item

¹⁶However, although the Doshu word for 'tongue' je⁵³pu³² does not have a palatal nasal initial, it does have a palatal glide initial, which is close enough to make one wonder if it is perhaps from something like **slja* (< PTB **s-lya*), which could possibly have developed into Lizu(Mianning) `jti, etc. The Ersu(Zeluo) form htsj³³psj⁵⁵, on the other hand, is a bit more divergent.

However, the presence of a medial *-r- prevented palatalization before dropping out (e.g., ‘star’ and ‘hear’):

PEr(2012)	Doshu	source	gloss	notes
*kri ¹	ke ³⁴	C16	star	
*t ^h egri ¹	ge ⁴⁴	C16	hear	
*kriu ²	ki ³⁴	C14	gall bladder	
*kriu	ke ³⁴	C14	frost	
*ŋgriupje ¹	ge ⁴⁴ pi ⁴⁴	C16	skin	
*dek ^h ra ¹	k ^h a ⁴⁴	C16	bitter	
*kra ²	ke ³⁴	C16	scales, steelyard	
*kra	ke ³²	C14	catty	
*yra	ya ³²	C16	needle	

In a number of cases where I originally reconstructed a retroflex initial by default (since there was no evidence of a velar initial in the available data)¹⁷, the new data from Doshu provide evidence for reconstructing a velar + r cluster. In some cases this matches up nicely with the PTB roots.

PEr(2012)	Doshu	source	gloss	notes
*tʂu ¹	ku ³⁴ -ə ³⁴	C14	sweat	*kru ¹ , PTB *s-krul
*tʂ ^h u ²	k ^h u ³¹	C16	six	*k ^h ru ² , PTB *d-kruk
*dziu ¹	ge ³²	C14	wok/pot	*griu ¹
*dze ¹	ge ³²	C16	grind	*gre ¹ , PTB *krit
*diutʂ ^h e	k ^h u ⁵³	C14	year	*k ^h re ¹

Some forms (‘rat’ and ‘get up’) with initial *g- seem to have become v- (likely through an intermediate stage ʁ—note the form **ʁu³³dzo³³** ‘head’ from Nishida and Sūn 1990:17), though others (‘boat’, ‘middle’) have not. It is unclear why this is the case, since the rhymes are all back rounded vowels.

PEr(2012)	Doshu	source	gloss	notes
*gojo ¹	vu ⁵³ -pu ³²	C16	rat/mouse	
*degwo ¹	ve ⁵³ = la ³²	C14	get up/rise	
*gu ¹	gu ³²	C14	boat	
*goɬæ ²	go ³² -tɕo ⁴⁴	C14	middle	

Velar stops in other environments remain unchanged.

¹⁷I suppose it may be useful for me to go back and revise the reconstructions of similar forms to, e.g., “*tʂu OR *kru”, in case more evidence like this shows up.

PEr(2012)	Doshu	source	gloss	notes
*ŋge ²	ŋge ³²	C16	nine	
*meŋk ^h e ²	me ³² -k ^h a ⁴⁴	C15	smoke	
*gwEmæ ²	ge ⁵³ ma ³²	C14	back/body	
*k ^h je ¹	k ^h o ⁵³	C16	give	
*k ^h wæ ¹	k ^h a ⁵³	C16	big	
*kwa/ka ²	ja ³² -ka ⁴⁴	C14	all	
*deŋgwo ¹	ŋgo ³² ‘hold, grasp’	C14	pick up	
*ŋk ^h o ¹	k ^h u ³⁴ -ga ⁴³	C14	lock	
*ŋgo ²	ŋgo ⁴⁴ lje ⁴⁴	C16	tile	
*k ^h o	k ^h u ⁵³	C16	bowl	
*riku/rik ^h u ¹	ju ⁵³ ku ³²	C14	bone	
*ŋui ¹	ŋo ⁴⁴	C14	silver	
*ŋra ²	ŋo ³²	C16	five	
*ŋu ¹	ŋe ⁴⁴	C16	cry	

Note that we expect *ŋ to remain ŋ; as such, Doshu **ju**³² ‘cow’ may not descend from Proto-Ersuic *ŋui², but rather be a loan from Mandarin (**niú**).

There are not many examples of roots descending from the velar fricatives *x-/*ɣ-, though it appears that before certain rhymes *x > ɕ and *ɣ- > v (compare with the developments to *g- above).

PEr(2012)	Doshu	source	gloss	notes
*xui ¹	ɕe ⁵³ -ma ³²	C14	tooth	
*xui	ɕe ⁴⁴ -ɕe ⁴⁴	C15	walk	
*deɣui ¹	ve ³⁴	C16	wear	
*ɣui ¹	vu ⁴⁴	C16	buy	
*deɣwæ ¹	ɣa ⁵³ = la ³²	C16	full (satiated)	
*ɣo ¹	vu ⁵³	C15	wine/liquor	
*ɣwo ¹	wo ³²	C16	pig	
*yeniu/yoniu	ve ⁵³ -ji ³²	C14	intestine	

2.6 Retroflexes

*r- > w in most cases, though the suffix for ‘water’ has become a rhotic vowel. The forms for ‘write’ and ‘cloth’ do not match this pattern, which perhaps suggests that these may be more recent loanwords.

PEr(2012)	Doshu	source	gloss	notes
*rA ¹	wa ⁵³ = la ³²	C16	obtain	

PEr(2012)	Doshu	source	gloss	notes
*ri ¹	wa ⁴⁴ -ma ⁴⁴	C16	road	
*rwa ¹	wo ⁵³	C16	chicken	
*dere ¹	wa ³⁴	C16	swell	
*re ¹	-ɔ ⁴⁴	C16	water	
*riu ¹	ʒi ⁵³	C15	write	
*wurA/wærA ¹	vu ⁴⁴ ʒa ⁴⁴	H12	cloth	
*rgwæ ¹	wa ⁵³ -dzu ³²	C16	rain ¹⁸	

The initial for ‘rain’ also has become **w-**. This root is discussed in further detail in Yu 2012, section 3.7.3.

The retroflex fricative *ʒ- seems to have merged with ʃ- (see section 2.7 below), except where it underwent a change to **x-** before a high front glide *-je < *-a.¹⁹ This is reminiscent of the Lizu(Naiqu) change of ʒɿ > **xu** and Lizu(Mianning) ʒ > **x** (Yu 2012:54,56).

PEr(2012)	Doshu	source	gloss	notes
*ʒo ¹	ke ³² -ʃo ⁵³ , ji ³² - xi ⁵³	C14	dew	
*ʒiu ¹	ʃu ⁴⁴	C16	blood	
*ʒæp ^h o/ʒop ^h o ¹	xe ³² -p ^h o ⁵³	C14	front	*ʒæp ^h o/ʒop ^h o
*ʒa	xe ³⁴	C16	long	
*(ri)ʒa	wa ⁴⁴ -xe ⁵³	C14	far	lit. ‘road’ + ‘far’
	wa ⁴⁴ ʃo ⁴⁴	C14	cool	*ʒwæ, cf. Lizu(TBL) nbi ³³ ʒuæ ⁵³ ʒuæ ³¹ , Ersu(Zeluo) nbi ³³ ʒa ⁵⁵
*ʒewmæ ¹	ʃe ²¹ ma ⁵⁴	H12	louse	
*ʒiu ¹	xæ ²⁵ ?	C16	yellow	compare with ‘blood’ above; the Doshu form is likely not descended from *ʒiu but has been included here for reference.

There are only a few examples of *ʒ-, but it seems to have become **v-** in ‘four’ and ‘narrow’, making the form for ‘grass’ the odd one out. Note, however, that the Lizu(TBL) form for ‘narrow’ is **vu⁵³vu⁵³** (where we expect something like **zu⁵³zu⁵³**), perhaps there is something else going on here.

PEr(2012)	Doshu	source	gloss	notes
*zju ²	vu ³²	C14	four	
*zuzu ²	vu ³²	C16	narrow	
*zu ¹	ʒu ⁵³	C16	grass	

¹⁸According to Chirkova 2014, this means ‘to rain’ where the first syllable is the noun ‘rain’; thus **dzu³²** is a verb and presumably not related to Proto-Ersuic *dʒiu¹ ‘water’.

¹⁹It would be interesting to see what the initial would be if Doshu had a form for ‘comb (v.)’ < Proto-Ersuic *ʒi².

The retroflex affricates have merged with the palato-alveolars.

PEr(2012)	Doshu	source	gloss	notes
*nts ^h ænts ^h æ ²	ts ^h o ⁴⁴ -tʃ ^h e ⁵³	C14	clever	
*tʃ ^h æ ¹	tʃ ^h a ⁵³	C14	ghost	
*dzju ¹	dʒe ⁵⁴ ‘have, exist (movable)’	H12	have, exist (container)	
*bædzje ¹	ba ⁴⁴ dʒe ⁴⁴ ‘copper coin’	C14	money	possibly *bædzan ¹

2.7 Palato-alveolars

The palato-alveolar fricative initials remain as palato-alveolars.

PEr(2012)	Doshu	source	gloss	notes
*fje ¹	ʃa ⁴⁴	C16	iron	*ʃan ¹
*fi ²	ʃe ⁴⁴	C16	meat	
*fæ ¹	ʃa ⁴⁴	C16	wheat	
*defo	ʃa ³⁴	C16	thirsty	

The affricates, on the other hand, are more problematic. Several good roots, with rhymes *-o, *-u, *-ew, have developed into palatal initials; these are listed in the following table above the dividing line. Note, however, the form for ‘rice’, which also was reconstructed with the rhyme *-ew but has a palato-alveolar initial in Doshu, unlike ‘sour’.

PEr(2012)	Doshu	source	gloss	notes
*dʒo ¹	dʒo ⁴⁴ ‘have, exist (animate/abstract)’	C16	have, exist (animate)	
*dʒu ¹	dʒu ³²	C16	waist	
*tʃew ¹	tʃo ³⁴	C16	boil, cook	
*detʃew ¹	tʃe ³⁴	C16	sour	
*ntʃ ^h ew ¹	tʃ ^h e ⁵³	C16	rice	compare with ‘sour’
*detʃ ^h iu ¹	tʃ ^h e ⁴⁴	C16	sweet	
*tʃ ^h atʃ ^h a ¹	tʃ ^h a ⁴⁴ tʃ ^h a ³²	H12	magpie	
*(n)tʃ ^h a	tʃ ^h a ²¹ pu ³²	H12	skirt	
*ndʒiundʒi ¹	dʒi ⁴⁴ dʒi ⁴⁴	C15	letter/book	
*dʒa ¹	dʒi ³⁴ ə ³⁴	C14	tea	
*htʃiu ²	ts ^h ₁ ⁴⁴ ?	C16	feces	

2.8 Palatals

Palatal glides remain unchanged:

PEr(2012)	Doshu	source	gloss	notes
*janiu ¹	ja ³² -ne ⁴⁴	C14	yesterday	
*ja(ji)hī ¹	ja ³² -je ⁴⁴	C14	last year	
*æja ¹	a ⁴⁴ -ja ⁴⁴	C14	elder brother/sib	
*jō ¹	jo ⁴⁴	C16	sheep	
*jē ¹	ja ⁴⁴	C16	house	
*ji ¹	ji ⁴⁴	C14	go	
*t ^h ejo	je ³²	C16	drunk	
*k ^h ejo	ja ⁵³	C16	sleep	

The voiced fricative *z > j. To fill in the gap, Proto-Ersuic *z > ʒ before high vowels (see section 2.9.1, below).

PEr(2012)	Doshu	source	gloss	notes
*zu ¹	je ³²	C14	snow	
*za ¹	-ja ⁵³	C14	hundred	
*za ¹	ja ²¹ ts ^h l ⁴⁴	H12	pants	
*caŋæ ²	ca ⁴⁴ do ⁴⁴	C14	pitiful	

The affricates also retain their place of articulation, with the exception of ‘drink’²⁰:

PEr(2012)	Doshu	source	gloss	notes
*tɕe ¹	tɕa ³⁴	C16	cloud	*tɕan ¹
*tɕ ^h etɕ ^h e ¹	tɕ ^h i ⁴⁴	C16	ten	
*zjendzu	(n)dzu ³² -zi ⁴⁴	C14	nephew	
*tɕ ^h e ¹	tʃ ^h a ³⁴	C14	drink	*tɕ ^h an ¹
*letɕu ¹	tɕu ³² ta ³² -p ^h o ⁵³	C14	right (side)	
*pwEki/ pwEtɕi	pe ³² tɕi ⁵³	C14	send/dispatch	
	tɕi ³²	C16	put, place	*tɕi, cf. Lizu(Mianning) tɕi, Lizu(Kala) ^l tɕi; Ersu(Ganluo) ^l tsu may be unrelated, contrary to Chirkova 2016 (we expect Ersu tsɿ)
*k ^h endza ¹	dza ³²	C16	stand	

Two more forms were reconstructed with palatal initials in Yu 2012, but the forms in Doshu have velar initials. The form for ‘set (of sun)’ has a voiced initial and therefore may not be cognate at

²⁰It is also worth noting that the usual word for ‘drink’ in Doshu is mba⁵³.

all. The form for ‘dog’ is one of the rare roots reconstructed with a rounded palatal (see Yu 2012:46); as there are no other examples of these in Doshu we can tentatively revise our reconstruction to have a velar initial and assume that Lizu/Ersu underwent palatalization of the initial.

PEr(2012)	Doshu	source	gloss	notes
*netɕ ^{hiu} / netɕiu ¹	ge ⁵³ ?	C16	set (of sun)	voicing doesn’t match; place of articulation probably doesn’t match either
*tɕ ^{whiu} ²	k ^h e ⁴⁴ , k ^h e ⁵³ ɲi ³²	C14	dog	*k ^{whiu} ²

2.9 Dentals

2.9.1 Dental fricatives and affricates

The dental fricatives and affricates have some interesting developments. Before high vowels, they have palatalized. This includes *-i, *-u and -je (< *-a).

The form for ‘eggplant’, presumably a loan from Middle Chinese **gjatsi** (see Yu 2012:68), is interesting since the second syllable has undergone this sound change (*tʂi > tɕi), but the initial of the first syllable seems to have escaped the palatalization change that we would expect (*g > dʒ / — æ, see section 2.5 above); perhaps the word was borrowed after the latter sound change and before the former!

PEr(2012)	Doshu	source	gloss	notes
*zi ¹	ʒi ⁴⁴	C16	shoe	
*zi ²	ʒi ³²	C16	son	
*zikæ	ʒi ³⁴ ka ⁵³	C16	foolish/stupid	
*dzi ²	dʒi ³²	C16	eat	
*ts ^{hi} ²	tɕ ^{hi} ⁴⁴	C16	salt	
*(ŋ)gætsi ¹	(ŋ)ga ²¹ tɕi ⁴⁴	H12	eggplant	
*ts ^{huts} ^{hu} ¹	tɕ ^{hu} ⁴⁴ ‘pound, hit’	C15	knock, strike	
*su	-ɕu ⁴⁴	C16	nominalizer	
*desu ¹	ɕu ³⁴	C16	sharpen	
*zu ¹	ʒuə ⁴⁴	C15	oil	
	ʒu ⁴⁴ mo ⁵³	C14	quadruped	*zu, cf. Lizu(Kala) ^{RP} zuŋu
*nts ^h a ¹	ɕe ⁵³ -p ^h u ³²	C14	liver	*nsa ¹
*dzæp ^h æ ¹	dʒe ⁴⁴ p ^h a ⁴⁴	C14	pillar/column	*dzap ^h æ ¹
*ndza ²	dʒe ³²	C14	Chinese (Han)	
*(n)dza ¹ ?	dʒe ⁴⁴	C16	drum	
*mjidzi ²	mi ³² dʒi ⁴⁴	C14	rabbit	expected dʒi

This also seems to have occurred before the rhymes -ē, -æ:

PEr(2012)	Doshu	source	gloss	notes
*sēpu ¹	çe ⁵³ -pu ³²	C16	tree	
*ts ^h ē ¹	tç ^h e ⁵³	C16	goat	
*ts ^h æ ²	tç ^h a ⁴⁴	C16	hot	

Furthermore, the fricatives *s-, *z- seem to have changed to palato-alveolars before *-o:

PEr(2012)	Doshu	source	gloss	notes
*taso ¹	ta ³² -fo ⁵³	C16	morning	
*soniu ²	ʃɤ ⁵³ -ne ⁴⁴	C15	tomorrow	
*sohī ¹	ʃɤ ⁵³ -ne ⁴⁴	C14	next year	
*zo ¹	ʒo ³² ‘lose, throw away’	C14	lose/owe; hit (target)	

Otherwise the dental fricatives/affricates remain unchanged:

PEr(2012)	Doshu	source	gloss	notes
*zjeji/zijo ²	za ⁴⁴ -mi ⁴⁴	C14	daughter	*zan ²
*zjē ¹	za ³²	C16	use	*zam ¹
*tsjē ¹	tʃa ³⁴	C16	hair	*tsam ¹
*dzjē ¹	dʒa ⁴⁴	C16	bridge	*dzam ¹
*tse ²	tʃ ¹ ⁴⁴	C16	hemp	
*ndze ¹	dʒ ¹ ³²	C16	ride (horse)	
*ts ^h e ²	tʃ ^h ¹ ⁴⁴	C16	wash	
*ts ^h o ¹	tʃ ^h ^o ⁴⁴	C16	person/human	
*nts ^h oŋiu ¹	tʃ ^h ^o ⁴⁴ nie ⁴⁴ ~ tʃ ^h ^o ⁴⁴ lie ⁴⁴	H12	flea	
*ndzomo ²	dʒo ³² mo ⁴⁴	C14	official	
*ts ^h ehī ¹	tʃ ^h e ³² -ne ⁴⁴ , tʃ ^h i ³² - ne ⁴⁴	C14	this year	
*ts ^h ek ^h a ¹	tʃ ^h e ³² -k ^h a ⁵³	C14	phlegm/spittle	

There are, however some exceptional forms.

PEr(2012)	Doshu	source	gloss	notes
*si ¹	se ³²	C16	hit/kill	expected çi
*nts ^h u ²	tʃ ^h e ³⁴ -pu ³²	C16	lungs	expected tç ^h u
*zæzæ ¹	za ³⁴ -za ⁴⁴	C16	tender	expected ʒa ²¹
*se ²	se ⁴⁴ -gu ⁴⁴	C15	who	expected s _ɿ
*sē ¹	so ³²	C16	breath	expected çe
*sjē ²	so ⁴⁴	C16	three	expected sa

²¹This is assuming the development to ‘hot’ is the regular one, and that we expect palatalization to apply to both fricatives and affricates at the same place of articulation.

2.9.2 Dental stops

In most environments dental stops are unchanged in Doshu:

PEr(2012)	Doshu	source	gloss	notes
*t ^h e ¹	t ^h e ⁴⁴	C14	s/he	
*tæniu ¹	ta ⁴⁴ -ne ⁴⁴	C14	today	
*diup ^h æ ¹	do ⁴⁴ -p ^h a ⁴⁴	C16	belly	
*ndo	do ⁵⁵	S82	see	
*mende	me ³² -dje ⁴⁴	C14	clear (weather)	
*lit ^h o/lot ^h o ¹	ji ⁴⁴ t ^h u ⁴⁴	C14	grandchild	
	k ^h a ⁴⁴ t ^h o ⁴⁴	C14	speak	*k ^h at ^h o, cf. Lizu(Kala) ^{EP} qhetho, Ersu(Ganluo) k ^h èt ^h ó

In a few cases a high vowel/glide has palatalized the initial.

PEr(2012)	Doshu	source	gloss	notes
*bedi ¹	be ³² dzi ⁴⁴	C13b	insect	
*dada ²	tɕe ⁵³ -tɕe ³²	C14	short	voicing doesn't match
*te ¹	tɕi ⁴⁴	C16	one	expected te
*diwæ ¹	da ⁴⁴ wa ⁴⁴	C14	slow/late	expected dzi

Examples with the complex initial ***rd-** are too few to make any generalizations:

PEr(2012)	Doshu	source	gloss	notes
*rdurdu	dzu ³⁴	C15	thick	
*rdi ¹	ɕe ³⁴	C16	eight	

Finally, there is one form tɕ^ho⁵³ ‘sharp’, possibly < PEr *nt^hwa¹, where ***-wa** > **o** is expected but the palatalized initial is not.

2.9.3 Dental nasals

First, several forms descending from ***n-** simply have **n-**.

PEr(2012)	Doshu	source	gloss	notes
*nene	no ³⁴	C16	deep	
*ne/no ²	no ⁴⁴	C16	you	
*nwo ¹	no ³⁴	C16	brains	
*denwa ¹	no ⁵³ k ^h u ³²	C14	black	

There are also several forms with palatalized nasal initials, which are easily explained by a following high/front vowel/glide. (However, the difference between ‘day’, with a dental nasal, vs. ‘sun’, with a palatal nasal, both presumably from the same root, is unexplained.)

PEr(2012)	Doshu	source	gloss	notes
*ni ¹	ɲi ⁴⁴	C16	gold	
*(ri)ni ¹	wa ⁴⁴ -ɲe ³²	C14	near	
*niu	ne ⁴⁴	C16	day	
*niumæ ¹	ɲe ⁴⁴ -ma ⁴⁴	C14	sun	
*ne ¹	ɲi ⁵³	C16	two	
*na ²	ɲeə ²⁵ -pu	C15	ear	

Finally, several forms have palatalized initials followed by **-a** or **-o**, corresponding to Lizu/Ersu forms with the rhyme ***-i** (hence the reconstructions with ***-i**). If we assume the Doshu forms preserve some vowel quality from the proto-language, we are forced to revise our reconstructions, but to what? Unfortunately ***nja** and ***njo** are already used for existing reconstructions (for ‘dodge’ and ‘soft’, respectively; see Yu 2012:49).

One solution is to reconstruct nasals with a new place of articulation,²² specifically a palatal ***ɲ-**, and say that all forms with this initial merged into **ɲi** in Lizu/Ersu. This is also plausible given the glide/nasal variation found in the form for ‘low’ below; cf. also **ji⁴⁴-no⁴⁴** ‘younger brother’, which has apparent cognates such as Ersu(Zeluo) **ɲi55nua55** and Lizu(Kala) ^{LP}**jene**, with a revised Proto-Ersuic reconstruction of ***ɲin(w)a** ‘younger sibling’.

PEr(2012)	Doshu	source	gloss	notes
*deni ¹	ɲa ⁴⁴	C16	sick/ache	*ɲa
*bæni ¹	ba ⁵³ ɲa ³²	C14	listen	*bæɲa
*breni ¹	ba ⁵⁴ ɲa ³²	H12	rest	*breɲa
*nini	ɲa ³² -mo ⁵³ , ja ³² - mo ⁵³	C14	low	*ɲa
*deni ¹	ɲo ³² -xu ⁵³	C14	red	*ɲo
*nini ¹	ɲo ³⁴	C16	few	*ɲo
*stim(b)u ¹	ɲa ³² -ku ⁵³	C14	nose	*sɲa

2.9.4 Dental laterals

The voiced laterals remain unchanged in Doshu.

PEr(2012)	Doshu	source	gloss	notes
*læ ¹	la ³²	C16	come	

²²In Yu 2012 there are no explicit palatal nasals in the reconstruction, only dental nasals followed by **-j-**.

PEr(2012)	Doshu	source	gloss	notes
*læ ¹	la ³²	C16	tiger	
*la ¹	lje ⁴⁴	C14	manure	
*lo	-lo ⁵³	C14	tael	
*k ^h elo ¹	lo ⁵³	C16	wait	
*lo(bwo) ¹	lju ⁵⁵ bu	C15	stone	
*meli/mele ²	me ³² -le ⁴⁴	C14	wind	
*liu ¹	lju ⁵³	C13b	loot/plunder	
*lep ^h ew ¹	lo ³² -ko ⁵³	C14	hand	

Voiceless laterals have lost their voicelessness.

PEr(2012)	Doshu	source	gloss	notes
*nts ^h o ^{hiu} ¹	ts ^h o ⁴⁴ nie ⁴⁴ ~ ts ^h o ⁴⁴ lie ⁴⁴	H12	flea	
*rA ^l æ ¹	la ³⁴	C14	god/spirit	
*læ	lja ³⁴	C16	month	possibly *tja
*læp ^h e ¹	pe ³² -ma ⁵³	C14	moon	

The medial -j- in ‘month’ is unexplained.

Note that ‘moon’ and ‘month’ presumably come from the same root but have rather divergent forms. Chirkova (2014:footnote 17) believes that both forms do indeed come from the same root, with the nasality of the initial arising from assimilation with the following syllable’s nasal onset, and the raised vowel as a side effect of the nasalization. Such an explanation is possible, though I would point out that we have no other examples of forms descending from *nja in Doshu to compare with (ideally we would check the reflex of *nja ‘dodge/make way’).

2.10 Labials

In most cases, labial stops remain unchanged in Doshu. Medial *-r- drops out.

PEr(2012)	Doshu	source	gloss	notes
*mp ^{hi} ²	p ^h je ³⁴ ‘vomit’	C16	spit	
*p ^h o ¹	p ^h o ⁴⁴	C16	escape	
*-p ^h o	p ^h o ⁵³	C16	side	
*pimæ ¹	pa ³⁴ ma ⁵³	C16	frog	
*pu	pu	C15	classif. tree/fl	
*mbje ¹	(m)ba ⁴⁴	C16	mountain	*mban ¹
*nembo	no ³⁴ bo ⁴⁴	C15	deaf	
*bi ²	bi ³²	C16	bee	
*bi ¹	ba ³²	C16	thin	

PEr(2012)	Doshu	source	gloss	notes
*biususu ¹	bu ³² -ɕu ⁵³ -ɕu ³²	C14	bladder	
*bebe ¹	be ⁴⁴ be ⁴⁴	C16	crawl, climb	
*bæni ¹	ba ⁵³ ja ³²	C14	listen	*bæŋa
*præ ¹	pa ⁵³ =la ³²	C14	arrive	
*debra ¹	be ⁴⁴	C16	full	
*nebre ¹	ba ⁵³	C14	tired	
*breni ¹	ba ⁵⁴ ŋa ³²	H12	rest	*brɛŋa
*tsjɛp ^h rje ¹	p ^h e ³⁴	C16	braid / plait	possibly *p ^h ran

Before palatal glides they have become palatal affricates:

PEr(2012)	Doshu	source	gloss	notes
*mp ^h jo	tɕ ^h o ⁵³	C13b	beautiful	
*p ^h ja	-tɕ ^h a ³²	C14	classif. garment	
*sɛp ^h ja ¹	ɕe ⁵³ -tɕ ^h a ³² -tɕ ^h a ⁴⁴	C14	leaf	
*bjɛbjɛ ¹	dza ⁴⁴ -dza ⁴⁴	C16	fly (v.)	*bjam, PTB *byam; compare with ‘mountain’ above

The initial of ‘fly’ has palatalized, which we would not expect given forms like ‘mountain’ above. A palatal glide is added to the reconstruction to account for this; see also the discussion under section 3.8 below.

There are no examples a bilabial palatalizing before **-je** < ***-a**, perhaps because the bilabial inhibited the brightening change (note the form ‘bright’ **ba**⁵³ < ***ba**; see section 3.8).

In one form we find a labiodental fricative:

PEr(2012)	Doshu	source	gloss	notes
*piu ¹	fe ³⁴ , fe ³² -ɹ ³⁴	C16	pus	

It appears ***w-** > **v-** before **-u**.

PEr(2012)	Doshu	source	gloss	notes
*wulje ²	vu ⁵³ dzu ³²	C14	head	
*wurA/wærA ¹	vu ⁴⁴ ʒa ⁴⁴	H12	cloth	

***m-** remains as **m-**:

PEr(2012)	Doshu	source	gloss	notes
*me ¹	mi ³²	C16	fire	
*me/mo	me ³²	C16	sky	
*mi	mi ³⁴	C16	monkey	

PEr(2012)	Doshu	source	gloss	notes
*amja/æmi	a ⁵³ -mi ³²	C14	now	
*mja ¹ (se)	mi ⁵³ ɣ ³²	C14	eye	
*mja	mja ⁵³	C16	many	
*mja ²	mje ⁴⁴ -ma ⁴⁴ , pje ⁴⁴ - ma ⁴⁴	C14	face	
*mui ²	mu ³²	C16	hair (body)	
*mjidzi ²	mi ³² dzɿ ⁴⁴	C14	rabbit	
*mi ¹	mje ⁴⁴	C13a	name	
*mu ¹	me ³⁴ /me ⁴⁴	C16	do/make	

However, in complex clusters with ***-r-**, the nasal seems to have preempted the rest of the initial.

PEr(2012)	Doshu	source	gloss	notes
*m(b)ro ²	mo ³²	C16	horse	
*mbro	mo ⁴⁴	C16	high	
*mbre ¹	me ³² -tsu ⁵³	C14	root	
*mp ^h ru ¹	mu ⁴⁴ -ɕu ³²	C14	thief	
*mbwo ²	-me ³²	C14	ten thousand	
*mbo ¹	mu ⁵³	C14	hat	

Strangely, this also seems to have happened with ‘hat’ and ‘ten thousand’, where we expect the prenasalization to drop (compare with **bo**⁴⁴ ‘deaf’ < ***mbo**, etc.).

3 Rhymes

Recall from Yu 2012, chapter 4, that the reconstructed rhymes of Proto-Ersuic (except for **-r-** medials and nasalized vowels) are as follows:

i	iu	ui	u
je		wE	wo
e	ew		o
(w)æ	ja		(w)ɑ

Below, we will work our way up the vowel space from low to high.

3.1 *æ

The reflex of ***-æ** in Doshu is **-a**, as evidenced by the following forms. As discussed above, velar stops and dental affricates have palatalized before this vowel. (The four exceptions to the palatalization change here are the same as those noted above under section 2.5.)

PEr(2012)	Doshu	source	gloss	notes
*ŋk ^h æ ¹	tɕ ^h a ⁵³	C14	sell	
*gæga ¹	dza ⁵³	C16	sing	
*gæ/gja ¹	dza ³²	C16	like/love	
*ŋgæ ¹	(n)dza ⁵³ (-pu ³²)	C15	door/gate	
	me ³² -ja ⁵³	C14	cloudy (weather)	*ŋæ
*ts ^h æ ²	tɕ ^h a ⁴⁴	C16	hot	
*tæniu ¹	ta ⁴⁴ -ne ⁴⁴	C14	today	
*zæzæ ¹	za ⁴⁴ -za ⁴⁴	C16	tender	
*læ ¹	la ³²	C16	come	
*læ ¹	la ³²	C16	tiger	
*rA ^l æ ¹	la ³⁴	C14	god/spirit	
*p ^h æ ¹	p ^h a ³²	H12	can, be able	
*p ^h ælæ ¹	p ^h a ⁴⁴ la ⁴⁴ ‘messy’	H12	used/old	
*præ ¹	pa ⁵³ = la ³²	C14	arrive	
*bæni ¹	ba ⁵³ ja ³²	C14	listen	
*tɕ ^h æ ¹	tɕ ^h a ⁵³	C14	ghost	
*diwæ ¹	da ⁴⁴ wa ⁴⁴	C14	slow/late	
*sēkæle ¹	ka ³²	C16	branch	
*kæ	ka	C15	classif. long	
*zikæ	zi ⁴⁴ ka ⁵³	C16	foolish/stupid	
*(ŋ)gætsi ¹	(ŋ)ga ²¹ tɕi ⁴⁴	H12	eggplant	

One more form is worth mentioning here: tɕ^he⁵³ ‘clever’. This was reconstructed as *ntɕ^hænts^hæ², but in fact the vowel correspondence is not regular across Ersu and Lizu, or even within Lizu itself (see Yu 2012:125).

3.2 *ja

There is no front/back distinction in low vowels reconstructed after palatals/palato-alveolars.²³ In all examples below the Doshu vowel is simply -a (with the exception of ‘tea’, though the vowel here may have been affected by the following rhotic vowel).

PEr(2012)	Doshu	source	gloss	notes
*æja ¹	a ⁴⁴ -ja ⁴⁴	C14	elder brother/sib	
*janiu ¹	ja ³² -ne ⁴⁴	C14	yesterday	
*ja(ji)hĩ ¹	ja ³² -ne ⁴⁴	C14	last year	
*p ^h ja	-tɕ ^h a ³²	C14	classif. garment	
*sēp ^h ja ¹	ɕe ⁵³ -tɕ ^h a ³² -tɕ ^h a ⁴⁴	C14	leaf	

²³A few forms with palato-alveolar initials (‘skirt’, ‘chase/expel’, ‘wheat’, ‘fetch (water)’) made it into the *æ section in Yu 2012:124; this appears to be an oversight on my part. They should go under *ja.

PEr(2012)	Doshu	source	gloss	notes
* $\text{caŋ}\text{æ}^2$	$\text{ca}^{44}\text{do}^{44}$	C14	pitiful	
* za^1	$-\text{ja}^{53}$	C14	hundred	
* za^1	$\text{ja}^{21}\text{ts}^{\text{h}}\text{ɿ}^{44}$	H12	pants	
* mja	mja^{53}	C16	many	
* $\text{k}^{\text{h}}\text{endza}^1$	dza^{32}	C16	stand	
* fa^1	fa^{44}	C16	wheat	
* $\text{t}^{\text{h}}\text{at}^{\text{h}}\text{a}^1$	$\text{t}^{\text{h}}\text{a}^{44}\text{t}^{\text{h}}\text{a}^{32}$	H12	magpie	
* $(\text{n})\text{t}^{\text{h}}\text{a}$	$\text{t}^{\text{h}}\text{a}^{21}\text{pu}^{32}$	H12	skirt	
* dza^1	$\text{d}\text{ʒ}\text{ɿ}^{34}\text{ə}^{34}$	C14	tea	

After ***m-** we sometimes find **-i** or **-je**; but compare with ‘many’ above.

PEr(2012)	Doshu	source	gloss	notes
* $\text{mja}^1(\text{se})$	$\text{mi}^{53}\text{s}\text{ɿ}^{32}$	C14	eye	
* $\text{amja}/\text{æmi}$	$\text{a}^{53}\text{-mi}^{32}$	C14	now	
* mja^2	$\text{mje}^{44}\text{-ma}^{44}, \text{pje}^{44}\text{-ma}^{44}$	C14	face	

3.3 ***a**

There is a fairly clear pattern of ***-a** > **je**, along with the concomitant palatalization changes:

PEr(2012)	Doshu	source	gloss	notes
* sa	xe^{34}	C16	long	PTB * s-rin
* $\text{saep}^{\text{h}}\text{o}/\text{so}^{\text{h}}\text{p}^{\text{h}}\text{o}^1$	$\text{xe}^{32}\text{-p}^{\text{h}}\text{o}^{53}$	C14	front	* $\text{saep}^{\text{h}}\text{o}/\text{so}^{\text{h}}\text{p}^{\text{h}}\text{o}^1$
* $\text{nts}^{\text{h}}\text{a}^1$	$\text{ce}^{53}\text{-p}^{\text{h}}\text{u}^{32}$	C14	liver	* nsa ¹ , PTB * m-sin
* $\text{dzap}^{\text{h}}\text{æ}^1$	$\text{dze}^{44}\text{p}^{\text{h}}\text{a}^{44}$	C14	pillar/column	* $\text{dzap}^{\text{h}}\text{æ}^1$
* $(\text{n})\text{dza}^1$	dze^{44}	C16	drum	
* ndza^2	dze^{32}	C14	Chinese (Han)	
* dada^2	$\text{tce}^{53}\text{-tce}^{32}$	C14	short	
* na^2	$\text{ne}\text{ə}^{34}\text{-pu}^{32}$	C15	ear	
* la^1	lje^{44}	C14	manure	

Chirkova (2015) suggests that the basic form of ‘ear’ is **no** (as in **no**³⁴-**bo**⁴⁴ ‘deaf’), with the vowel fronting due to the effect of a suffixal **-ə**. However, the pattern here suggests the opposite, that **je** is the regular development from ***na**, and that the **-o** vowel in ‘deaf’ is due to influence from the following syllable.

A large set of exceptions involves velars and/or ***r** (and perhaps **b-** as well, given the form for ‘bright’), where ***-a** remains a low vowel:

PEr(2012)	Doshu	source	gloss	notes
*dek ^h ra ¹	k ^h a ⁴⁴	C16	bitter	
*yra	ɣa ³²	C16	needle	
*rA ¹	wa ⁵³ = la ³²	C16	obtain	
*ŋra ²	ŋo ³²	C16	five	The vowel here is perhaps affected by the nasal initial.
*ts ^h ek ^h a ¹	ts ^h e ³² -k ^h a ⁵³	C14	phlegm/spittle	
*kwa/ka ²	ja ³² -ka ⁴⁴	C14	all	
	k ^h a ⁴⁴ t ^h o ⁴⁴	C14	speak	*k ^h at ^h o
*ba ²	ba ⁵³	C16	bright	

However, there are a few of forms with *-ra where Doshu has developed -e.

PEr(2012)	Doshu	source	gloss	notes
*debra ¹	be ⁴⁴	C16	full	
*kra	-ke ³²	C14	catty	
*kra ²	ke ³⁴	C16	scales, steelyard	

3.4 *wæ/*wa

It seems that *-wæ, *-wa > -a after velars:

PEr(2012)	Doshu	source	gloss	notes
*deywæ ¹	ɣa ⁵³ = la ³²	C16	full (satiated)	
*k ^h wæ ¹	k ^h a ⁵³	C16	big	
*rgwæ ¹	wa ⁵³ -dzu ³²	C16	rain	
*hkwa	qa ⁵⁵	S82	skinny	
*xwajo ¹	ŋo ⁴⁴ -tɕi ⁴⁴ /wo ⁴⁴ - tɕi ⁴⁴	C14	bird	possibly *hŋwa ¹ or *ɕŋwa ¹ ; also note the -o vowel here after a velar nasal, similar to 'five' above

After non-velars, we get -o:

PEr(2012)	Doshu	source	gloss	notes
*denwa ¹	no ⁵³ k ^h u ³²	C14	black	
*rwa ¹	wo ⁵³	C16	chicken	
	wa ⁴⁴ ʃo ⁴⁴	C14	cool	*ʃwæ
*detwa ¹	to ⁵⁴ to ³²	H12	hug/embrace	
*nt ^h wa ¹	tɕ ^h o ⁵³	C16	sharp	

3.5 *e and *ẽ

After dental and palatal fricatives, *e > i, followed by apicalization after the dentals. (Some of these syllables actually fill in the phonological gap left behind by the palatalization change of **si** > **çi**, etc., described in 2.9.1, above.) There are a few exceptions below, although note that they appear in the first syllable of a disyllable.

PER(2012)	Doshu	source	gloss	notes
*mja ¹ (se)	mi ⁵³ ɟ ³²	C14	eye	
*ts ^h e ²	ts ^h ɿ ⁴⁴	C16	wash	
*tse ²	tsɿ ⁴⁴	C16	hemp	
*ndze ¹	dzɿ ³²	C16	ride (horse)	
*tɕ ^h etɕ ^h e ¹	tɕ ^h ɿ ⁴⁴	C16	ten	
*ts ^h ehi ¹	ts ^h e ³² -ɲe ⁴⁴ , tɕ ^h ɿ ³² - ɲe ⁴⁴	C14	this year	
*ts ^h ek ^h a ¹	ts ^h e ³² -k ^h a ⁵³	C14	phlegm/spittle	
*se ²	se ⁴⁴ -gu ⁴⁴	C15	who	

After dental stops/nasals we find raising to **-i** in ‘one’ and ‘two’, but not ‘s/he’. ‘clear’ has only raised “halfway”, to **-je**; ‘hand’ and ‘deep’ have unexplained **-o** rhymes.

PER(2012)	Doshu	source	gloss	notes
*te ¹	tɕi ⁴⁴	C16	one	
*ne ¹	ɲi ⁵³	C16	two	
*mende	me ³² -dje ⁴⁴	C14	clear (weather)	
*t ^h e ¹	t ^h e ⁵⁵	C14	s/he	
*le-	lo ³² -ko ⁵³	C14	hand	
*nene	no ³⁴	C16	deep	

Otherwise, generally speaking, *e > e, with a handful of exceptions.

PER(2012)	Doshu	source	gloss	notes
*meli/mele ²	me ³² -le ⁴⁴	C14	wind	
*mbre ¹	me ³² -tsu ⁵³	C14	root	
*yeniu/yoniu	ve ⁵³ -ɲi ³²	C14	intestine	
*ɲge ²	ɲge ³²	C16	nine	
*dze ¹	ge ³²	C16	grind	*gre ¹
*bebe ¹	be ⁴⁴ be ⁴⁴	C16	crawl, climb	
*p ^h ek ^h wæ ¹	p ^h e ⁴⁴ k ^h a ⁵⁴	H12	expensive	
*me/mo	me ³²	C16	sky	
*me ¹	mi ³²	C16	fire	compare with ‘sky’
*nebre ¹	ba ⁵³	C14	tired	compare with ‘root’

P(2012)	Doshu	source	gloss	notes
*meŋk ^h e ²	me ³² .k ^h a ⁴⁴	C15	smoke	
*diutɕ ^h e ¹	k ^h u ⁵³	C14	year	*k ^h re

**ẽ* seems to have become *e*, with exceptions being ‘breath’ and ‘house’.

P(2012)	Doshu	source	gloss	notes
*sẽpu ¹	ɕe ⁵³ -pu ³²	C16	tree	
*ts ^h ẽ ¹	tɕ ^h e ⁵³	C16	goat	
*sẽ ¹	so ³²	C16	breath	
*jẽ ¹	ja ⁴⁴	C16	house	

3.6 *ew and *wE

These two rarer rhymes were reconstructed based on particular Lizu correspondences, with less weight given to Ersu (see Yu 2012, section 4.9). For these it is worth noting that those forms I had assigned to *-ew actually match up with the Ersu rhymes.

P(2012)	Doshu	source	gloss	notes
*tjẽw ¹	tɕo ³⁴	C16	boil, cook	Ersu(Zeluo) tjo ⁵⁵
*detjẽw ¹	tɕe ³⁴	C16	sour	Ersu(Zeluo) tje ⁵⁵
*ntj ^h ẽw ¹	tj ^h e ⁵³	C16	rice	Ersu(Zeluo) ntɕ ^h e ⁵⁵
*ɕewmæ ¹	je ²¹ ma ⁵⁴	H12	louse	Ersu(Zeluo) ɕe ³³
*gwEmæ ²	ge ⁵³ ma ³²	C14	back/body	
*pwEpwE ²	pe ⁴⁴ pe ⁴⁴	H12	patch (clothing)	

3.7 *o and *wo

In general, *-o remains -o in Doshu, though note the exceptions below.

P(2012)	Doshu	source	gloss	notes
*dʒo ¹	dʒo ⁴⁴ ‘have, exist (animate/abstract)’	C16	have, exist (animate)	
	k ^h a ⁴⁴ t ^h o ⁴⁴	C14	speak	*k ^h at ^h o
*ndo	do ⁵⁵		see	
*lo	-lo ⁵³	C14	tael	
*k ^h elo ¹	lo ⁵³	C16	wait	
*ne/no ²	no ⁴⁴	C16	you	
*nwo ¹	no ³⁴	C16	brains	
*ts ^h o ¹	ts ^h o ⁴⁴	C16	person/human	

PEr(2012)	Doshu	source	gloss	notes
*nts ^h o ^h iu ¹	ts ^h o ⁴⁴ nie ⁴⁴ ~ ts ^h o ⁴⁴ lie ⁴⁴	H12	flea	
*ndzomo ²	dzo ³² mo ⁴⁴	C14	official	
*zo ¹	ʒo ³²	C14	lose/owe ?	
*ʒo ¹	ke ³² -fo ⁵³ , ni ³² - xi ⁵³	C14	dew	
*mp ^h jo	tɕ ^h o ⁵³	C13b	beautiful	
*jō ¹	jo ⁴⁴	C16	sheep	
*m(b)ro ²	mo ³²	C16	horse	
*mbro	mo ⁴⁴	C16	high	
*nembo	ɲo ³⁴ bo ⁴⁴	C15	deaf	
*p ^h o ¹	p ^h o ⁴⁴	C16	escape	
*-p ^h o	p ^h o ⁵³	C16	side	
*bo ¹	bo ⁵⁴	H12	have, exist (money/valuable)	
*mbo ¹	mu ⁵³	C14	hat	
*lit ^h o/lot ^h o ¹	ji ⁴⁴ t ^h u ⁴⁴	C14	grandchild	
*k ^h ejo	ja ⁵³	C16	sleep	
*t ^h ejo	je ³²	C16	drunk	
*soniu ²	ʃɤ ⁵³ -ne ⁴⁴	C15	tomorrow	
*sohī ¹	ʃɤ ⁵³ -ne ⁴⁴	C14	next year	
*defo	ʃa ³⁴	C16	thirsty	

The ***wo** rhyme, distinct from ***o**, was reconstructed mainly after velars and bilabials. This distinction appears to be maintained in Doshu after velars, at least, where ***-o > u** and ***-wo > o** (although note the exception for ‘get up’, which has a different vowel entirely):

PEr(2012)	Doshu	source	gloss	notes
*hko ¹	ku ³² -ku ⁴⁴	C14	hole	
*k ^h o	k ^h u ⁵³	C16	owl	
*k ^h ok ^h o ¹	k ^h u ²¹	H12	curved, crooked	
*ŋk ^h o ¹	k ^h u ³⁴ -ga ⁴³	C14	lock	
*gojo ¹	vu ⁵³ -pu ³²	C16	rat/mouse	
*ɣo ¹	vu ⁵³	C15	wine/liquor	
*go ¹ æ ²	go ³² -tɕo ⁴⁴	C14	middle	
*ŋgo ²	ŋgo ⁴⁴ lje ⁴⁴	C16	tile	
*ɣwo ¹	wo ³²	C16	pig	
*deŋgwo ¹	ŋgo ³² ‘hold, grasp’	C14	pick up	
*degwo ¹	ve ⁵³ = la ³²	C14	get up/rise	

Also note the two examples of velars followed by ***-o** where the vowel did not raise to **-u**. It is

worth pointing out that the initial for ‘middle’ may also be aberrant (see section 2.5 above).

There are only two examples of **-wo* after bilabials, though ‘ten thousand’ is probably a loan from Tibetan (WT ḥbum).

PEr(2012)	Doshu	source	gloss	notes
*mbwo ²	-me ³²	C14	ten thousand	
*lo(bwo) ¹	lju ⁵³ -bu	C15	stone	

3.8 *je/*jẽ

The rhymes reconstructed as **je/jẽ* in Yu 2012 show up in Doshu as *-a*. This presents a somewhat vexing problem, as it appears that the rhymes **-a* (> *-je*, see section 3.3) and **-je/jẽ* (> *-a*) have flip-flopped! The solution proposed here is to revise our reconstruction to start off all these rhymes with low vowels at the Proto-Ersuic stage; then Lizu/Ersu undergo a brightening change resulting in **je/jẽ*, whereas Doshu undergoes brightening on the other rhyme **-a* > *-je*. Note that keeping **-a* at the proto-level makes sense, since in Doshu the change to *-je* was suppressed by a velar initial (again, see section 3.3 above). To maintain the distinction between **je* and **jẽ* (this distinction is based on certain Lizu correspondences), I have rather formulaically chosen **-an* and **-am*, respectively, to represent these rhymes.

PEr(2012)	Doshu	source	gloss	notes
*fje ¹	ʃa ⁴⁴	C16	iron	*ʃan ¹ , PTB *syam
*zjeji/zijo ²	za ⁴⁴ -mi ⁴⁴	C14	daughter ²⁴	*zan ²
*mbje ¹	(m)ba ⁴⁴	C16	mountain	*mban ¹
*tɕe ¹	tɕa ³⁴	C16	cloud	*tɕan ¹ , PTB *s-dim
*tɕ ^h e ¹	tɕ ^h a ³⁴	C14	drink	*tɕ ^h an ¹
*tsjẽ ¹	tɕa ³⁴	C16	hair	*tsam ¹ , PTB *tsam
*dzjẽ ¹	dza ⁴⁴	C16	bridge	*dzam ¹ , PTB *m-dzam
*zjẽ ¹	za ³²	C16	use	*zam ¹ , PTB *zum ≠ *zuŋ
*hjẽmæ ¹	na ⁴⁴ ma ⁴⁴	C13a	sister	*hnamæ ¹ , PTB *s-nam
*bjẽbjẽ ¹	dza ⁴⁴ -dza ⁴⁴	C16	fly	*bjam, PTB *byam
*tsjẽp ^h rje ¹	p ^h e ³⁴	C16	braid / plait	possibly *p ^h ran, PTB *pran/t
*bædzje ¹	ba ⁴⁴ dʒe ⁴⁴ ‘copper coin’	C14	money	possibly *bædzan ¹
*tjeki ¹	tɕe ⁴⁴ le ⁴⁴	C16	ladder	PTB *s-lay ≠ *s-ley

The Doshu form for ‘fly’ has undergone palatalization of the initial, which would not be expected simply from the rhyme *-am*; a palatal glide is added to the reconstruction to account for this (this happens to agree with the PTB root as well).

²⁴This root may be < PTB **za-n* CHILD, but note that Proto-Ersuic also has the non-suffixed form PTB **za* > **zi* ‘son’.

The two forms for ‘braid’ and ‘money’ are also unusual, having the rhyme **-e** in Doshu, while having been reconstructed with **-je** in Yu 2012:107. If we revise their reconstructions to use ***-an** we would have to explain the vowel raising, which is somewhat difficult to do given that we might expect a retroflex initial/medial to promote rounding, rather than raising; on the other hand the similarity with the PTB root ***pran** BRAID is rather suggestive.

The form for ‘ladder’ also does not fit this pattern, and it does not seem likely that it reconstructs to ***lan**.

Two more forms originally reconstructed with ***je/jē** have **-o** rhymes in Doshu. Given the similarity with the form for ‘breath’ (reconstructed with ***-ē**), this may point to the necessity of reconstructing another rhyme to account for this sound correspondence. For now I will simply list these forms here for future reference.

PEr(2012)	Doshu	source	gloss	notes
*k ^h je ¹	k ^h o ⁵³	C16	give	
*sjē ²	so ⁴⁴	C16	three	PTB *g-sum
*sē ¹	so ³²	C16	breath	

3.9 *u

***-u > -u**; though a few forms exhibit **-e**.

PEr(2012)	Doshu	source	gloss	notes
*t ^h u ²	k ^h u ³⁴	C16	six	*k ^h ru ²
*t ^h u ¹	ku ³⁴ -ə ³⁴	C14	sweat	*kru ¹
*riku/rik ^h u ¹	ju ⁵³ ku ³²	C14	bone	
*gu ¹	gu ³²	C14	boat	
*zuz ^u ²	vu ³²	C16	narrow	
*d ^h u ¹	dzu ³²	C16	waist	
*zjendzu	(n)dzu ³² -zi ⁴⁴	C14	nephew	
*let ^h u ¹	t ^h u ³² ta ³² -p ^h o ⁵³	C14	right (side)	
*su	- ^h u ³²	C16	nominalizer	
*zu ¹	zuə ⁴⁴	C15	oil	
*ts ^h uts ^h u ¹	t ^h u ⁴⁴ ‘pound, hit’	C15	knock, strike	
*rdurdu	dzu ³⁴	C15	thick	
*pu	pu	C15	classif. tree/fl	
*mps ^h u ¹	ts ^h u ³⁴	C14	hail	
*mp ^h ru ¹	mu ⁴⁴ - ^h u ³²	C14	thief	
*wulje ²	vu ⁵³ dzu ³²	C14	head	
*ŋu ¹	ŋe ⁴⁴	C16	cry	
*nts ^h u ²	ts ^h e ³⁴ -pu ³²	C16	lungs	
*zu ¹	je ³²	C14	snow	

PEr(2012)	Doshu	source	gloss	notes
*mu ¹	me ⁴⁴	C16	do/make	

These last four roots all have solid reconstructions with *-u based on the Lizu/Ersu evidence, though given this new data perhaps a revision may be necessary.

3.10 *ui

We now turn our attention to the rhyme *-ui, which only shows up after velars and bilabials. Several good roots show an -e rhyme:

PEr(2012)	Doshu	source	gloss	notes
*xui ¹	ɕe ⁵³ .ma ³²	C14	tooth	
*xui	ɕe ⁴⁴ -ɕe ⁴⁴	C15	walk	
*deyui ¹	ve ³⁴	C16	wear	

On the other hand, other good roots have -u or -o (or -a, if you believe ‘bear’ is cognate).

PEr(2012)	Doshu	source	gloss	notes
*ɣui ¹	vu ⁴⁴	C16	buy	
*ŋui ¹	ŋo ⁴⁴	C14	silver	
*xui/ŋui ¹	wa ⁴⁴	C14	bear	possibly *hŋui ¹ or *sŋui ¹
*ŋui ²	ɲu ³²	C16	cow/ox	perhaps a loan from Mandarin niú

The one example after a bilabial has the rhyme -u.

PEr(2012)	Doshu	source	gloss	notes
*mui ²	mu ³⁴	C16	hair (body)	

3.11 *iu

After an *-r- medial, *-iu > -e:

PEr(2012)	Doshu	source	gloss	notes
*kriu	ke ³⁴	C14	frost	
*dzju ¹	ge ³²	C14	wok/cooking pot	*griu ¹
*ŋgriupje ¹	ge ⁴⁴ pi ⁴⁴	C16	skin	

The general pattern also seems to be -e:

PEr(2012)	Doshu	source	gloss	notes
*piu ¹	fe ³² -əɪ ³⁴	C16	pus	
*niumæ ¹	ɲe ⁴⁴ -ma ⁴⁴	C14	sun	
*niu	ne ⁴⁴	C16	day	
*nts ^h oɬiu ¹	ts ^h o ⁴⁴ nie ⁴⁴ ~ ts ^h o ⁴⁴ lie ⁴⁴	H12	flea	
*netɕ ^h iu/ netɕiu ¹	ge ⁵³	C16	set (of sun)	
*tɕ ^{wh} iu ²	k ^h e ⁴⁴ , k ^h e ⁵³ ɲi ³²	C14	dog	*k ^{wh} iu ²
*det ^h iu ¹	tʃ ^h e ⁴⁴ -tɕo ⁴⁴	C16	sweet	
*dzju ¹ OR *dzju ¹	dʒe ⁵⁴ ‘have, exist (movable)’	H12	have, exist (con- tainer) ²⁵	

After retroflex fricatives we seem to get **-u**. A few forms with other vowels are also listed below:

PEr(2012)	Doshu	source	gloss	notes
*zju ²	vu ³²	C14	four	
*ɕiu ¹	ʃu ⁴⁴	C16	blood	
*diup ^h æ ¹	do ⁴⁴ -p ^h a ⁴⁴	C16	belly	
*liu ¹	lju ⁵³	C13b	loot/plunder	compare with second syllable of ‘flea’
*biususu ¹	bu ³² -ɕu ⁵³ -ɕu ³²	C14	bladder	compare with ‘pus’

3.12 *i

After an ***-r-** medial (which has dropped out), we find the rhyme **-e**. (Recall from Yu 2012, section 4.2.2, that ***-ri** and ***-riu** are only distinguishable from the vowel in Ersu.)

PEr(2012)	Doshu	source	gloss	notes
*kri ¹	ke ³⁴	C16	star	
*t ^h egri ¹	ge ⁴⁴	C16	hear	

Note that **k^ha³⁴** ‘bite’ does not seem to descend from Proto-Ersuic ***kri** since neither the aspiration on the initial nor the rhyme match.

Otherwise, more often than not we find **-i** in Doshu:

PEr(2012)	Doshu	source	gloss	notes
*dzi ²	dʒi ³²	C16	eat	PTB *dzya
*ts ^h i ²	tɕ ^h i ⁴⁴	C16	salt	PTB *tsa
*zi ²	ʒi ³²	C16	son	PTB *za

²⁵This root does not seem to appear in Ersu, so it is impossible to decide if the reconstructed initial should be retroflex or palato-alveolar.

P _{Er} (2012)	Doshu	source	gloss	notes
*zikæ	zi ⁴⁴ ka ⁵³	C16	foolish/stupid	
*ni ¹	ji ⁴⁴	C16	gold	PTB *r-ni RED
*megi ²	me ³² -dʒi ³²	C14	thunder	
*bi ²	bi ³²	C16	bee	PTB *bya
*mi	mi ³²	C16	monkey	
*mjidzi ²	mi ³² dʒi ⁴⁴	C14	rabbit	second syllable expected dʒi
*ji ¹	ji ⁴⁴	C14	go	PTB *ʔay
*pwEki/pwEtçi	pe ³² tçi ⁵³	C14	send/dispatch	
*bedi ¹	be ³² dʒi ⁴⁴	C13b	insect	PLB *di ¹
*hi ²	mi ⁴⁴	C16	bamboo	PTB *ma
	tçi ³²	C16	put, place	*tçi

A number forms originally reconstructed with *ni have various vowels in Doshu. These are discussed in section 2.9.3, above.

Two somewhat aberrant forms have -a:

P _{Er} (2012)	Doshu	source	gloss	notes
*pimæ ¹	pa ⁴⁴ ma ⁴⁴	C16	frog	
*bi ¹	ba ³²	C16	thin	

Finally, a fairly large number have -e or -je instead:

P _{Er} (2012)	Doshu	source	gloss	notes
*rdi ¹	ɕe ³⁴	C16	eight	PTB *b-r-gyat ≠ *b-g-ryat
*(ri)ni ¹	wa ⁴⁴ -je ³²	C14	near	PTB *s-ney
*ʃi ²	ʃe ⁴⁴	C16	meat	PTB *sya
*si ¹	se ³²	C16	hit/kill	PTB *g/b-sat
*ʃjeki ¹	tɕe ⁴⁴ le ⁴⁴	C16	ladder	PTB *s-lay ≠ *s-ley
*mi ¹	mje ⁴⁴	C13a	name	PTB *r-miŋ/n
*nemi ¹	mie ²¹ ko ⁴⁴	H12	swallow	
*mp ^h i ²	p ^h je ³⁴ ‘vomit’	C16	spit	PTB *m-pat

Peeking at the PTB roots, we notice that many in the -i set have open syllables, whereas a number in the -e set have closed syllables. Perhaps there were actually two rhymes in Proto-Ersuic for what was originally reconstructed as *-i. I will leave this as an exercise for the future.

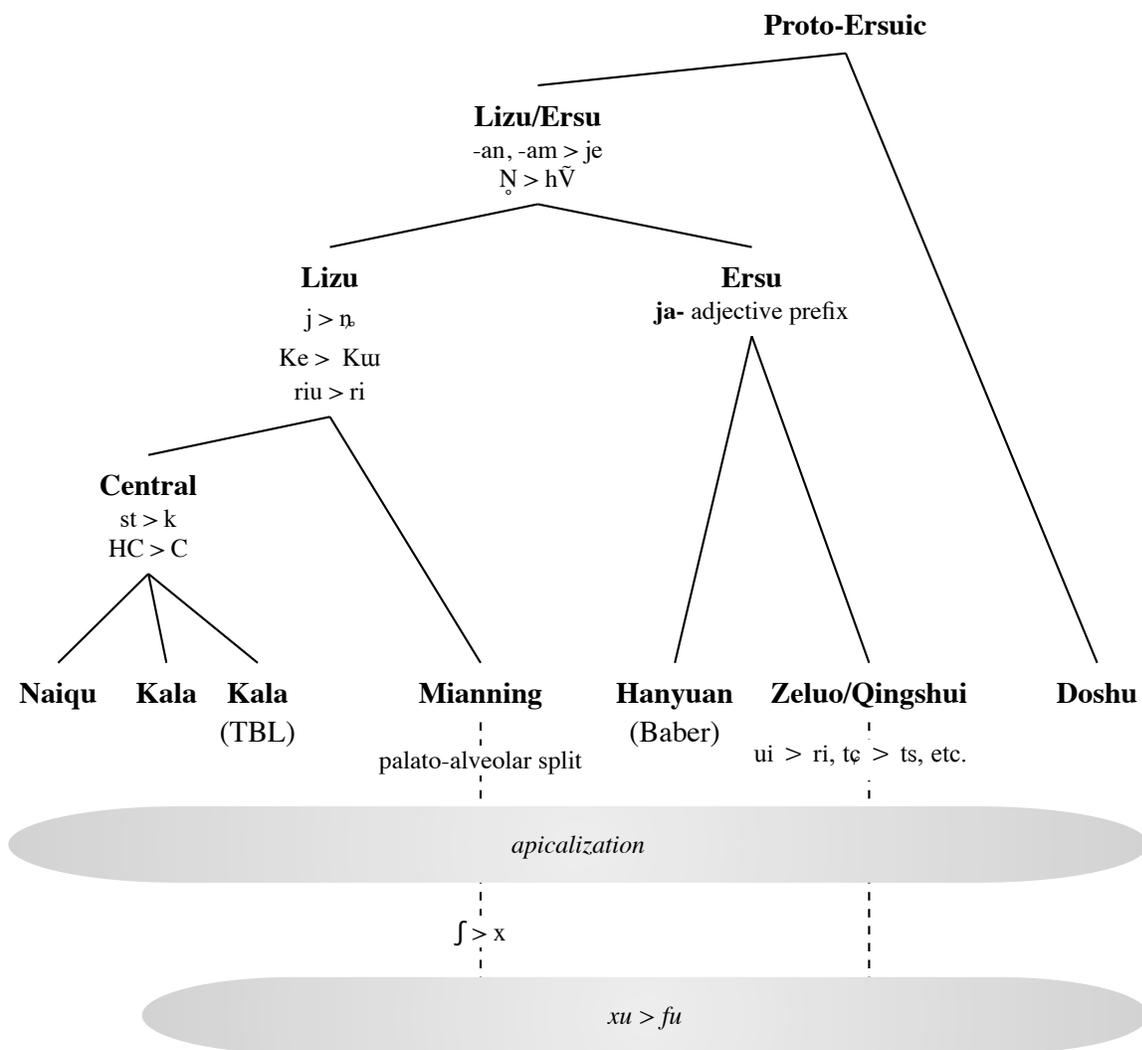


Figure 1: Ersuic family tree

4 Subgrouping

In Yu 2012, chapter 7, I preliminarily placed Doshu (aka Tosu) into its own branch, since it did not appear that it belonged with either Lizu or Ersu.

Based on our analysis of new data from Doshu, it seems that this is correct, i.e., that Doshu is in fact separate from Lizu and Ersu; and that furthermore, Lizu/Ersu form an independent branch of Ersuic, characterized most saliently by a brightening change of the rhymes we are labelling ***-an** and ***-am > *-je** and ***-jě**, and by the transmogrification of voiceless nasal initials into nasalized **h**.

The updated family tree for Ersuic (superseding Yu 2012, Figure 7.1) is presented here. Unfortunately, graphically speaking, combining Lizu/Ersu into a node prevents us from placing Doshu next to the geographically proximate Mianning variety of Lizu, but we are still able to maintain the positional indication that all varieties underwent a late (areal) apicalization change, and that all varieties except for Naiqu underwent the **xu** > **fu** change.

5 Conclusion

It is interesting and perhaps a bit surprising how well the reconstruction of Proto-Ersuic from Yu 2012 holds up in light of the new data from Doshu.

Consider the changes that we have made to the Proto-Ersuic system (listed here in order of sweeping-ness):

1. a wholesale revision of ***je**, ***jẽ** to ***an**, ***am** (including one form with a palatal glide medial)
2. introduction of voiceless nasals at multiple places of articulation (replacing nasalized glottals)
3. addition of ***s**-prefixed nasals
4. addition of palatal nasals
5. addition of prenasalized fricative ***s** to account for forms like ‘liver’

Note that the removal of ***hṼ-** means that the only nasalized vowel left in the system is ***-ẽ**. An updated version of Yu 2012, Figure 2.2 is presented here, with ***-an**, ***-am** placed in the “nasal” box on the right.

i	iu	ui	u	ri	riu	ru	ẽ an am
		wE	wo	re	ro		
e	ew		o	ræ	ra		
(w)æ	ja		(w)ɑ				

Figure 2: Proto-Ersuic rhymes

With just these five revisions, we were able to account for most of the Doshu data. This only reinforces how close Doshu is to Lizu and Ersu. It also highlights the importance of using reconstruction to establish genetic relationships, and the fallibility of guessing at cognacy via surface similarities, relying on a single sound correspondence, or relying on typological features.

I believe that the reconstruction of Proto-Ersuic presented here firmly places Doshu within it, and that the directional prefixes found in Lizu/Ersu may well be a later development due to areal influence.

I would like to close by saying that surely this reconstruction is wrong, in that, for example, it seems highly unlikely that a language would have all open syllable rhymes *except* for ***an** and ***am**. I also hinted at splitting *-**i** and *-**u** each into two rhymes, but made no concrete proposals for this. Chirkova and Handel (2013a) report that Ersu has apparently vestigial glottalization on certain nasal initials, and Zhang Sihong's (2013) dissertation presents a wealth of new data for Ersu. I have not even attempted to reconstruct tone; Chirkova and Handel (2016) are of the opinion that the four basic tones of Doshu (Huáng and Yǐn 2012 report five basic tones!) are reconstructable to the proto-level. As always, the hope is that more and more data is published and we can refine our understanding of Ersuic and how it relates to Tibeto-Burman as a whole.

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