Evidence for Historical Sound Change in Traditional Zhuang Texts

David Holm

The traditional character script used among the Zhuang and other Tai-speaking peoples is widely held to date from around the Tang dynasty, some 1600 years ago. There is very little external evidence for the date of this script, and what little exists is difficult to interpret. This paper will adopt a different strategy, and examine the evidence internal to the script itself. That is to say, it will seek to clarify the dating of various readings of the Chinese characters and their phonetic components used in the script, by comparing these readings with the reconstructed historical pronunciation of the same graphs in Chinese at various periods.

The following discussion is based on a survey of the traditional script in 45 locations spread across Guangxi, Guizhou, eastern Yunnan, and northern Vietnam. The survey is based on attested readings from traditional texts, rather than dictionary entries. Given the complexity of the issues involved, I will proceed by analysing readings for a single example, *naeuz* (nɐu^{2}) 'to tell', a common word in the Northern dialects of Zhuang and Bouyei (Yay).

HCT seems not to have listed this word, which is not found under either 'to speak' or 'to tell'. Nor is it listed in Liang Min and Zhang Junru's *Dong-Tai yuzu gailun*, or in Xing Gongwan's *Han-Taiyu bijiao shouce*. The Zhuang dialect survey lists this item (ZhYFYYJ, p. 715, item 821), which is glossed as 告訴 'to inform'. In this source, nau^{2} is found consistently in most Northern Zhuang and a few Southern Zhuang locations, while other areas have other morphemes such as lun^{6} (lən^{6}), kau^{5}, or ha^{4} (ja^{4}).

Yongxian Luo points out that this lexeme has pan-Tai roots, being related to Thai and Lao *law* (B2), Dehong *lau* (B2/A1, Phake *lau* (B2), White and Black Tai *lau* (B2), Lungming *naw* (A2), Nung *lau* (A1/B1, Yay *naw*^{4}, and Fengshan *nau*^{2}. Luo proposes reconstructing initial *nl- in PT for this etymon.[1] This proposal can be corroborated by evidence from the traditional Zhuang script.

Li Fang Kuei reconstructs a PT initial *nl/r-, but no *nl-. Of the former, he notes, "The -l- or -r- after the nasal is indeterminate." The effect of this cluster, however, is exactly the opposite of what we have with *naeuz*, in that it is represented in the SW and CT dialects by n-, and in the NT dialects by a variety of initials including l-.[2] Here, as we will see, what we require is a proto-initial cluster which has the opposite effect, namely l- in SW and CT dialects, and n- in NT.Before we start, however, there is another possibility to keep in mind, which is that the script may represent only approximate or partial correspondence, representing n- by characters with initial l- or vice-versa. It is for this reason that we must proceed carefully and methodically.

I will first discuss one particular series in detail, and then go on to discuss things more briefly but systematically.

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[1] Yongxian Luo, *The Subgroup Structure of the Tai Languages*, Journal of Chinese Linguistics Monograph Series 12, 1997, p. 79.

[2] For discussion see HCT 131–132.

1.1 Graphic Series with 牛 *niu*[2] 'ox' as the common element

1.1.1 吽

This character is used for *naeuz* in Wuming, Mashan, Du'an, Dahua, Bama, and Tiandong, all locations in central and central-western Guangxi where the pronunciation of this morpheme is nɐu[2].

It is not easy to link up the Zhuang reading of this character with Chinese reading pronunciations. 吽 is listed in the authoritative *Hanyu dacidian* with three pronunciations: hou[3], ou[2], and hong[1] (HYDCD 3:209).

In recent centuries the last of these readings has been by far most prevalent in Chinese society, since it was used to transliterate the Sanskrit syllable *huṃ* in Buddhist mantras (see Soothill and Hodous, p. 233). 吽 in this reading was one of the six mantric syllables borrowed from Sanskrit, along with an 唵, ma 嘛, ni 呢, ba 叭, and mi 咪, which together made up the famous mantra of Avalokitešvara (Guanyin pusa 觀音菩薩), "Om! mani padme huṃ" (Om! the jewel in the lotus). These characters were sometimes referred to as the 'six golden characters' (*liuge jinzi* 六個金字), as in chapter 14 of the Journey to the West (*Xi you ji* 西游記). There is also abundant commentary in Buddhist treatises about the meaning of the syllable *huṃ* and the character 吽. For instance: 吽者其音如牛吼，是降伏之聲也，又吽者風大之種子，風有擺破之能，故為降伏之加句。 'The sound of *huṃ* is like an ox bellowing. It is the sound of being subdued. Again, *huṃ* is the germ-sound of a great wind. The wind has the power to uproot and break through things, and therefore it serves as an accompaniment to the vanquishing [of ignorance].' (*Foxue da cidian*, p. 1479 column 2).

Unfortunately, of the three readings of 吽, hong[1] is the least likely to have served as the reading which led to this character being used to represent *naeuz*, in spite of the relatively widespread availability of Buddhist texts in pre-modern Guangxi rural society. Neither the initial nor the final are in even approximate correspondence. The tone of this syllable also, while it is in the *ping* 'level' category, is *yinping* 陰平 rather than *yangping* 陽平, in other words, a tone category that corresponds most often with tone 1 in Zhuang, rather than tone 2.

The other two readings are relatively uncommon in Chinese, and are only found in classical texts. Let us first turn to *hou*[3]. The character in this pronunciation has the meaning 'to bellow (of a cow)', and by extension, 'to cry out in anger'. According to Wang Li, following the *Guangyun* 廣韻, with this reading the character has the same meaning and pronunciation as 吼, MSC *hou*[3], 'to bellow, roar'.[3] This pronunciation seems to occur fairly widely in Chinese literature from the Song period on. Given the graphic composition of the character, a mouth 口 combined with an ox 牛, this semantic meaning is readily accessible to literate Chinese, even those with relatively little formal education.

[3] Wang Li, *Wang Li gu hanyu zidian*, p. 108.

The phonology of *hou*^{3} is given in the *Guangyun* as: 呼后切, 上厚, 曉。'pronounced as a 呼 initial, 'cut' with a 后 final, rising 上 tone category, hou 厚, with initial 曉'. The reading of 曉 is rendered for Middle Chinese as xɛw' (Pulleyblank p. 340), while the rhyme has the MC value of -əw' (Pulleyblank p. 125). The MC pronunciation of 吽 hou^3 can therefore be given as xəw'. It can be seen that the rhyme is plausibly in correspondence with the Zhuang reading, but the initial is not; nor is the tone.

Turning finally to the reading *ou*^{2}, this is found only in the two-character alliterative phrase 吽牙 (MSC *ou*^{2} *ya*^{2}), meaning 'the sound dogs make when they are fighting'.[4] The phrase is alliterative because both syllables used to begin with initial ng- (ŋ-). Here 牙 *ya*^{2} (EMC ŋai/ŋɛ:) is 'tooth', and the meaning of the character ou^2 would seem to be onomatopoetic, representing the sound of barking and growling. This phrase is found in one of the biographies in the *Hanshu* 漢書 ('Dongfang Shuo zhuan' 東方朔傳), where the following sentence is found: 狋吽牙者，兩犬爭也。Yi ou ya zhe, liang quan zheng ye. "The phrase 'yi ou ya' refers to two dogs fighting." (*Hanshu*, juan 65, pp. 2844–45). In this passage, the meaning of the phrase is being discussed, and the above sentence is Dongfang Shuo's response to a question by an interlocutor (Guo Sheren 郭舍人). The meaning of the phrase and the pronunciation of the characters is also discussed in the commentary by Yan Shigu 顏師古, which would seem to indicate that the phrase was obscure even by the Tang, when Yan Shigu wrote his commentary. Subsequently this phrase seems to be found rather infrequently in classical literature. It is found in a memorial by Du Mu 杜牧 in the Tang, and again in the *Yijian zhi* 夷堅志 of Hong Mai 洪邁 during the Song. By the later imperial period it seems to used more generally with the derived meaning of 聱牙 (MSC *ao*^{2} *ya*^{2}) 'stubborn or un-melliflous writing' (HYDCD 3:209).

The phonology of the reading corresponding to modern *ou*^{2} is listed in the *Jiyun* 集韻 as 魚侯切，平矦，疑, 'pronounced as a 魚 initial 'cut' with a 侯 final, level 平 tone category, *hou* 矦 rhyme, with initial 疑'. This tells us that in Middle Chinese the character 吽 was read with the same initial as 魚 and the same final as 侯, in the level tone category; and that its rhyme category in Middle Chinese was hou 矦 and its initial category was 疑. Here, 疑 (MSC *yi*^{2} 'to suspect, doubt') is the traditional name for the velar nasal initial in Middle Chinese (Baxter p. 58), which Pulleyblank (p. 366) renders as EMC ŋi/ŋi and LMC ŋi. The rhyme hou 矦, on the other hand, was pronounced -əw in Middle Chinese (Pulleyblank p. 125). This gives us a reconstituted pronunciation of ŋəw for this character in Middle Chinese. This can be confirmed by observing that the reading of 魚 (MSC *yu*^{2} 'fish') given in the *fanqie* spelling in the *Jiyun* was ŋiă in EMC and ŋiă/ŋyă in LMC (Pulleyblank p. 380).

The phonology of the reading *ou*^{2} seems more or less appropriate as a source for the Zhuang reading of as *naeuz*. The problem is that this reading was relatively uncommon in Chinese. One could argue, of course, that the *Hanshu*, as one of the more important dynastic histories, would have been widely available among scholarly circles and even in fairly low-level prefectural and county schools and academies.

[4] Such phrases are known as *shuangsheng lianmian ci* 雙聲聯緜詞 in Chinese.

Reading the dynastic histories was a well-established part of the traditional curriculum.[5]

A much simpler solution is at hand, however, which is to read 吽 as 牛 (MSC *niu*^{2} 'ox, cow, cattle'). Pulleyblank's rendering of this common character in Middle Chinese is ŋuw for EMC and ŋiw for LMC (Pulleyblank p. 227). Baxter (p. 779) gives the reconstruction ngjuw for MC and *ng^{w}ji for OC (see also p. 58 for his discussion of velar initials in MC). Note that unlike Pulleyblank, Baxter reconstructs a palatal medial glide for this lexeme. The *Guangyun* gives the phonology of this character as: 語求切, 平尤, 疑 (HYDCD 6: 225). Here, the rhyme category 尤 (MSC *you*^{2} 'fault; excessive') gives an EMC rhyme of -uw (Pulleyblank p. 378), while the 疑 initial indicates a velar nasal initial ng- (ŋ). The tone category 'level' corresponds to tones 1 and 2 in MSC. In modern Mandarin, 牛 is pronounced in second tone, corresponding to the tone category *yangping* 陽平. *Yangping*, in turn, most often corresponds to tone 2 (-z) in Zhuang. In initial, rhyme, and tone, this reading corresponds well with *naeuz*.

The question then becomes: where is this borrowing most likely to have come from, Middle Chinese, Cantonese, Southwestern Mandarin, Hán-Việt, or Pinghua? For convenience, these readings are set out below (Pinghua and Hán-Việt (Hue) readings are taken from Li Lianjin item 1666 p. 167; official Hán-Việt is taken from the *Hán-Việt Tự Điển*; and SW Mandarin is taken from *Liuzhou fangyan cidian*):

MC	ŋuw (Pb), ngjuw (B)
Cantonese	ŋɐu^{21}
SW Mandarin	niɐu^{21}
Hán-Việt (Thanh Hoa)	ŋɯu^{44}
Hán-Việt (official)	ngưu
Pinghua	
Mashan	ŋ̊ou^{41}
Tiandong	ŋ̊ɔu^{41}
Bose	ŋ̊ou^{42}
Funing	ŋ̊ou^{31}
Nanning	ŋ̊iɐu^{21}
Longzhou	ŋ̊ou^{31}
Fusui	(j)iou^{21}
Hengxian	ŋ̊ou^{25}
Binyang	ŋ̊iou^{213}
Rongshui	ŋou^{21}
Lingui (Liangjiang)	ŋ̊au^{12}
Lingui (Wutong)	ŋ̊ao^{21}
Lingchuan	ɕiou^{13}
Ningyuan	u^{35}

[5] Chinese-style schooling became much more widely available in the minority areas of Guangxi after the 1730s. On this point, see D. Holm, 'Some Variant Characters in a Traditional Zhuang Manuscript', *Bulletin of the Museum of Far Eastern Antiquities* 78 (2006), 158.

Yulin	ɲɔu^{31}
Tengxian	ŋɐu^{212}
Pingle	ŋaːo^{31}

We can probably rule out Hán-Việt and Southwestern Mandarin as sources of this reading, the former because of the rhyme and the latter because of the -i- glide (though this may be an effect of the transcription). That leaves us with MC and Pinghua readings. It is more difficult to choose between MC and Pinghua readings. Most Pinghua locations show signs of palatisation (initial ny-, ɲ), while others show a velar nasal ng- (ŋ). Some of this variation may be an effect of transcription practices. The dictionary of Nanning Pinghua compiled by Qin Yuanxiong et al. gives ɲəuˬ for this item (*Nanning pinghua cidian*, p. 157). It may be remarked in passing that Chinese linguists often conflate the palatal nasal ɲ with either ŋ or ɲ, and often fail to recognise it. To return to our table above, while some Pinghua localities are quite idiosyncratic (Fusui and Lingchuan), no locality has plain n-. As is often the case, the most conservative Pinghua readings are found in the northeast of Guangxi, in such locations as Rongshui and Lingui. Most locations also have the low falling tone contour that is such a common realisation of 2nd tone in Zhuang, and two have the short central [a] plus labial coda (ɐu) found in *naeuz* (Lingui, Tengxian). While -ou and -iou finals are more common, it may be observed that the -aeu rhyme in Zhuang (short a + u) frequently sounds very much like -ou. Thus either MC or Pinghua is a close fit.[6] Cantonese is also quite close to the Zhuang reading in this case, though it should be noted that Cantonese only arrived on the scene as a major linguistic influence in Guangxi during the 18th century.

While the nasal sounds ɲ, ŋ and ɲ are often conflated, they are relatively easy to distinguish from n-. The question arises, then, why would Zhuang scribes choose to write a word like *naeuz* with a character like with 牛, rather than one with initial n- as well as the requisite rhyme and tone category – assuming of course that the character has been borrowed to represent the modern pronunciation *naeuz* (nɐu^{2}) and does not represent an earlier pronunciation of this morpheme?[7] A plausible answer to this can be given on the basis of Pinghua phonology. Basically, no such characters are available. Under nəu the Pinghua dictionary lists only two characters, 扭 (MSC niu^{3} 'to twist'), pronounced nəu^{33}, and a dialect word meaning 'to hate', pronounced nəu^{53}. Neither of these words is in the right tone category: 33 is *yinshang* and 53 is *yinping*. As we shall see further on, however, the phonetic graph 丑 (MSC chou^{3}) in 扭 is in fact used in some localities to write *naeuz*. Other words which might be thought could be employed to write *naeuz*, such as nao 撓 (MSC *nao*^{2} 'to impede') or 鐃 (MSC *nao*^{2} 'cymbals') belong to a rhyme category which have -au final in Pinghua and -au final (aːu with long a) in Zhuang (e.g. *nauz* 'cymbals', ZHCH 562). Long a and short a are not normally confused or conflated, at least not in the central part of Guangxi.

[6] Another way of putting this, of course, is that Pinghua has remained phonologically close to MC, at least for this lexeme.

[7] The contrary assumption is that these characters were borrowed when *naeuz* was pronounced with an nl- initial. On this, see below.

On the other hand, these characters may have been borrowed when *naeuz* was still pronounced with the hypothesised nl- initial. In that case, the explanation is even more straightforward. We may conjecture that 牛 was chosen to represent *naeuz* because the nasal cluster initial ngj- was perceived as very close in sound quality to the nasal cluster initial *nl- in *naeuz*. Also, of course, the rhymes and tones fit very well with MC readings of 牛, so the fit is good overall. It is plausible to suppose that the graphs 𠰁 and 牛 were adopted around the time of the initial ngj- split, assuming Pulleyblank's ngi- is very much similar to Baxter's ngj-. This would lend support to the idea that the Zhuang character script dates from around the Tang dynasty.

Finally, we may note that the character 𠰁 is found in Cantonese with the pronunciation ngaû, meaning 'dull, stupid; a dolt'.[8] Both the pronunciation and the meaning are non-standard, though the meaning is easily derivable from the semantic field 'bovines' and the pronunciation is apparently taken directly from the 牛 component of the character. This may be considered to provide some corroboration for the proposed solution here, namely that 𠰁 is read as 牛 in Zhuang manuscripts.

1.1.2. 牛

Further corroboration of this point may be found that in at least one locality (Jiuzhou in Tianlin county), 牛 (MSC niu^2 'ox, cow, bovine') is used directly for *naeuz*, without the mouth radical. The phonology of 牛 has already been amply discussed in the preceding section.

To sum up matters so far, the lengthy discussion in the preceding section went carefully through the conventional Chinese readings of the character , arriving at the point where it became necessary to look for reading pronunciations other than those listed for the character in the dictionaries and rhyme books. Such reading practices may be termed catalytic readings. Catalytic readings are where an existing Chinese character is as it were 'broken apart', and read not as a whole but as one of its constituent parts. These catalytic readings are relatively common in traditional Zhuang manuscripts.[9] They are related to cultural practices in traditional Chinese society which involved 'taking characters apart' (*chaizi* 拆字), either for fortune telling or for other purposes.[10]

The discussion has arrived at a further consideration, which is that understanding of the relative frequency and usage of Chinese graphs and the social and cultural background will often assist in making better guesses about the likely basis for readings in Zhuang texts. Also, knowledge of the readings in other localities makes the process of decoding and explication of traditional Zhuang texts much more assured. In this case, 𠰁 and 牛 form part of a graphic-phonetic system, with 牛 as the common graphic element and phonophoric component. Geographically, Tianlin lies to

[8] Roy T. Cowles, item 3043, p. 158.

[9] See Holm, 'A Typology of Readings of Chinese characters in traditional Zhuang manuscripts', *Cahiers LAO* 38:2 (2009), 268-75 and 281-2.

[10] On which see Lu Xixing, *Hanzi de yinmi shijie: Hanzi minsu shi* [The secret world of Chinese characters: a history of the folkore of the Chinese script], Shanghai: Shanghai cishu chubanshe, 2003, pp. 70-106.

the west and north of the areas in which 吽 is current, but the history of the text suggests that Tianlin readings came from further east and south.

Rather than rehearse other character readings for *naeuz* at the same level of specificity, in the rest of this article we will look at two other regional systems. Here, it will become clear that there are many features in the traditional Zhuang script that can only be addressed on a system-wide basis.

2. Regional Systems

The following discussion is based on a survey of traditional texts in Zhuang, Bouyei, Nùng, Thổ, and Tày, taken from 45 locations covering Guangxi, Guizhou, eastern Yunnan, and the northern part of Vietnam.[11] A synoptic table is given below.

Graphic-Phonetic Series	*No. of Locations*
A. 嚁, 噜, 嘈, 嚠 (1, 2, 3, 4)	10
B. 丑, 吜, 扭 (5, 6, 7)	7
C. 耨 (8)	1
D. 嘌 (9)	1
E. 㕦, 奴, 双 (10, 11, 12)	6
F. 唎, 剢, 刘 (13, 14, 15)	5
G. 吽, 牛 (16, 17)	8
H. 叫 (18)	2
I. 喽 (19)	1
J. 闹 (20)	2
K. 挠 (21)	1
L. 当 (22)	1

Table 1. Characters used for naeuz in the old Zhuang Script

As can be seen from Table 1 above, altogether 22 characters are found representing *naeuz* in our survey. Far from being unrelated to each other, they can be grouped into graphic-phonetic series as is done in the above table. These graphic-phonetic series either form regional systems, or else are single graphs. Of the above series, C, D, I, K and L are each found in one location only and are likely to be local innovations. The other graphs are found in more than one location or represent variants in a series.

Overall, there are five main regional systems and two minor ones. Series A with 留 *liu*^{2} 'to sojourn' as phonophore is found in 10 locations in the Tianyang-Bama area, in west-central Guangxi. The four graphs in the series are found in the following locations:

[11] See Holm, *Handbook of the Old Zhuang Script*, forthcoming, for a survey of 60 common morphemes.

1	嚗	northern Tianyang (3 locations), southern Bama (3 locations), eastern Bose, northern Tiandong:
2	嚗	southern Bama (2 locations), Tianyang county seat
3	嚗	southern Bama
4	嚗	northern Tianyang

Series B with 丑 *chou*^{3} as the common graphic element and 扭 *niu*^{3} as phonophore is found in 7 locations in an arc running between Bose and Yishan across north-central Guangxi, and in eastern Yunnan. The three graphs in the series are distributed as follows:

5	丑	eastern Bose
6	咀	Yishan, Donglan, southern Bama, northern Tiandong, Napo
7	扭	Xichou

Series E with 奴 *nu*^{2} as the common graphic element and 呶 *nao*^{2} 'to make a noise' as phonophore is found in 6 locations in southern Guizhou, northern and north-central Guangxi, and in northern Vietnam. The three graphs in the series are found in the following locations:

10	呶	Libo, Huanjiang, and Donglan
11	奴	Mashan, Donglan
12	双	Lạng Sơn[12]

Series F with 刘 (劉) *liu*^{2} 'battle-axe; (a surname)' as the common graphic element is found in 5 locations in east-central Guangxi:

13	哾	Liuzhou, Laibin
14	剄	Laibin
15	刘	Laibin, Mashan, Shanglin, Xincheng

Series G with 牛 *niu*^{2} as phonophore is found, as we have seen, in 8 locations in an arc running from Wuming in the east through Mashan to Du'an, Dahua and Tianlin in the northwest.

Series H (叫 *jiao*^{4} 'to call out') is found in Wuming and Tiandong; while it may be a semantic borrowing, it is just as likely to be a graphic re-configuration of 吽 (16). Series I (喽 *lou*^{2} 'bandit follower') is found in Wuming in central Guangxi.

Of the remaining series, K (当 *dang*^{1} 'ought') is likely to be a serial semantic borrowing, e.g. from *dangq* 'to enjoin'.

It will be observed that several of these systems are found in both the NZh and SZh locations, i.e. in both NT and CT areas. The B series, while found mainly in the north, is also found in Napo, in the southwestern corner of Guangxi, and in Xichou in eastern Yunnan (in a manuscript written in the Nung dialect). The E series is found in

[12]双, a simplified graph for 雙 *shuang*^{1} 'pair' is to be read here as a graphic approximant of 奴 *nu*^{2}. This reading is also found in other Zhuang texts, such as the Hanvueng from southern Bama county.

Lạng Sơn Thổ as well as locations in north and north-central Guangxi. The other series are confined to the north: The A series is confined to the Tianyang region, F is found only in east-central Guangxi, and G, H, and I are all distributed variously between central Guangxi and points north and west.

Series A, F and I, which have graphics pointing to initial l-, are all found in areas which are now NT-speaking. The current pronunciation, nevertheless, is with initial n- in all areas within our survey. In fact, *naeuz* is pronounced in all areas, both north and south, as nau^{2}, so there are no current diglossal lines which are relevant to the distribution of these graphic series.[13]

Analysis

As mentioned above, a number of these graphic systems have common graphic-phonetic elements with initial l- rather than initial n-. These are Series A, F, and I, found respectively in the Youjiang River area, east-central Guangxi, and Wuming in central Guangxi. These are all areas where Chinese state power – and with it the Chinese script – was established relatively early. By relatively early I mean from the Tang period (618-907 CE) onwards, consolidated further during the Song (960-1279 CE). These readings are likely to be older than readings found further to the west or in Guizhou, where Chinese state power was consolidated only at the beginning of the Ming (1368-1644).

Series A consists of four graphic variants of the same character, with 口 *kou*^{3} 'mouth' as a semantic component and various realisations of 留 *liu*^{2} 'to sojourn' on the right. Of these, (1) 嚂 represents 畱, a graphic variant of 留 *liu*^{2} found frequently in the written record throught China, with the upper element re-analysed as 亚 *ya*^{4}, a simplified variant of 亞. Close inspection will show that 亞 is not written in exactly the same way as the upper half of 畱, but the graphic shape is close enough to allow one to be used for the other in vernacular writing.[14] (1) in turn has been assimilated to graphic approximants in order to form (2), with 晋 *jin*^{4} as the right-side component, and (3), with 普 *pu*^{3} 'widespread' as the right-hand component. Graphic approximants are another important category of reading in Zhuang manuscripts. It would clearly be a mistake here to suppose that 晋 *jin*^{4} and 普 *pu*^{3} are functioning as phonophores in these characters; there is no phonetic resemblance. Rather, they are variant ways of writing 嚂, and the operative phonophoric element is 留 *liu*^{2}. 留 *liu*^{2} in turn is reconstructed as EMC luw or luw^{h}, and LMC liw (Pulleyblank 197); OMC has ljəu (OCM 13-47, p.179). PH (Li 158 item 1579) readings are mostly lou^{41} or lau^{21}. For both MC and PH readings, then, we can see that this series provides a close match in rhyme and tone class, but initial l- rather than n-.

The same is true of Series F, found in east-central Guangxi. Here the graphic transformations are more transparent. The series consists of 刘 *liu*^{2}, a simplified

[13] The rather minor exceptions are Xincheng, where a pronunciation naːu^{2} with long -a- is found, and Lạng Sơn, which has nô (nɔ^{3}).

[14] Writing one character by mistake for another is sometimes called 魚魯亥豕 *yu lu hai shi*, "[confusing] 'fish' for 'dull' and the 12th of the Earthly Branches for 'pig'". See Bai Yaotian and Taniguchi Fusao, *Zhuangzu tuguan zupu jicheng*, p. 157. It is a reasonably common phenomenon in handwritten Chinese.

variant of 劉 'battle axe; (a surname)', with a mouth (口) radical added as a semantic indicator in two different places: to the left (13), and on the top left corner (14). The EMC and LMC reconstructions of 劉 *liu*^{2} are liw˂ and liw (Pulleyblank p. 197). PH readings are lou^{41} (Mashan), lɔu^{41} (Tiandong), and lɐu^{21} (Nanning), and so on (Li p. 158·item 1578). This series is identical with Series A in basic phonology. Again, we have initial l- rather than n-.

Incidentally, Series D 嗯 (9), found in Donglan, is also likely to be a member of Series A. This is a vernacular character with a mouth radical on the left and the right-hand side composed of 西 *xi*^{1} 'west' on top of 心 *xin*^{1} 'heart' underneath. The right-hand component in turn is a vernacular rendering of 惡 *e*^{4} 'evil' (MC ʔak, also pronounced *wu*^{4} 'to detest', EMC ʔɔh),[15] a graph which is also found in Zhuang texts to represent *ok* (ʔo:k^{7}) 'to emerge' and similar-sounding words. Here, it is impossible to interpret this component as phonophoric, since *naeuz* and *ok* are so completely different in initial, final, and tone, so it must be something else. We can be fairly confident in identifying it as a graphic approximant for 畱, with the 'field' (田) component on the bottom replaced with the 'heart' radical, and then the new combination replaced with its vernacular variant.

Taken together, the evidence from the script provides corroboration for a reconstruction of *nl- (or nl/r-) for *naeuz*.

There are two other possibilities that must be addressed. First, might not the l-initial and n- initial series represent differing local pronunciations, either now or in the past? This is highly unlikely, since, as mentioned above, all NZh and SZh locations in the Zhuang dialect survey give the pronunciation nɐu^{2} with initial n-. There is not a single location which has initial l-.

The other possibility is that Zhuang scribes may not have discriminated between n- and l-. After all, there are many Chinese dialects that are well known for their tendency to confuse the two sounds, or even convert all n- initials to l-. Hunanese is only the most salient example. What evidence is there, then, that Zhuang scribes had the capacity to distinguish between the two sounds? Evidence from our survey points to a very curious situation: while pre-glottalised alveolar stop nd- (ʔd-) is frequently represented by Chinese characters whose reading pronunciation begins with l-, there is remarkably little confusion between plain l- and plain n-.[16] Our survey of sixty common words includes one example of plain n-, *neix* (nei^{4}) 'this': characters with initial l- are found representing *neix* in only 4 out of 45 locations.[17] For common words beginning with plain l-, *lai* 'many', *lawz* 'which?', and *lwg* 'child' – the result is even more categorical:there is not a single instance of an n- initial character being used to represent one of these morphemes.

The alternation in the script therefore must be evidence of historic sound change.

We can make three further points: one is that the change from nl- must have taken place in historical time, after the traditional Zhuang character script had taken

[15] Pulleyblank 86, 326.

[16] One of the reasons for this may be that pre-glottalised initial nd- (ʔd-) varies considerably in realisation, and often sounds like a glottalised initial l-. For discussion of this variation, see Holm, *Killing a Buffalo for the Ancestors*, Companion CD, 'Phonetic Features of the Donglan Bouyei Dialect'.

[17] Most of these locations are peripheral: northern Tianyang, Donglan, Zhenning, and Xichou.

form or after it had reached a certain degree of maturity, which is quite likely in the areas concerned to have been during the Tang. This kind of date fits in well with what is known about the diaspora of Tai peoples further to the west into present-day Yunnan, Indochina, and the Shan states, where initial l- is found in many of the daughter languages. Of course, sound change from nl- to l- or n- could have happened at different times in different places.

Secondly, we may note also that Zhuang scribes, facing the task of writing down a word like *nlau A2, would have been faced with a choice of representing the initial either with a character that had initial n-, or with one that had initial l-, since an 'n' nasal with a lateral or apical release was not found in Chinese. This bilateral either-or representation is in fact what we find in the script.

Thirdly, this example is a particularly clear demonstration that the Zhuang character script had independent points of origination, with different choices of graph being made by scribes in different regions. At least in Guangxi, Guizhou, eastern Yunnan, and northern Vietnam, *naeuz* is one of the morphemes which shows absolutely minimal dialect variation, being nau^2 everywhere except in Xincheng ($na:u^2$) and in Lạng Sơn ($nỏ = nɔ^3$). At least in this case, dialect variation can be ruled out as a factor leading to the development of different regional graphic systems.

These conclusions are in line with those reached by our survey of sixty common morphemes.

Abbreviations

CT	Central Tai
EMC	Early Middle Chinese
HCT	Li Fang Kuei, *Handbook of Comparative Tai*
HYDCD	*Hanyu da cidian*
LMC	Late Middle Chinese
MSC	Modern Standard Chinese
NT	Northern Tai
OMC	Middle Chinese, in Schuessler (2009)
PH	Pinghua
ZhYFYYJ	Zhang Junru et al., *Zhuangyu fangyan yanjiu*

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