

THREE NOTES ON LAUFER'S LAW*

Nathan W. Hill

School of Oriental and African Studies, University of London

Abstract: Facets of both Old Tibetan and Old Burmese phonology pose problems for the generalisation, known as Laufer's law, that *-wa-* in Written Burmese corresponds to *-o-* in Written Tibetan. Some Tibetan words retain the sequence *-wa*, appearing to contradict Laufer's law. Some Written Burmese words with *-wa-* originate from Old Burmese words written with *-o-*. To account for these anomalies and the Chinese cognates of the lexemes involved, Laufer's law must be understood as the product of four separate sound changes.

Keywords: Old Tibetan, Old Burmese, Old Chinese, historical phonology, Laufer's law

LAUFER'S LAW

Probably the best known correspondence between Tibetan and Burmese is Berthold Laufer's observation that *-wa-* in Written Burmese corresponds to *-o-* in Written Tibetan (Laufer 1898/1899: part III, 224; 1976: 120).¹ Guillaume Jacques refers to this observation as 'Laufer's law' (2009); I will also employ this terminology here.

The majority of researchers suggest Tibeto-Burman² **wa* > Tibetan *o* (e.g. Benedict 1972: 34, Coblin 1994: 117, Jacques 2009). In these three notes I explore possible objections to this explanation. The first note takes notice of words in Old Tibetan which contain the sequence *-wa* and thus appear to

* I would like to express my gratitude to the British Academy, which supported this research as part of the postdoctoral fellowship 'Pre-history of the Sino-Tibetan languages: the sound laws relating Old Burmese, Old Chinese, and Old Tibetan'.

¹ I transliterate the 23rd letter of the Tibetan alphabet here as 'ḥ'. I use 'ḥ' to mark a Burmese high tone and 'ʔ' to mark the Burmese creaky tone. Otherwise, I follow the Library of Congress system for Burmese and Tibetan. For Chinese I provide the character followed by Baxter's Middle Chinese (1992), an Old Chinese reconstruction compatible with the current version of Baxter and Sagart's system, and the character number in Karlgren (1964). Like in Baxter's own recent work, for Middle Chinese I use 'æ' and 'ea' in place of his original 'æ' and 'ε'. I do not however follow him in changing 'i' to '+'. The current version of Baxter and Sagart's Old Chinese system has not yet been published. In general it is similar to the system presented in Sagart (1999), with the changes that type 'b' syllables are unmarked and type 'a' syllables are marked (following Norman 1994) with pharyngealization. The current version also posits final *-r* for 諧聲 Xiesheng series which mix final *-n* and *-j*, and uvulars for 諧聲 Xiesheng series that mix velar and glottal initials (cf. Sagart and Baxter 2009).

² By 'Tibeto-Burman' is meant here the language which is the ancestor of Tibetan, Burmese, and Chinese. Some researchers refer to this language as 'Sino-Tibetan'.

contradict the sound change of Tibeto-Burman **wa* > Old Tibetan *o*, but attributes these cases to a distinct subsequent innovation. The second note however presents evidence from Old Burmese that the change Tibeto-Burman **wa* > Old Tibetan *o* must be rejected outright at least for some examples, and that instead such examples must be explained by the change Old Burmese *o* > Written Burmese *wa*. The third note considers the Burmese examples of Anlaut *wa-* and includes consideration of Chinese data. Together the conclusions of these three notes suggests that rather than a single change Tibeto-Burman **wa* > Tibetan *o*, Laufer's law must be separated into four distinct sound changes.

<i>Written Tibetan</i>	<i>Meaning</i>	<i>Written Burmese</i>	<i>Meaning</i>
go	space	awa?	space
gro-ma	potentilla anserina	wa?	tuber
ḡgro	go	swāḡ	go
sgor-mo	round	wanḡ	round
thoṅ	plough	thwan	plough
mtho	span	thwā	span
dom	bear	wam	bear
nor	wealth	nwāḡ	cow, cattle
sbom	fat, corpulent	phwam?	be fat, plump
ḡoṅ	come	waṅ	go, come
√lod ³	loose, relaxed	lwat	free, unrestrained
so	tooth	swāḡ	tooth

Table 1. The correspondence between Written Tibetan *-o-* and Written Burmese *-wa-*⁴

NOTE 1: -WA AND -U IN OLD TIBETAN

Suggesting that **wa* > *o* in the prehistory of Tibetan requires that one account for those examples of *-wa-* which remain in Old Tibetan. Noting that all Old Tibetan words with *-wa* are open syllables, and that the pair *ḡwa* 'fox' and *ḡodom* 'fox tail pendant' shows *-wa-* in an open syllable alternating with *-o-* in a closed syllable, I previously suggested that the change **wa* > *o* did not occur in open syllables (Hill 2006a: 88-90). The examples in Table 1 however make clear that Tibetan words with open syllables also participate in Laufer's law.⁵

³ For Tibetan verbs it is most convenient to cite the verbal root rather than any particular finite verbal form. For an overview of Tibetan verb morphology see Hill (2010: xv-xxi).

⁴ The first four examples are from Sagart (2006: 211), the next two from Laufer (1898/1899: part III, 224; 1976: 120); 'bear', 'fat', and 'free' are from Gong (2002[1980]: 26-28), 'come' from Gong (2002[1995]: 93), and 'wealth' and 'tooth' from Nishida (1972: 258).

⁵ I now regard the pair *ḡwa* 'fox' and *ḡodom* 'fox tail pendant' as unexplained, cf. fn. 8 below.

To explain the existence of Old Tibetan words with the sequence *-wa*, Guillaume Jacques (2009) suggests that a sound change **-uba > -wa* occurred in Tibetan subsequent to the change of Tibeto-Burman **-wa-* to Old Tibetan *-o-*. The phonological alternation between *-wa* and *-u* seen in words such as *rwa/ru* 'horn', where *rwa < *ru-ba*, he compares to alternation such as *lag-pa/lag* 'hand' (2009: 142). Jacques' hypothesis would be proven if one could demonstrate that the variation between *-wa* and *-u* shares the same distribution as the absence and presence of the nominal suffix *-pa*.

In both Classical Tibetan and the modern languages it is common for substantives to have long and short forms. The longer form is preferred as an independent lexeme (e.g. *yi-ge* 'letter, writing', *chen-po* 'big', *lag-pa* 'hand') and the shorter form is used in compound (e.g. *bod-yig* 'Tibetan written language', *blon-chen* 'prime minister', *lag-rtsal* 'handicraft'). The example which Jacques cites to demonstrate that *rwa* and *ru* are identical in meaning itself indicates that these two forms share the expected distribution.

- (1) *śa-ba rwa mañ-ste hgyen-tam g.yag-ru thuñe-ste hgyen-pa blta-ḥo*

Consider whether it is the stag which fights (better) with many antlers, or a yak with short horns. (PT 1287 line 502)⁶

The full form *śa-ba* 'stag' is used together with the full form *rwa*. Two other citations from the same text not noted by Jacques also confirm that *rwa* is the long form used as an independent noun.

- (2) *huñ-nas Lo-ñam-gyis glañ-po brgyaḥ-la / gser-gyi mduñ rtse nyis-brgyaḥ rwa⁷ btags-te /*

Then Lo-ñam attached the points of two hundred golden spears to one hundred oxen on their horns. (PT 1287 line 502)

- (3) *ḥbroñ che-po rñul-gyi rwa myi / yoñs-kyi kha-na brjod-na //*

It was said in the mouths of all that he was a man with the silver horns of a great wild yak. (PT 1287 line 502)

That *rwa* is the normal form of the word for 'horn' outside of the compound can be further confirmed with reference to PT 1042 (*rwa g.yas-pa / gser-gyi* 'of the right horn of gold' line 107, *rwa g.yon pa dñul-gyi* 'of the left horn of silver' line 108) and PT 1068 (*mdzo-moḥi rwa g.yas-paḥi thog-ma* 'on the right horn of a

⁶ Quotations from Old Tibetan texts can be confirmed in Imaeda et al. (2007). The abbreviations 'PT', 'IOL Tib J' and 'OR', followed by a number, refer to a manuscript's shelf number in the Bibliothèque nationale (PT) or British Museum (IOL Tib J and OR), see Imaeda et al. (2007: 2-3).

⁷ Imaeda et al. (2007: 201) incorrectly read this word *rba*, a meaningless syllable as far as I can determine (cf. Hill 2006b: 92 note 16).

mdzo' line 35, *rwa g.yon-paḥi thog-ma* 'on the left horn' line 41, *rwa gser-gi rwa* // 'a horn which is a horn of gold' line 59).

The only instance in which the word *ru* functions as a full noun is in verse. Perhaps the long form *rwa* would have scanned as more than a single syllable, and therefore *ru* was used instead of *rwa* to fit the syllable counting meter.

- (4) *mcho-gar nṣ ḥbroṅ-gi ru* || *rno-ste ni myi mkhas-pa*

As a rite—the horn of the wild yak || It is sharp—it is not skilled. (PT 1287 line 84)

Jacques' hypothesis that **uba > wa* can be further tested with the pair *grwa/gru* 'corner'. The long form *grwa* < **gru-ba* 'corner' occurs twice in the funerary ritual PT 1134 in contexts which are difficult to interpret. In both cases it appears to function as the head of a nominal phrase.

- (5) *kyo-na / rnams / gyaṅ skyibs-lug mar-ba-la / gda-de gtang / grwaḥ / dpuṅ mar-la / gta-de gtaṅ-/la / mtho rgal / myi phyugs / mñam-/du rgal (148) gyaṅ skhyibs / mar-/bas / droṅs-/śig /*

Also this one, taking aim below at the psychopomp sheep, release, taking aim at the middle corner, release, crossing the heights, crossing to the equanimity of men and cattle, lead the psychopomp sheep, from below! (PT 1134 line 147-191)

- (6) *lam tshol-ba skyiḥs-lug / grwa dbuṅ mar rbas brag ḥdraḥo*

The psychopomp sheep which finds the road is like a boulder from below the middle corner. (PT 1134 lines 190-191)

In contrast, the short form *gru* occurs nearly exclusively in the compound *gru-bḥi* 'square' attested throughout Old Tibetan literature. One example will suffice.

- (7) *yul Dags-kyi gru-bḥi-na / rje Dags rgyal-gyṣ Sprog-zin / blon-po Pha-gu-daṅ Pog-rol gñis //*

In the square which is the land of Dags, the lord is Sprog-zin, king of Dags, and the ministers are the two Pha-gu and Pog-rol. (PT 1286 lines 18-19)

These examples of the pairs *rwa/ru* and *grwa/gru* support Jacques' hypothesis. Instances of *-wa* in Old Tibetan can confidently be credited to the sound change **uba > wa*.⁸

Those examples of *-uba* still found in Old Tibetan, such as the verb *rku-ba* 'to steal', Jacques explains as having been created later by means of the application of the productive nominalizing suffix *-ba* (Jacques 2009: 143). This explanation is

⁸ However, the pair *ḥwa* 'fox' and *ḥodom* 'fox tail pendant' still requires clarification.

acceptable; however, taking note of Caplow's (2009) reconstruction of stress in Proto-Tibetan, a phonetic account is also possible. Caplow concludes that Proto-Tibetan disyllabic nouns were stressed on the second syllable whereas Proto-Tibetan disyllabic verbs were stressed on the first syllable. All Old Tibetan words with *-wa* are nouns (*rwa* 'horn', *grwa* 'corner', *hwa* 'fox', *rtswa* 'grass' cf. Hill 2006a: 83). Jacques mentions two nouns ending in *-uba*, viz. *yu-ba* 'handle, stalk' and *zu-ba* 'petition' (2009: 143S). He provides no attestation for the first and points out himself that the second is a deverbal noun (2009: 143). The word *yu-ba* 'handle, stalk' notwithstanding, if one accepts Caplow's conclusion Jacques' conjecture can be rephrased as **-ubá* > *-wa* and regarded as exceptionless. In summary, the correspondence between Written Burmese *-wa-* and Written Tibetan *-o-* and the alternation between *-wa* and *-u* in Old Tibetan can be explained by two sound changes: Tibeto-Burman **-wa-* > Old Tibetan *-o-* and pre-Tibetan **-ubá* > Old Tibetan *-wa*.

NOTE 2: -WA- AND -O- IN OLD BURMESE

The ready solution Tibeto-Burman **wa* > Old Tibetan *o* as an explanation for the correspondence noticed by Laufer faces an obstacle in Burmese. In fact, one must ultimately conclude the opposite development, viz. Old Burmese *Co-* > Written Burmese *Cwa-*, in order to explain the origin of examples of Inlaut *-wa-* in Written Burmese.

Many instances of *-wa-* in Written Burmese were written with the vowel *-o-* in Old Burmese. Yabu Shirō gives the following instances (2006: 13-14) found in the Myazedi inscription (1113 CE), the earliest extant document in Burmese.

<i>Myazedi</i>	<i>Written Burmese</i>	<i>Meaning</i>
za-thot (A 28)	za-thwat	(temple) spire
son (A 26)	swan	to pour (water)
lon (A 02)	lwan	go beyond
kyon (A 08)	kywan	slave

Table 2. The correspondence between Old Burmese *-o-* and Written Burmese *-wa-* in the Myazedi inscription (after Yabu 2006: 13-14)

Yabu suggests that “入りわたり (on glide) に強い唇音を伴った [wa] という音を表記したものと考えられる [one may consider that this (spelling) reflects a sound *wa* accompanied by a strong labial on-glide]” (2006: 14), and considers the orthographic alternation between *-o-* and *-wa-* to be random. Robert Jones also held that in such cases “< o > appears to represent an alternate spelling of medial < w >” (1976: 50). In all other matters of historical phonology when Old Burmese differs from Written Burmese it is Old Burmese which is understood to reflect the more archaic form. However, in this case Yabu and Jones posit that it is Written Burmese which reflects the historical pronunciation

and the Old Burmese spelling amounts to an idiosyncratic attempt to indicate the same pronunciation.

Yabu cites Nishida Tatsuo (1972) without comment in support of his analysis. Nishida discusses these very examples, but instead suggests they be explained with a sound change *o* > *wa* before dentals (1972: 257-258).⁹ Nishida further speculates that the change may have also occurred before bilabials, although he gives no examples (1972: 258). However, this suggestion is supported by Rudolf Yanson, who specifies that variation between *o* and *wa* “выступал также с конечными *p, t, m, n* [occurs with the finals *-p, -t, -m, and -n*” (1990: 69) and provides the examples *kywan~kyon* ‘slave’, *chwam~chom* ‘alms’, *lwat~lot* ‘be free’ and *phwap~phop* ‘clean’ (1990: 88). Among the examples which U Ba Shin (1962: 27) gives of *o* written for *-wa-* in the Lokatheikpan inscriptions (1155 CE) one finds the finals *-ñ, -n, -y, -t, and -m*. These examples appear to substantiate Dempsey’s view that Old Burmese *-o-* changed to Written Burmese *-wa-* in all closed syllables (2001: 222).¹⁰

<i>Lokatheikpan spelling</i>	<i>Later Old Burmese</i>	<i>Meaning</i>
kyon (line 150)	kywan	a slave
kloy (line 104)	klway	a buffalo
sa kroy (line 135)	sa krway	a rich man
khlot (line 154)	khlwat	to release
con (line 137)	cwan	a kite
coy (line 169)	cway	to conceive
choy (line 55)	chway	to hang
chom̄ (line 126)	chwam	a meal for a monk
ñot (line 192)	ñwat	to stoop
ñyon (line 118), ñon (line 217)	ñwan	to point out
toñ (line 67)	twañ	a pit
noy (line 92)	nway	a creeper
lon (line 197)	lwan	to go beyond
lon (line 246)	lwan	to be in excess
lot (line 71)	lwat	to be free
lhoḥ (line 156), lhot (line 78)	lhwat	to send, release

Table 3. The correspondence between Old Burmese *-o-* and Written Burmese *-wa-* in the Lokatheikpan inscriptions (after Ba Shin 1962: 27)

⁹ Nishida analyses Old Burmese < o > as phonetically [ʰu-].

¹⁰ An anonymous reviewer suggests that syllables ending in *-y* [j] should be considered open syllables. If so, these instances contradict Dempsey’s generalization.

In favour of the sound change $-oC > -waC$ Dempsey presents six arguments (2001: 222-225).¹¹ In fact, because the reconstructions of Proto-Burmish, Proto-Lolo-Burmese, and Proto-Tibeto-Burman all rely on Old Burmese, the evidence of Old Burmese presented in Tables 2 and 3 alone is sufficient to prove the case.

In open syllable words spelled with the sequence $-wa$ in Written Burmese, the orthography of the Myazedi inscription reflects the medial $-w-$. That is, Written Burmese $-waC$ (in closed syllables) developed from Old Burmese $-oC$, but Written Burmese $-wa$ (in open syllables) developed from Old Burmese $-wa$ or $-wo$. Yabu notes the following words.

<i>Myazedi spelling</i>	<i>Written Burmese</i>	<i>Meaning</i>
rwoh (A 08)	rwā	village
swā~swo~swoh ¹²	swā	go
swā	swā	tooth

Table 4. Medial $-w-$ in open syllables in the Myazedi inscription (after Yabu 2006: 13-14)

Without noting the phonological patterning, Yabu sees the presence of $-w-$ in these words as supporting his analysis of the closed syllables (2006: 14), namely, random orthographic variation. Nishida notices this contrast between open with medial $-w-$ and closed syllables without medial $-w-$; analysing Old Burmese $<woḥ >$ as phonetically $[wɔ̃h]$, he writes that

ビルマ文語形waaが、規則的に中古ビルマ語 $-wɔ̃h$ に遡り得るとすると、この形式のチベット文語との対応関係は一層明瞭にさる。

[The written Burmese form $-wā$ routinely goes back to a middle Old Burmese $-wɔ̃h$; forms in Written Tibetan corresponding to these forms makes this all the more clear.] (Nishida 1972: 258).

Nishida offers the following Tibetan comparisons (1972: 258).

¹¹ The arguments are: 1. In Old Burmese many of the relevant words are spelled with $-o-$ and not $-wa-$. 2. The historical phonology of Mon suggests that loanwords into Burmese written with $-wa-$ in Written Burmese were pronounced as $-o-$ in Mon. 3. The Burmese dialects point toward $*o$ in Proto-Burmese. 4. The Burmish languages point toward $*o$ in Proto-Burmish. 5. The Loloish languages point toward $*-o-$ in Proto-Loloish. 6. Tibeto-Burman languages outside the Lolo-Burmese family indicate $*o$ in Proto-Tibeto-Burman.

¹² This word is also spelled $swō$ in line 148 of the Lokatheikpan inscriptions (cf. Ba Shin 1962: 28).

<i>Written Tibetan</i>	<i>Meaning</i>	<i>Written Burmese</i>	<i>Meaning</i>
groñ	village	rwā	village
soñ	went	swāḥ	to go
so	tooth	swāḥ	tooth
mtho	span	thwā	span
nor	wealth	nwāḥ	ox
ḥgrol	become free	khwā	separate

Table 5. The correspondence between Old Tibetan *-o-* and Written Burmese *-wa-* in open syllables (after Nishida 1972: 258)

Following Nishida's analysis, one might try to explain the correspondence of Written Burmese *-wa-* to Written Tibetan *-o-* with two sound changes.

Old Burmese *-oC* > Written Burmese *-waC*

Old Burmese *-wo* > Written Burmese *-wa*

Nishida also posits open syllable Old Burmese *-o* without a medial *-w-* yielding both *-u* and *-o* in Written Burmese (1972: 256).

Dempsey interprets the same evidence as suggesting that Written Burmese *-wa-* derives from Old Burmese *-wa-* in open syllables but from *-o-* in closed syllables (2001: 225-226).

Old Burmese *-oC* > Written Burmese *-waC*

Old Burmese *-wa* > Written Burmese *-wa* (no change)

Dempsey appears not to indicate whether Old Burmese had *-o* in open syllables, or what, if it did exist, this segment led to in Written Burmese. If one accepts the Old Burmese spellings of the vowel *-o-* in closed syllables at face value it makes sense to also accept spellings with *-wo-* in open syllables as accurate representations of the pronunciation of the day. The interpretation of Nishida's proposal presented above consequently appears better justified than Dempsey's.

Evidence from the Lokatheikpan inscriptions showing *-w-* also in closed syllables invalidates either formulation (Ba Shin 1962: 28).

<i>Lokatheikpan spelling</i>	<i>Written Burmese</i>	<i>Meaning</i>
swoñ (line 112)	swañ	to let in
riy rwot (line 211)	re rwat	to revile

Table 6. Examples of *-wo-* in the Old Burmese Lokatheikpan inscriptions (after Ba Shin 1962: 28)

It is therefore not possible to see *-o-* and *-wo* as standing in complementary distribution, with *-o-* in closed syllable and *-wo* in open syllables. One possible solution is to analyse the vowel as phonemically /*o*/ in all cases and to see the tendency for *-wo* to occur in open syllables and *-o-* to occur in closed syllables as a sub-phonemic phenomenon.¹³ There was an unconditioned sound change of Old Burmese *o* to Written Burmese *wa* and the variation among *wo*, *o*, and *wa* shows that the sound change *o* > *wa* was already under way at the time when Burmese was committed to writing.

Suggesting an unconditioned change *o* > *wa* however requires that some account is made for instances of *o* in Written Burmese. Maung Wun's solution is to distinguish "that *o* in Old Burmese which has today become *wa*" (1975: 89) from "the Burmese proto-type *o*" (1975: 89). One could characterize this position somewhat mechanically as suggesting the presence of *o*₁ and *o*₂ in Old Burmese. The vowel *o*₂ occurs in open syllables (in only two grammatical affixes, cf. Yanson 1990: 68) and before velars. In the latter case it is generally cognate with *u* in Tibetan.

<i>Written Tibetan</i>	<i>Meaning</i>	<i>Written Burmese</i>	<i>Meaning</i>
kluñ	stream, river	khloñḥ	river
dguñ	sky	koñḥ	sky
dug	poison	tok	poison
drug	six	khrok	six

Table 7. The correspondence Old Tibetan *-u-* and Old Burmese *-o-* before velars

Because of the clear phonetic conditioning of *o*₂, it can be viewed as an innovation and credited to a sound change **u* > *o* before velars; this sound change must have occurred after *o*₁ > *wa*. In sum, Old Burmese underwent two sound changes: first *o*₁ > *wa* and then **u* > *o*₂ before velars.¹⁴

NOTE 3: COGNATES OF BURMESE ANLAUT *wa-* IN TIBETAN AND CHINESE

None of the examples of Old Burmese *-o-* or *-wo-* where Written Burmese has *-wa-*, discussed in Note 2, are instances of an Anlaut *w-*. The sequence *wa-* in Anlaut position has been stable throughout Burmese linguistic history. Therefore, those cases where Old Burmese *wa-* in Anlaut position corresponds to Old

¹³ Another alternative is to see *-wo* and *-o-* as contrasting phonemically from the beginning (i.e. reconstructible to Proto-Lolo-Burmese) and suggest *-oC* > *-waC* and *-wo* > *-wa* as separate sound changes. Particularly in light of the lack of evidence for *-o-* in Old Burmese open syllables unaccompanied by *-w-*, this tack appears to me unmotivated at the current state of our knowledge of Old Burmese philology and Tibeto-Burman historical phonology.

¹⁴ If the ordering of these sound changes is correct, i.e. *o* > *wa* and then **u* > *o* before velars, then the absence so far of philological data demonstrating the spelling of the affected words with *-u-* before a velar should be noted as a problem.

Tibetan *o-* must be explained in the reconstruction of Tibeto-Burman and not via the change of Old Burmese *o* > Written Burmese *wa*.

<i>Written Tibetan</i>	<i>Meaning</i>	<i>Written Burmese</i>	<i>Meaning</i>
go	space	awaʔ	space
gro-ma	<i>potentilla anserina</i>	waʔ	tuber
sgor-mo	round	wanḥ	round
dom	bear	wam	bear
ḥoñ/yoñ	come	wañ	go, come

Table 8. Examples of Written Burmese Anlaut *wa-* corresponding to Written Tibetan *-o-*

Laurent Sagart draws attention to the correspondence in these examples of Burmese *w-* to Tibetan *g-* (2006: 211). The Chinese cognates strongly suggest the reconstruction **G^wra-* for this correspondence in Tibeto-Burman.

<i>Chinese</i>	<i>Meaning</i>	<i>Tibetan</i>	<i>Meaning</i>	<i>Burmese</i>	<i>Meaning</i>
芋 hjuH < <i>*[G]^w(r)as</i> (0097o)	taro	gro-ma	tuber	waʔ	tuber
樺 hwaeH < <i>*[G]^wras</i> (0044-) ¹⁵	birch	gro-ga	birch bark	--	--
于 hju < <i>*G^w(r)a</i> (0097a)	go	ḥgro	go	--	--
羽 hjuX < <i>*[G]^w(r)aʔ</i> (0098a)	wing, feather	sgro	feather	--	--

Table 9. Chinese cognates to Written Burmese Anlaut *wa-* and Written Tibetan *-gro-*

A Tibeto-Burman reconstruction **G^wra-* trivially accounts for the Chinese data and can explain the Tibetan and Burmese reflexes with unproblematic sound changes. However, because Tibetan lacks *gr-* in three examples, another explanation for the source of Written Burmese Anlaut *wa-* is necessary.

<i>Chinese</i>	<i>Meaning</i>	<i>Tibetan</i>	<i>Meaning</i>	<i>Burmese</i>	<i>Meaning</i>
往 hjwangX < <i>*G^waŋʔ</i> (0739k)	go	ḥoñ/yoñ	come	wañ	go, come
熊 hjuwng < <i>*G^wəm</i> (0674a)	bear	dom	bear	wam	bear
--	--	go	space	awaʔ	space

Table 10. More problematic cognates to Written Burmese Anlaut *wa-*

¹⁵ Schuessler cites the 玉篇 Yupian and a source ‘JY’ as the earliest attestations of this word. The 玉篇 Yupian dates to circa 543 CE. Unfortunately ‘JY’ does not appear in Schuessler's list of abbreviations (2007: 283), but with this abbreviation he presumably refers to the 集韻 Jiyun, published in 1037 CE. An anonymous reviewer has pointed out that these relatively late attestations may militate against the Tibeto-Burman provenance of this word.

These examples are not easy to account for: a Chinese cognate is unavailable for the word 'space'; the three Tibetan words have divergent initials; the two Chinese cognates have differing main vowels.

Since in the case of $*G^wra$ it was possible to project the Old Chinese form backward onto Tibeto-Burman, this option merits consideration for the comparison of Chinese 往 $hjuwX < *G^waj?$ (0739k), Tibetan $hoñ/yoñ$, and Burmese wan . This approach yields the hypothesis that Old Chinese $*G^wa$ -regularly corresponds to yo - or ho - in Tibetan and wa - in Burmese. Axel Schuessler proposes a number of cognates between Tibetan and Chinese, which can be understood as supporting a correspondence between $*G^w$ - in Old Chinese and initial y - in Old Tibetan (2007: 130).

Chinese	Meaning	Tibetan	Meaning
耘 $hjun < *[G]^wə[n]$ (0460e)	to weed	yur-ma	act of weeding
有 $hjuwX < *[G]^wə?$ (0995o)	be, exist	yod	be, have
右 $hjuwH < *m-q^wə?(s)$ (0995i)	right	g.yas	right
友 $hjuwX < *[G]^wə?$ (0995e)	friend, companion	ya	associate, companion
尤 $hjuw < *[G]^wə$ (0996a)	guilt, fault, blame	yus	blame, charge
往 $hjuwX < *G^waj?$ (0739k)	go to	yoñ	come

Table 11. More problematic cognates to Written Burmese Anlaut wa -

All of the Old Chinese examples except the very example under discussion have the main vowel $ə$. In contrast, $-a-$ is the main vowel of the Chinese examples in Table 9. Although this distribution of Chinese vowels does not help in elucidating the origin of $yoñ/hoñ$ 'come', it may suggest a conditioned sound change of Tibeto-Burman $*G^w-$ to Tibetan $g-$ before $*a$, and a change of $*G^w-$ to Tibetan $y-$ before $*ə$. If this proposal is correct it gives reason to reconstruct the contrast between $*a$ and $*ə$ into the direct ancestor of Tibetan. This Tibetan evidence for a contrast between $*a$ and $*ə$ may show false the contention that all branches of Tibeto-Burman except Sinitic share a merger of $*a$ and $*ə$ (Handel 2008: 431). It merits noting however that the Tibetan cognates in Table 11 have three different main vowels, leaving room to wonder whether Schuessler is correct in his proposal of their cognacy. In particular, Gong Hwang-cherng has assembled cognates which suggest Tibetan go is the counterpart to Old Chinese $*G^wə$.

Chinese	Meaning	Tibetan	Meaning
胃 $hjuwH < *[G]^wə[t]s$ (0523a)	stomach	grod	stomach
友 $hjuwX < *[G]^wə?$ (0995e)	friend	grogs	friend
違 $hjuwH < *[G]^wə[j]$ (0571d)	go against	ḡgol	part, deviate

Table 12. The correspondence of Chinese $*G^wə$ and Tibetan go -
(after Gong 1980[2002: 24-25])

Unless some further conditioning factor awaits discovery, it is not possible for both the cognates proposed by Schuessler and for those proposed by Gong to be genuine. Returning the discussion to *hoñ/yoñ* ‘come’, if indeed $*G^w$ only became Tibetan *y-* before the vowel $*ə$, then *hoñ* and not *yoñ* must be the original Tibetan form of this word. The interplay within Old Tibetan of *h-* and *y-*, also seen in the two forms of the genitive, *-hi* and *-yi*, deserves further study.

The word for ‘bear’ gives an unexpected outcome in Tibetan. One would prefer to see $*yom$ or $*gom$. Schuessler (2007: 542) notes several other languages in which ‘bear’ exhibits a dental initial. For Rgyalrong *twõm* and Digaro *təham ~ təhum* Schuessler (2007: 542) cites Coblin (1986: 40) who in turn is citing Benedict (1972: 116 #461). Benedict’s sources are difficult to confirm. The Rgyalrong citation originally comes from Wolfenden (1936: 175). More recently Huang and Sun (2002) report the Rgyalrong word ‘bear’ as *tə²²wam³³*. Schuessler (2007: 542) also notices Mru *tom* (Löffler 1966: 124). In addition to the data Schuessler gathers, Evans (2006: 102 citing Evans 2001, e.g. p. 327) indicates that the *t-* is present in the word ‘bear’ in all the Qiangic languages. Finally, forms such as Bokar *šu-tum* lead Sun to reconstruct $*tum$ in Proto-Tani (1993: 173). It is tempting to reconstruct $*təG^wəm$ for Tibeto-Burman, but this would be premature in the absence of further examples of this correspondence and a good understanding of the historical phonology of all the affected languages.

If Tibeto-Burman $*G^wra-$ is the origin of Old Tibetan *gro-*, in order to explain the Tibeo-Burman origin of Tibetan *go* ‘space’ and Burmese *awa?* ‘space’, it is reasonable to speculate that $*G^wa$ leads to *go-* in Old Tibetan. However, in the absence of a Chinese cognate or further examples of the correspondence little progress can be made.

Although the full explanation of each example awaits further study, on the basis of Tables 9, 10, and 12 one is entitled to generalize that an Old Chinese labio-uvular followed by the vowels *a* or *ə* tends to correspond to an *o* in Old Tibetan and an Anlaut *wa-* in Old Burmese (cf. Hill 2011: 709-710). Whether, as Schuessler’s proposed cognates in Table 11 suggest, Tibeto-Burman $*G^wa >$ Tibetan *y-* before $*ə$ requires further study.

CONCLUSION

Rather than a single change Tibeto-Burman $*wa >$ Tibetan *o*, Laufer’s law must be separated into four distinct sound changes. (1) In the case of Written Burmese syllables of the structure *Cwa(C)*, the sequence *-wa-* in Written Burmese is due to an unconditioned change of early Old Burmese *o >* Written Burmese *wa*. (2) Remaining examples of *o* in Burmese are accounted for by a later change $*u > o$ before velars. (3) The sequence *wa* is also an innovation in Tibetan due to the change $*ubá > wa$. Since *-wa-* is innovative in both Burmese and Tibetan one may suggest that the Ursprache entirely lacked syllables of the type *Cwa(C)*.¹⁶ (4) In the case of Anlaut *wa-* in Burmese it is possible to suggest one sound change

¹⁶ The Ursprache quite likely did however have labio-velars and labio-uvulars, in which the labial element is an indivisible component of a unitary phoneme.

with reasonable security: Tibeto-Burman **G^wra-* > Old Chinese *G^wra-* (no change), Old Tibetan *gro-*, Old Burmese *wa-*. This proposal however does not account for three of the cognate sets 'come', 'bear', and 'space', falling under the rubric of 'Laufer's law'. Although it is difficult to know how to reconstruct these three examples, uvular initials are a promising domain for further investigation.¹⁷

SUMMARY OF PROPOSED SOUND CHANGES

Tibeto-Burman **G^wra-* > Old Tibetan *gro-*, Old Burmese *wa-*
 pre-Tibetan **-ubá* > Old Tibetan *-wa*
 Old Burmese *-o-* > Written Burmese *-wa-*
 Old Burmese **-uk* > Old Burmese **ok*

REFERENCES

- U Ba Shin. 1962. *The Lokahteikpan*. Rangoon: The Burma Historical Commission.
- Baxter, William H. 1992. *A Handbook of Old Chinese Phonology*. Berlin: Mouton de Gruyter.
- Benedict, Paul K. 1972. *Sino-Tibetan: A Conspectus*. Cambridge: Cambridge University Press.
- Caplow, Nancy. 2009. *The role of stress in Tibetan tonogenesis: A study in historical comparative acoustics*. Ph.D. Dissertation, University of California, Santa Barbara.
- Coblin, W. South. 1986. *A Sinologist's Handlist of Sino-Tibetan Lexical Comparisons*. (Monumenta Serica Monograph Series 18) Nettetal: Steyler Verlag.
- Coblin, W. South. 1994. An Old Tibetan variant for the word 'Fox'. *LTBA* 17.2: 117-118.
- Dempsey, Jakob. 2001. Remarks on the vowel system of old Burmese. *LTBA* 24.2: 205-34. Errata 26.1: 183.
- Evans, Jonathan P. 2001. *Introduction to Qiang Lexicon and Phonology: Synchrony and Diachrony*. ILCAA, Tokyo University of Foreign Studies.
- Evans, Jonathan P. 2006. Origins of vowel pharyngealization in Hongyan Qiang. *LTBA* 29.2: 91-123.
- Gong Hwang-cherng. 1980. A comparative study of the Chinese, Tibetan, and Burmese vowel systems. *Bulletin of the Institute of History and Philology*

¹⁷ The following three studies, building on the findings of this article, appeared while it was in production:

Hill, Nathan W. 2011. An Inventory of Tibetan Sound Laws. *Journal of the Royal Asiatic Society of Great Britain & Ireland* (Third Series), 21 (4). pp. 441-457.

Hill, Nathan W. 2012a. Evolution of the Burmese vowel system. *Transactions of the Philological Society*, 110 (1). pp. 64-79.

Hill, Nathan W. 2012b. The six vowel hypothesis of Old Chinese in comparative context. *Bulletin of Chinese Linguistics*, 6 (2). pp.1-69.

- 51.3: 455-490. (reprinted in:) 漢藏語研究論文集 *Hanzangyu yanjiulun wenji / Collected Papers on Sino-Tibetan Linguistics*. Taipei: 中央研究院語言學研究所籌備處 Zhongyang yanjiuyuan yuyanxue yanjiusuo choubeyu, 2002: 1-30.
- Gong Hwang-cherng (1995). The system of finals in Proto-Sino-Tibetan. In William S. Y. Wang (ed.). *The Ancestry of the Chinese Language*. (Journal of Chinese linguistics. Monograph series 8) Berkeley: Project on Linguistic Analysis, University of California: 41-92. (reprinted in:) 漢藏語研究論文集 *Hanzangyu yanjiulun wenji / Collected Papers on Sino-Tibetan Linguistics*. Taipei: 中央研究院語言學研究所籌備處 Zhong yang yan jiu yuan yuyanxue yanjiusuo choubeyu, 2002: 79-124.
- Handel, Zev. 2008. What is Sino-Tibetan? Snapshot of a field and a language family in flux. *Language and Linguistics Compass* 2.3: 422-441.
- Hill, Nathan W. 2006a. Tibetan *vwa* ‘fox’ and the sound change Tibeto-Burman **wa* - > Old Tibetan *o*. *LTBA* 29.2: 75-90.
- Hill, Nathan W. 2006b. The Old Tibetan Chronicle: Chapter 1. *Revue d’Etudes Tibétaines* 10: 89-101.
- Hill, Nathan W. 2010. *A Lexicon of Tibetan Verb Stems as Reported by the Grammatical Tradition*. Munich: Bayerische Akademie der Wissenschaften.
- Hill, Nathan W. 2011. Multiple origins of Tibetan *o*. *Language and Linguistics* 12.3: 707-721.
- Huang Liangrong 黃良榮 and Sun Hongkai 孫宏開. 2002. 漢嘉戎詞典 *Han Jiarong cidian*. [A Chinese Rgyalrong dictionary.] Beijing: 民族出版社 Minzu chubanshe.
- Imaeda Yoshiro et al. 2007. *Tibetan documents from Dunhuang kept at the Bibliothèque Nationale de France and the British Library*. Tokyo: Research Institute for Languages and Cultures of Asia and Africa, Tokyo University of Foreign Studies.
- Jacques, Guillaume. 2009. Tibetan *wa-zur* and Laufer’s law. *LTBA* 32.1: 141-145.
- Jones, Robert B. 1976. Prolegomena to a phonology of Old Burmese. In Cowan and O. W. Wolters, (eds.) *Southeast Asian History and Historiography: essays presented to D. G. E. Hall* C. D. Ithaca: Cornell University Press.
- Karlgren, Bernhard. 1964. *Grammata Serica Recensa*. Stockholm: Museum of Far Eastern Antiquities.
- Laufer, Berthold. 1898/1899. Ueber das *va zur*. Ein Beitrag zur Phonetik der tibetischen Sprache. *Wiener Zeitschrift für die Kunde des Morgenlandes* 12: 289-307; 13: 95-109, 199-226; reprinted in Hartmut Walravens, (ed.) *Kleinere Schriften von Berthold Laufer*. Wiesbaden: Franz Steiner Verlag, 1976: 61-122.
- Löffler, Lorenz G. (1966). The contribution of Mru to Sino-Tibetan linguistics. *Zeitschrift der Deutschen Morgenländischen Gesellschaft* 116: 119-159.
- Nishida Tatsuo 西田竜雄 (1972). 緬甸館譯語の研究 : ビルマ言語學序説 *Mendenkan yakugo no kenkyū : Biruma gengogaku josetsu / A Study of the Burmese-Chinese vocabulary, Mien-tien-kuan i-yu*. Kyoto: 松香堂 Shōkadō.

- Norman, Jerry. 1994. Pharyngealization in Early Chinese. *Journal of the American Oriental Society* 114.3: 397-408.
- Sagart, Laurent. 1999. *The roots of old Chinese*. Amsterdam: John Benjamins Pub. Co.
- Sagart, Laurent. 2006. *Handbook of Proto-Tibeto-Burman: System and philosophy of Sino-Tibeto-Burman reconstruction*. By James A. Matisoff. *Diachronica* 23:1: 206–223.
- Sagart, Laurent & William H. Baxter. 2009. Reconstructing Old Chinese uvulars in the Baxter-Sagart system (Version 0.99). *Cahiers de Linguistique - Asie Orientale* 38.2: 221-244.
- Schuessler, Axel. 2007. *ABC Etymological Dictionary of Old Chinese*. Honolulu: University of Hawai'i Press.
- Sun, Jackson T. S. 1993. *A historical-comparative account of the Tani (Mirish) Branch of Tibeto-Burman*. University of California at Berkeley Ph.D. Dissertation.
- Wolfenden, Stuart N. 1936. Notes on the Jyarung dialect of eastern Tibet. *T'oung Pao* (Second Series) 32.2-3: 167-204
- Wun, Maung. 1975. Development of the Burmese language in the medieval period. 大阪外国語大学学報 *Ōsaka gaikokugo daigaku gakuhō* 36: 63-119.
- Yabu Shirō 藪 司郎. 2006. 古ビルマ語資料におけるミヤゼディ碑文 < 1112年 > の古ビルマ語 / *Kobirumago shiryō ni okeru myazedi hibun 1112 nen no kobirumago / Old Burmese (OB) of Myazedi inscription in OB materials*. Osaka: Osaka University of Foreign Studies.
- Yanson, Rudolf. 1990. *Вопросы фонологии древнебирманского языка. Voprosy fonologii drevnebirmanskogo jazyka*. Moscow: Nauk.

Author's address:

Nathan W. Hill
 School of Oriental and African Studies
 University of London
 Thornhaugh Street, Russell Square
 London WC1H 0XG

Email: nh36@soas.ac.uk

