Labialized onsets in Rma

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In the study of Rma phonology (Eastern Tibeto-Burman < Sino-Tibetan/Trans-Himalayan), there have been differing perspectives regarding labialized onsets both in synchrony and diachrony. Synchronically, these forms have been treated as *CuV* or as *CwV* sequences (Sun 2003). In terms of diachrony, Chang (1967) reconstructs the following set of bilabial-stop initial clusters: **Bt*, **Bd*, **Bts*, **Bts*^{h}, **Bdz*, **Bs*. Evans (2001; 2006a) reconstructs none of these and proposes that labialized onsets are secondary developments in the dialects that have them.

This paper explores the issue of labialized onsets through the lens of a previously undocumented variety of Rma. It offers a new perspective on the synchronic analysis for these segments as phonologically *C*^{w} and contributes to an older discussion about the diachrony of these sounds. The paper finds support for Evans' (2001) theory that these sounds are secondary developments from **-w-* elements while also finding sub-group external evidence that some come from **p-* pre-initials.

Keywords: Qiang, Rma, labialization, phonology, Sino-Tibetan/Trans-Himalayan, historical linguistics

1. Introduction

"Labialization" is a broad term that can be used to refer to different phonetic situations. These include rounded onsets, labialized onsets, onsets with doubly articulated labial stops, and onset + glide sequences. It is useful to distinguish different types of labialization. Table 1 illustrates different types of structures across languages which are, in principle, distinct.[1]

Of course, no language would phonemically differentiate all these possibilities. The appropriate phonological analysis of phonetic elements involving lip rounding or closure is not always obvious (Ohala & Lorentz 1977). This is true

1. The Chrau examples are from Butler (2014: 45). The Zbu example is from Gong (2018).

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Table 1. Different structures

Type	Onset	Example
Rounded onset	*C̬V*	English [*s̬uːn*] 'soon'
Labialized onset (back)	*C^{w}V*	English [*s^{w}uːn*] 'swoon'
Labialized onset (front)	C^{ɥ}V	Luoduo Rma [*ɛ^{ɥ}aq*] 'shadow'
Complex onset with bilabial initial	*pCV*	Taoba Pumi [*bzɛ̃^{35}*] 'root'
Onset with tightly attached bilabial pre-initial	*p.CV*	Chrau [*p.laj*] 'fruit'
Onset with loosely attached bilabial pre-initial	*pV.CV*	Chrau [*pə.laj*] 'unfortunately'
Simplex, doubly articulated onset	*p͡C*	Abkhaz [*d͡bəkʼ*] 'a slave'
Initial + bilabial glide	*CwV*	Zbu Rgyalrong [*tə-ɕwéʔ*] 'teeth'
Doubly articulated and back labialized	*p͡C^{w}V*	Luoduo Rma [*p͡ts^{w}ə*] 'water'
Doubly articulated and front labialized	*p͡C^{ɥ}V*	Luoduo Rma [*p͡tɛ^{ɥ}i*] 'rooster'
Onset + diphthong	*CuV*	Scots Gaelic [*fuər*] *fuar* 'cold'

of the labialized consonants in Rma[2] (Burmo-Qiangic < Sino-Tibetan). In Rma, labialized onsets have hitherto been analyzed synchronically as variously as either *CuV* or *CwV* sequences (e.g., Sun & Evans 2013).

In historical studies on Rma, there have been two opposing sets of proposals regarding the diachrony of labialized onsets. Chang (1967) reconstructs the following set of complex onsets: **Bt*, **Bd*, **Bts*, **Btsh*, **Bdz*, **Bs*. Evans (2001; 2006a) reconstructs none of these and proposes that labialization originates in the rhyme. This paper explores the possibility of both of these hypotheses in light of fresh field data from a previously undescribed variety of Rma spoken in Luoduo Township, *Hēishuǐ* County. It is argued that both of these diachronic viewpoints are correct to some degree.

1.1 Empirical materials

The data for this study come from published documentation work on Rma as well as data from the author's study of Shiguzi variety beginning in 2016. The "Shiguzi" (石古子) *ʃkuz* variety of Rma/Qiang (羌) is spoken in Shiguzi (石古子) Village,

2. This language-complex is called Qiang in Chinese. See Tshering.'bum (Maotao Wen 2014) for discussion.

Luoduo (洛多鄉) Township, Heishui County (黑水), Rngaba (阿壩) Prefecture, Sichuan (四川) Province, People's Republic of China.[3]

1.2 Outline

This paper is organized as follows. §2 discusses labialized onsets in the Shiguzi variety from the author's data. This includes a phonological sketch of this previously undocumented variety. §3 discusses the diachrony of labialized consonants in Rma. §4 brings a conclusion to the paper.

2. Labialized initials in Shiguzi Rma

In order to discuss the phonological analysis of labialized onsets, we give a general phonological sketch which includes onsets, vowels, and syllable structure. We then turn to the issue of how the labialized onsets should be represented in the phonology.

2.1 Consonants

Like many Northern Rma varieties, such as Mawo (Sun 1981; Sun & Evans 2013), Ronghong (LaPolla & Huang 2003), Hongyan (Sun & Evans 2015), and Musu (Liu 1985), Shiguzi has a relatively large consonant inventory. Table 2 gives a preliminary inventory of Shiguzi consonant phonemes.

Shiguzi has a fairly typical consonant inventory for a northern variety. Stops, excepting uvulars, present a three-way VOT distinction. There are three sets of affricates, and fricatives at alveolar, postalveolar, palatal, velar, uvular, and glottal places of articulation.

3. Data are cited in the original IPA with the following exception. The non-IPA symbol <ɳ> is replaced by /ɲ/. Written Tibetan is represented in Wylie's (1959) system. For Tangut forms, I give the Tangut character, the four-digit identifier from Fanwen Li's (1997) dictionary, a transliteration following Huang-Cherng Gong's system (i.e., Gong 2003) with recent modifications following the work of Xun Gong (2020; 2022). Middle Chinese forms are from Baxter (1992), Old Chinese reconstructions follow Baxter & Sagart (2014).

Table 2. Shiguzi onsets

Type	Bilabial	Alveolar	Post-Alveolar	Palatal	Velar	Uvular	Glottal
plosive	*p*	*t*			*k*	*q*	
plosive (aspirated)	*p*^{h}	*t*^{h}			*k*^{h}	*q*^{h}	
plosive (voiced)	*b*	*d*			*g*		
affricate (voiceless)		*ts*	*tʃ*	*tɕ*			
affricate (aspirated)		*ts*^{h}	*tʃ*^{h}	*tɕ*^{h}			
affricate (voiced)		*dz*	*dʒ*	*dʑ*			
fricative (voiceless)		*s*	*ʃ*	*ɕ*	*x*	*χ*	*h*
fricative (voiced)		*z*	*ʒ*	*ʑ*		*ʁ*	*ɦ*
nasal	*m*	*n*		*ɲ*	*ŋ*		
lateral (voiceless)		*ɬ*					
lateral (voiced)		*l*					
approximate	*w*	*ɹ*		*j*			

2.2 Vowels

There are five primary vowels: *æ, a, i, u*, and schwa. A minimal set is given in Table 3.

Table 3. Shiguzi vowels

Vowel	Form	Gloss
æ	*bæ*	'to be short'
a	*ba*	'a place to rest'
i	*bi*	'urine'
u	*bu*	'board'
ə	*bə*	'bee'

In addition, there are two mid vowels: [*o*] and [*e*]. The back mid vowel [*o*] can be an allophone of the /*u*/ adjacent to uvular consonants. An example of this is given in (1).

(1) /*ju*/ 'horse' + /*ʁdʒə*/ 'bell' = [*joʁdʒ*] 'horse-bells'.

In native forms, the front mid vowel [*e*] appears to occur only after palatalized or palatal onsets. For example *pʲe* 'pig', *ləx.ɲe* 'stinging nettles'. For some words, a pronunciation as [*Cʲe*] or [*Cʲæ*] are both possible. For example *pu.pʲe* or *pu.pʲæ* 'trowel'.[4] Both [*o*] and [*e*] occur in borrowings. Thus, *me.loŋ* < Tibetan *me.long* 'a type of amulet';[5] and *lemi* < Tibetan *bla.ma* 'Lama'. Also, *tsʰo* 'trough' < Chinese 槽 *cáo* ibid.

Vowels are sub-phonemically rhoticized following rhotics. Thus /*bɹa*/ 'to be big' is phonetically [*bɹaˠ*] and /*siqʰɹa*/ 'saw (n.)' is phonetically [*siqʰɹaˠ*]. This is a tendency which has parallels in Tangut. Vowel nasalization is rare enough to not mention for the purposes of this paper.

2.3 Syllable structure

Like many of the northern varieties of Rma (Liu 1998; LaPolla & Huang 2003; Sun & Evans 2015), Shiguzi has relatively large syllable canon with a robust set of complex onsets and complex codas.

2.3.1 Complex onsets

Many of the Shiguzi complex onsets are archaic. An example of an archaic cluster can be found in *kʰsə* 'three', cf. Tibetan *gsum* 'three'. Table 4 gives a summary of the types of complex onsets observed.

Table 4. Syllable canon in Shiguzi

Onset type	Form	Gloss
tap-stop	*rbə*	'yak'
tap-stop	*rgi*	'to be sick'
fricative-stop	*ʂpi*	'dhole'
fricative-stop	*zdu*	'deer'
fricative-fricative	*χsa*	'bharal'
fricative-nasal	*ɣnə*	'two'
fricative-lateral	*xɬje*	'braid (n.)'
fricative-affricate	*ɣdzi*	'otter'
fricative-approximate	*ʁɹo*	'female cat'

4. The issue of whether or not *e* vs. *æ*, *i* vs. *e*, and *u* vs. *o* should be analyzed as paired set of plain vs. uvularized vowels (cf. Evans 2006a, 2006b; Evans et al. 2016) is yet unclear and not relevant for the purposes of this paper.

5. This word generally means 'mirror' in Tibetan. Shiguzi has a different word for 'mirror' and uses *me.loŋ* to refer specifically to an amulet which is one of the eight *sman.bla* ritual objects.

Table 4. *(continued)*

Onset type	Form	Gloss
stop-fricative	*kʰsə*	'deity'
stop-fricative	*gzə*	'government official'
stop-fricative	*qʰsu*	'to jump'
stop-approximate	*bɹə*	'rope'
stop-approximate	*kʰɹə*	'to chop'
stop-approximate	*qʰɹə*	'rice'

2.3.2 Stop-fricative clusters

A distributional characteristic which distinguishes plosives from affricates is that while many varieties have stop-fricative clusters, there are no affricate-fricative clusters. Thus, there are no sequences such as **dzʁ-* or **tsχ-*. There are no stop-fricative clusters with labial or dental onsets. That is, there are no CCV sequences **ps-*, **bz-*, **pɕ-*, **bʑ-*.

In Shiguzi, fricative-stop consonant clusters must agree in voicing. Thus, *sta* 'to be wide' vs. *zda* 'cloud', but never **zt* or **sd* sequences. The same obtains for stop-fricative clusters.

There is no contrast between unaspirated and aspirated stops when the stop occurs as the first part of a cluster. Thus, there is no difference between *kʰsə* 'deity' and **ksə*. I write these forms as aspirated because this is how other scholars have represented these forms. For example, Mawo Rma *kʰsi* 'deity' (Sun 1981).

2.3.3 Syllable canon

The syllable canon proposed here is (C)CV(C)(C). Examples are given in Table 5.

Table 5. Syllable canon in Shiguzi

Syllable type	Form	Gloss
CV	*kə*	'to go'
CVC	*pʰəq*	'tree'
CVCC	*wəst*	'egg'
CCV	*skə*	'garlic'
CCVC	*stəq*	'nose'
CCVCC	*rbəst*	'to herd yaks' *rbə* 'yak' + *stə* 'graze'

2.3.4 Codas

All the Proto-Trans-Himalayan consonant codas were lost in Rma (Benedict 1983; Liu 1984; LaPolla & Huang 2003). Closed syllables in Shiguzi Rma originate from (1) coalesced disyllabic forms, (2) loanwords from Tibetan and Chinese, or (3) ideophones.

Vowel apocope, especially schwa-deletion in unstressed position, has led to the development of coda consonants, and even coda clusters. Coalesced syllables can be divided into several sub-types. First of all, there are those which transparently derive from coalescence, such as the following.

(2) *naʁdʒ* 'Venus' < *na* 'good' + *ʁdʒə* 'star'

(3) *ʃʷəχʃ* 'plaque' < *ʃʷə* 'teeth' + *χʃə* 'excrement'

(4) *hargʷ* 'nineteen' < *ha* 'ten' + *rgʷə* 'nine'

Secondly, there are those which can be demonstrated to originate from disyllabic forms through cross-dialectal comparison. Consider the comparisons with the Taoping variety in (5–6).

(5) Shiguzi *kʰɕaq* 'leaf' vs. Taoping *tɕʰa*^{55} *qə*^{33} 'leaf'.

(6) Shiguzi *stiq* 'ear of grain' vs. Taoping *χti*^{55} *qə*^{33} 'ear of grain'.

Lastly, there are forms with codas which are not transparent and for which we lack data in other varieties, but which probably originate from some sort of compounding. Table 6 gives examples of such forms.

Table 6. Unclear etyma

Coda	Form	Gloss
-p	*qsəp*	'mountain'
-t	*ʁlət*	'stone that falls in a landslide'
-k	*pilak*	'samsara'
-q	*noq*	'food offerings'
-ts	*gəts*	'nighttime'
-l	*pæl*	'lingual frenulum'
-s	*kʰæs*	'gate'
-ʃ	*rmuʃ*	'a kind of deity'
-z	*rgʲæz*	'tent'
-n	*mən tʃala*	'praying mantis'
-m	*tsʰæm*	'mask'

Loanwords from Chinese such as *pæsin* 'common people' < Chinese 百姓 *bǎixìng* ibid., can have nasal codas. Loanwords from Tibetan present both simplex and complex codas. For example, *skʲit.pu* 'to be pleasant' < Tibetan *skyid.po* 'to be happy' and *pʰjaχs* 'pilgrimage' < Tibetan *phyags* idem.

Finally, there are closed syllables in sound symbolic forms. Examples are given in Table 7.

Table 7. Sound symbolic forms

Coda	Form	Gloss
-p	*χap*	'a knife stabbing'
-t	*pʰat*	'a vulture's wings flapping'
-k	*pʰək.pʰək*	'a heart pounding'
-q	*poq*	'a heavy thing falling'
-ŋ	*bəŋ.bəŋ*	'bees swarming'
-r	*xər.xər*	'wheels spinning'

2.3.5 Labialized onsets: Synchrony

Shiguzi has labialized onsets. For example, *rgi* 'to be sick' vs. *rgʷi* 'to wear'. This section discusses the phonological analysis of these onsets. Consider the form for 'dog'. This form has a voiceless aspirated velar plosive with comitant lip rounding, followed by schwa. This form may be plausibly represented in one of three ways.

1. *kʰuə* (CVV)
2. *kʰwə* (CCV)
3. *kʰʷə* (CV)

Each analysis has different implications for the phonological system as a whole. In this section I shall explore each of these three possible analyses and ultimately argue that the third analysis is most appropriate for the Shiguzi variety.

2.3.6 CuV

The first approach, the one involving a complex vowel nucleus [*uə*], has been undertaken for different varieties. See Table 8 for examples.

Table 8. Forms for 'dog'

Source	Variety	Form
Evans (2001)	*Miánchí*	*kʰuè*
Sun et al. (1991)	*Táopíng*	*kʰuə*^{55}
LaPolla & Huang (2003)	*Rónghóng*	*kʰuə*
Huang & Zhou (2006)	*Qūgǔ*	*kʰuə*
Sun et al. (1991)	*Máwō*	*kʰuə*

The main argument for this approach has been explicated by LaPolla & Huang (2003), who analyze these sequences as possessing complex nuclei as a general principle that consonant clusters must agree in voicing. LaPolla & Huang (2003: 22–23) state:

> There also does not seem to be a contrast between /*u*/ and /*wu*/ or /*i*/ and /*ji*/, but I am using the symbols /*j*/ and /*w*/ rather than /*i*/ and /*u*/ respectively for the relevant sounds when they appear in syllable-initial position to allow for easy syllable recognition in words such as [*tiwike*] 'a tall one'. As these sounds do not follow the voicing harmony pattern of consonant clusters (that is, they can be preceded by a voiceless consonant, as in the second syllable of /*zaχua*/ 'inside'), they are clearly within the vocalic segment of the syllable and not part of the initial, and so I have not used /*j*/ and /*w*/ when they are not the intial [sic] sound in the syllable (to avoid them being confused with consonant clusters).

Contra the approach in LaPolla & Huang (2003), Sun (2003) has argued that the inclusion of both /*w*/ and /*uV*/ sequences is uneconomic and that these sequences are better analysed as *Cw* sequences rather than complex nuclei. Sun (2003: 229) writes: "Positing both the glides and the vowel clusters as underlying entities is a notational extravagance that linguists upholding Occam's razor should avoid." Sun gives a reinterpretation of Mawo Rma 'dog' as phonemically *kʰwə*.

Evans (2006a: 100–101), following Sun (2003), revises his analysis of other varieties and states the following.

> In previous publications, diphthongs are transcribed as a sequence of vowels (Longxi /*qʰuà* / 'ditch'). However, for Hongyan, I transcribe such sequences as glide-vowel (/*χwaˠ*/ 'ditch').[6] The principal reasoning behind this change is acoustic: The nucleus does not sound like a sequence of two equally timed vowels, but a transitional glide followed by a monophthong.

6. I have changed the representation of the uvularized vowel as ˠ here from a pharyngealized vowel in Evans (2006a; 2006b).

I agree with the arguments by Sun and Evans against the treatment of such a form as 'dog' as having a complex nucleus; i.e., acoustic reasons and also that having glides and complex vocalisms is infelicitous. However, I do not agree with Sun and Evans in their arguments for positing medial glides. Issues with analysis invoking medial glides will be explored in the following section.

2.3.7 CwV

This section explores the analysis of labialized onsets as sequences of onset plus a medial glide. Evans (2006a: 101) has invoked vowel harmony in Ronghong Rma as support for his re-analysis.

Writing about the Ronghong variety, Evans & Huang (2007: 159–160) state:

> The last form in (5) /*a-ˈkwa*/ 'uncle' demonstrates the advantage of transcribing the medial labiovelar sound as /*w*/, rather than as /*u*/. Here the kinship prefix, which accepts all of the feature values of the root vowel, becomes /*a*/, rather than /*u*/, showing that the medial does not exert a harmonizing influence. This transcriptional advantage can be further seen in harmonized forms of 'one':
>
> (6) Advantages of medial /*w*/ consonant analysis
> – *a-ˈkwa* 'one place' **o-kua*
> – *e-ˈdzwe* 'one section' **o-dzue*

The evidence from vowel harmony is not as straightforward as it may seem. First, Evans and & Huang (2007) do not explain why the prefix has to harmonize with the first vowel, but not the second. Intuitively, vowel harmony usually occurs with the more salient vowel, which should be *-a* in the case of 'uncle'.[7] Second, and more importantly, vowel harmony in Ronghong is better analyzed not as a synchronic phonological process, but as a set of vocalic alternations which are the result of regular vowel changes (Sims 2023). In short, "vowel harmony" is an epiphenomenon in Ronghong Rma and should not be used as an argument for or against the analysis of medial elements.

One of the extant issues with a treatment of the labialized onsets as *CgV* sequences, is that it ignores the principle of agreement in voicing for consonant clusters pointed out by LaPolla & Huang (2003). In Shiguzi, consonant clusters must agree in voicing. Consider again the various possible analyses for the form 'dog'.

1. *kʰuə* (CVV)
2. *kʰwə* (CCV)
3. *kʰʷə* (CV)

7. Thanks to an anonymous review for pointing this out.

The second analysis would violate the otherwise exceptionless rule for voicing agreement. The third analysis is preferable even though it means introducing more phonemes to the inventory: /k^h/ vs. /k^{hw}/. A potential solution for the issue of voicing agreement, proposed by an anonymous reviewer, would be to stipulate that consonants in the onset must agree in voicing and that medials are separate. One could state that the "medial" /*w*/ in 'dog' is not part of the onset, and thus, onset + medial sequences need not agree in voicing.

In order to avoid a circular definition of medial for Rma, medials should be advocated on independent phonological grounds. Phonological processes such as reduplication can potentially provide a window onto the structure of complex onsets. The use of reduplication as a test for elucidating syllable structure is well known in Rgyalrongic linguistics. In Japhug (< Eastern Rgyalrongic), medials can be defined phonologically as elements which are omitted in partial reduplication (Jacques & Chen 2004; Jacques 2004, 2007, 2021a: 87–100). In Wobzi Khroskyabs (< Western Rgyalrongic), reduplication sheds light on the structure of complex onsets, as the onset can be defined relative to the medial elements as the element which is retained in partial reduplication (Lai 2017). For example Wobzi *zgrâ* 'star' is reduplicated as *zgrâ-(z)g(r)a*. In the reduplicated second syllable, only the onset consonant, *g*, is obligatory and either the "pre-initial" *z* or medial *r* can be omitted, or both (Lai 2017: 23). Gates (2021) follows Lai's methodology to establish a phonological category of medial for Mazur Stau (< Western Rgyalrongic).

Nonetheless, such a test of syllable structure is not relevant in all Rgyalrongic languages. Writing about partial reduplication in Rgyalrongic, Gong (2018: 62) reports: "I have not found in Zbu Rgyalrong a comparable phenomenon which allows for analyzing the internal structure of ambiguous consonant groups."[8]

In Shiguzi Rma, as in other varieties of Rma (LaPolla & Huang 2003: 19, 123), reduplication can mark reciprocal action. Reduplication in Shiguzi is partial in that the vowel of the reduplicated syllable is centralized relative to the base. Nonetheless, the onset does not exhibit alternations. Consider the reduplicated forms in (9).

Note that there is no difference for the onset between the base and reduplicated syllable. Thus, *rg^{w}ə-rg^{w}æ* 'to compare' but not **(r)g(^{w})ə-rg^{w}æ*. There is a change of the nucleus of the reduplicated syllable to schwa, but the labialized element is not changed. In brief, partial reduplication does not provide evidence for a medial *-w-*, as it does in some Rgyalrongic languages. In Luoduo Rma, the consonant onset and labialization pattern together against the rhyme.

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8. "Je n'ai pas trouvé en Zbu de Rgyaltsu un phénomène comparable qui permette d'analyser la structure interne des groupes de consonnes ambigus."

Table 9. Reduplicated forms in Shiguzi

Syllable	Form	Gloss
CV.CV	*lə-lə*	'to exchange (with one another)'
CV.CV	*nə-nə*	'to sleep (with one another)'
CV.CV	*kʰʷə-kʰʷə*	'to get angry (with one another)'
CV.CV	*ʁʷə-ʁʷe*	'to wrestle (with one another)'
CV.CV	*sə-sa*	'to mix (with one another)'
CV.CV	*qʷə-qʷa*	'to fight (with one another)'
CCV.CCV	*qʰɹə-qʰɹə*	'to get divorced (from one another)'
CCV.CCV	*rgʷə-rgʷæ*	'to compare (with one another)'

There are some additional problems with an analysis of the labialized onsets of Shiguzi as medials. There are difficulties with positing a medial *-w-* which are distributional in nature. Consider Table 10.

The distribution in Table 10 weighs against considering */j, w, ɹ/* together as a natural class of medials. The approximate *ɹ* patterns against *j* and *w* with respect to the contrastiveness of aspiration of the preceding stop. Thus, while there is a contrast between */qʰ/* and */qʰʷ/*, as in */qʰa/* 'to be bitter' vs. *qʰʷa* 'to be slanted', there is no contrast between *qɹ-* and *qʰɹ-*. The approximate *ɹ* also patterns against *j* and *w* in that it cannot occur after alveolar stops.

Note that there are labialized onsets which are followed by *ɹ*. Consider the form for 'body dirt'. This form has a labialized aspirated velar plosive followed by an alveolar retroflex glide.

1. *kʰwɹæ* (CCCV)
2. *kʰʷɹæ* (CCV)

The co-occurrence of labialization and *ɹ* in this form is an argument against treating both as occupying a medial slot in the syllable. One could argue that there are two medial slots, and that 'body dirt' has two medials, but this would be an *ad-hoc* definition of 'medial'.

The analysis of 'body dirt' as *kʰʷɹæ* (CCV) is more felicitous. While doing so does expand the consonant inventory to include */kʰʷ/*, it avoids expanding the syllable canon to include tri-consonantal onsets. This is preferable for reasons of symmetry, as it posits a symmetrical CCVCC syllable canon. While *-ʷ-* and *ɹ* may co-occur, as in *kʰʷɹæ*, there are no forms which are labialized and palatalized. There are also no palatalized onsets followed by *ɹ*.

Table 10. Distributions assuming the glide approach

	j	w	*ɹ*	*w+ɹ*
p	✓			
pʰ	✓		✓	
b	✓		✓	
t	✓	✓		
tʰ	✓	✓		
d	✓	✓		
ts	✓	✓		
tsʰ	✓	✓		
dz	✓	✓		
tʃ		✓		
tʃʰ		✓		
dʒ		✓		
tɕ		✓		
tɕʰ		✓		
dʑ		✓		
k	✓	✓		
kʰ	✓	✓	✓	✓
g	✓	✓	✓	✓
q		✓		
qʰ		✓	✓	✓

Third, note the lack of labial onset + *w* sequences. Under an analysis of labialized onsets as glides (Sun 2003; Evans & Huang 2007; Sun & Evans 2013), there would be no reason for the lack of attested forms such as **pwi*, **pʰwi*, **bwi*, etc. However, an analysis which invokes labialization explains the lack of such sequences by the simple fact that labialization is a property of the onset. Because bilabial stop onsets are already bilabial, they cannot take secondary labialization.

There are two remaining issues which are worth pointing out here. First, the lack of alveolar stop + *ɹ* could be taken as evidence that the post-alveolar affricates, *tʃ, tʃʰ, dʒ*, are phonemically *tɹ, tʰɹ, dɹ*. However, positing underlying sequences *tɹ, tʰɹ, dɹ* would violate the more general principle that aspiration is not contrastive for stops followed by *ɹ*.

The second issue is the distribution amongst the three sets of affricates. It is possible to pursue an analysis of the alveolo-palatal affricates as palatalized post-alveolars. However, this would mean that the labialized alveolo-palatal onsets would have two secondary articulations. That is, /*tɕʷi*/ 'rooster' would be represented as /*tʃʲʷi*/. This would seem to violate a more widespread principle in the language that onsets may only have one place of secondary articulation. The issue of palatalized onsets is a related but separate issue which merits a different study.

There is, at present, no independent evidence for a medial slot. Having presented arguments against an analysis of Shiguzi labialization as a medial *-w-*, we now turn to the analysis which invokes unitary labialized onsets.

2.3.8 CʷV

This section argues that the labialized onsets of Rma should be analyzed as *CʷV*. There is a subphonemic distinction between back-labialized [*Cʷ*] and front-labialized [*Cᶣ*]. The [*-ʷ-*] element has an allophone as a labio-palatal approximate [*-ᶣ-*] when it occurs after palatal sounds. Thus, /*ɕʷaq*/ 'shadow' is phonetically [*ɕᶣaq*]. This sub-phonemic distinction will not be represented henceforth.

A point in favor of such an analysis as *CʷV* is that this analysis accounts for certain labialized forms with excrescent bilabial stops. In Shiguzi, when certain labialized stops occur in syllable initial position, they have an excrescent labial closure at the beginning of the form. The form *rgʷæ* 'fox' does not have an excrescent stop because /*gʷ*/ is the second consonant in the onset. However, *gʷɹæ* 'soldier', which has such an excrescent stop, is phonetically [*b͡gʷɹæ*]. Examples of types of onsets with excrescent stops are given in Table 11.

A video recording of Bumtsi, a native speaker of Shiguzi, pronouncing the words for 'water' and 'bridge' is available at <https://doi.org/10.5281/zenodo.6419755>.

Labialized forms which have a doubly articulated onset /*gʷɹæ*/ 'soldier', are treated as CCV onsets rather than CCCV or even CCCCV onsets. Consider the syllable structures resulting from the various possible analyses below.

1. /*bgwɹæ*/ (CCCCV)
2. /*bgʷɹæ*/ (CCCV)
3. /*gʷɹæ*/ (CCV)

Recognizing labialization as the cause of both the rounding of the onset as well as the excrescent stop allows us to reduce the number of segments posited for this from four to two. This is to be preferred in the interest of economy. It is better because positing that labialization is a feature of the onset allows us to make more

Table 11. Labialized onsets with excrescent stops

Phonological	Phonetic	Form	Gloss
tʷ-	*p͡tʷ-*	*p͡tʷikʷi*	'badger'
tʰʷ-	*p͡tʰʷ-*	*p͡tʰʷi*	'to freeze'
dʷ-	*b͡dʷ-*	*b͡dʷə*	'to strike'
tsʷ-	*p͡tsʷ-*	*p͡tsʷə*	'water'
tsʰʷ-	*p͡tsʰʷ-*	*p͡tsʰʷa*	'bridge'
dzʷ-	*b͡dzʷ-*	*b͡dzʷə*	'buckwheat'
tʃʷ-	*p͡tʃʷ-*	*p͡tʃʷə*	'child'
tʃʷʰ-	*p͡tʃʷʰ-*	–	–
dʒʷ-	*b͡dʒʷ-*	*b͡dʒʷi*	'sweep'
gʷɹ-	*b͡gʷɹ-*	*b͡gʷɹə*	'plow-share'

sense of these consonants where *Cʷ* takes the form of doubly articulated onsets. This would be less natural if we were to posit that the underlying structure of labialized onsets were *Cu* or *Cw*.

Recall that there are no stop-stop consonant clusters in Shiguzi Rma. That is, there is no *tp-*, *tk-*, *tq-*, *kt-*, etc. Thus, it would not be felicitous to posit that these forms with excrescent bilabial stops are complex onsets, as these would be the only stop-stop onsets. It would also be phonetically inaccurate, as forms with [*BCʷ*] sequences are doubly articulated rather than sequences of two consonants.

Table 12 gives a revised consonant inventory. Onsets with labialized counterparts in gray background. Segments for which the labialized counterpart phonetically has a doubly articulated bilabial stop are given in dark gray background.

For native forms, alveolar nasals are never labialized in initial position whereas velar nasals are always labialized in initial position. There is no sequence [*ŋʷ-*]. Therefore, it would be possible to analyze [*ŋʷ-*] in native forms as /*nʷ*/ and thereby remove /*ŋ*/ from the phoneme inventory. This is the approach taken by Sun & Evans (2016) for the Hongyan variety. Nonetheless, treating all instances of Shiguzi [*ŋʷ-*] as /*nʷ-*/ would lead to awkward representations of loanwords with [*ŋ*]. For example, it is better to represent *seŋge* 'lion' < Tibetan *seng.ge* 'lion' (ultimately from Sanskrit *siṃha* 'lion') with an underlying *ŋ* than to represent it as **senʷge*.

Table 12. Onsets in Shiguzi including labialized onsets

Type	Bilabial	Alveolar	Poslateralt-Alveolar	Palatal	Velar	Uvular	Glottal
plosive	*p*	*t, t^{w}*			*k, k^{w}*	*q, q^{w}*	
plosive (aspirated)	*p^{h}*	*t^{h}, t^{hw}*			*k^{h}, k^{hw}*	*q^{h}, q^{hw}*	
plosive (voiced)	*b*	*d, d^{w}*			*g, g^{w}*		
affricate		*ts, ts^{w}*	*tʃ, tʃ^{w}*	*tɕ, tɕ^{w}*			
affricate (aspirated)		*ts^{h}, ts^{hw}*	*tʃ^{h}, tʃ^{hw}*	*tɕ^{h}, tɕ^{hw}*			
affricate (voiced)		*dz, dz^{w}*	*dʒ, dʒ^{w}*	*dz, dz^{w}*			
fricative (voiceless)		*s, s^{w}*	*ʃ, ʃ^{w}*	*ɕ, ɕ^{w}*	*x, x^{w}*	*χ, χ^{w}*	*h*
fricative (voiced)		*z, z^{w}*	*ʒ, ʒ^{w}*	*z, z^{w}*		*ʁ, ʁ^{w}*	*ɦ*
lateral (voiceless)		*ɬ, ɬ^{w}*					
lateral (voiced)		*l, l^{w}*					
nasal	*m*	*n*		*ɲ*	*ŋ, ŋ^{w}*		
approximate	*w*	*ɹ*		*j*			

Another point in favor of the analysis of labialized onsets as unitary onsets is that these onsets are still labialized when in coda position due to vowel apocope. Consider Examples (7) and (8).

(7) *harg^{w}* 'nineteen' < *ha* 'ten' + *rg^{w}ə* 'nine'

(8) *haχtʃ^{w}* 'sixteen' < *ha* 'ten' + *χtʃ^{w}ə* 'six'

The coda position suggests that the correct analysis is that labialization is a feature of the consonant, as it is retained even when the nucleus has been deleted due to apocope.

2.4 Interim summary

Table 13 illustrates the advantages and disadvantages of each of the different analyses discussed so far.

With respect to phonetics, the *C^{w}V* analysis is most accurate as the labialization takes place at the very beginning of the onset, and not afterwards. With respect to the syllable canon, the third analysis is preferable in that it allows for a symmetrical CCVCC as a maximal syllable and avoids introducing complex nuclei into the canon. The third analysis significantly complicates the inventory. However, this is not necessarily a problem, as some languages have large conso-

Table 13. Comparison of different analyses

Analysis	Phonetics	*σ* canon	*C* inventory	Lack of *$*B^w$*	[BC^w]
1. *CuV*	✗	✗	✓	✗	✗
2. *CwV*	✗	✗	✓	✗	✗
3. C^wV	✓	✓	✗	✓	✓

nantal inventories. For example, Cwyzhy Abkhaz (Andersson et al. 2023) has a very large consonant inventory including many labialized consonants. The issues of syllable canon and consonant inventory can be seen as two sides of the same coin. Importantly, support for the present analysis of these segments as labialized consonants is corroborated by the fact that there are no labialized bilabials. That is, there are no onsets with [p^w-, p^{hw}-, b^w-, m^w-]. A lack of such *B^w onset weighs in favor of the third analysis. This is because the third analysis posits labialization as a secondary feature and it does not make sense to have labialized bilabials. Lastly, an analysis which treats labialization as part of the onset can account for why certain labialized onsets are doubly articulated with bilabial stops such as in the word /$t^{hw}i$/ 'to freeze', which is phonetically [$\widehat{pt}^{hw}i$]. It is easier to account for this sub-phonemic property of certain onsets if we posit labialization as a feature of the onset (analysis #3) than if the labialization were an exponent of the nucleus (analysis #1) or a medial -*w*- (analysis #2).

3. Diachrony of labialized onsets in Qiang

This section discusses the diachrony of labialized onsets in Rma.

3.1 Rma-internal

Besides, Shiguzi, labialized onsets are found in other varieties of Rma as well. Yu Wen (1950) recorded labialized onsets in several many Rma varieties of Li County, including Zengtou, Jiuziying, and Ruodazhai varieties. Table 14 gives examples of the types of labialized onsets found in the Jiuziying data.

Table 14. Labialized onsets

Type	Onset	Form	Gloss
B+fricative	*pʂ*	*pʂʅ*	'tooth'
	bʐ	*bʐʅ*	'field'
B+plosive	*pt*	*pti*	'to retreat'
	bd	*bdi*	'to divide; to separate'
B+affricate	*pts*	*ptsʅ*	'water'
	pts^h	*pts^{h}ʅ*	'mountain'
	bdz	*bdzʅ*	'wooden closet'
	ptʂ	*ptʂʅ*	'small; little'
	ptʂ^h	*ptʂ^{h}ʅ*	'rough, course (of flour)'
	bdʐ	*bdʐʅ*	'plow-share'

There are two competing hypotheses regarding the diachrony of the labialized onsets in varieties such as Jiuziying. Chang (1967) notes the following about the labialized initials.

> In the dialect of Jota Chai there is a set of consonant clusters which have a labial consonant as their first element: *ɸ* before *s, β* before *z, p* before voiceless stops and affricates, and *b* before voiced stops and affricates. In the dialect of Chiutzu Ying such clusters have *p* before voiceless consonants and *b* before voiced ones. The counterpart in the other dialects to this pre-initial labial element is usually a *-w-* glide after the initial.

Chang (1967) treated the labialized onsets with labial closure as complex onsets with a bilabial pre-initial. Complex onsets are generally thought to be conservative characteristics in the Qiang varieties that have them. Consider the data in Table 20. The Taoping variety of Qiang conserves complex onsets in these forms whereas the Mianchi variety has lost complex onsets. Evidence that the complex onsets are conservative is given using subgroup-external data from Japhug Rgyalrong (Jacques 2016).[9]

9. However, not all complex onsets in Rma are preservations. For example, Mianchi /*mʐ̀i*/ 'rain', has a complex onset which is an innovation (Evans 2001: 59–60). The same word has two syllables in Taoping *ma^{31}ʐi^{55}* 'rain' and also two syllables in the northern variety of Hongyan *mə^{ʁ}ʁi^{ʁ}* 'rain' (Evans 2006a: 118). The first syllable is the 'sky' morpheme found in many other weather-related forms (Evans 2001: 207). Thus, this word is a good example of how a complex onset can be an innovation rather than a conservation. Similarly, the Longxi forms *ʁə́ là* 'to swim' and *ʁò lû* 'stone', and *χò là* 'wash' probably preserve older disyllabic structures whereas the corresponding Mawo forms *ʁluə* 'to swim', *ʁlu* 'stone', and *χla* 'to wash' represent syllable coalescence (see discussion in Evans 2001: 130–131).

Table 15. Complex onsets

Mianchi	Taoping	Japhug	Gloss
pià	*χpa*^{55}	*ɕpaʁ*	'to thirst'
pè tʂʰì	*χpe*^{33}	*tɤ-ɕpʰɤt*	'patch (n.)'
pù	*χpu*^{55}	*tɤ-spɯ*	'pus'
pè qè	*χpə*^{33}	*spɣi*	'granary'
tí	*χtə*^{55}	*ɯ-stu*	'to be straight'
tié mù	*χtie*^{55} *mə*^{55}	*tɯ-sni*	'heart'

Following the principle that complex onsets are conservative, Chang (1967) treats the labialized forms with stop-closures as conservative and reconstructs the following complex onsets for proto-Southern Qiang: **Bt*, **Bd*, **Bts*, **Btsj*, **Btsr*, **Btsh*, **Btshj*, **Btshr*, **Bdz*, **Bdzj*, **Bdzr*, **Bs*, and **Bsr*. Contra Chang (1967), Evans (2001; 2006a) posits that — in labialized onsets with stop closures — the stops are excrescent, secondary developments from a *-w-* medial, and not to be reconstructed for earlier stages of the language.

Evans (2001) gives the following comparisons between Jiuzi and Taoping to show that the labialization originates in the rhyme and not the onset.

Table 16. Jiuzi-Taoping correspondences

Jiuziying	Taoping	Gloss
ptsʅ	*tsuə*^{33}	'water'
ptsʅ	*tsuə*^{33}	'to ignite, kindle'
ptsʰʅ	*tsʰuə*^{55}	'mountain'
bdzʅ	*sʅ*^{31} *zuə*^{33}	'swallow'
bdɤ	*duə*^{33}	'chopsticks'
bzʅ	*zuə*^{33}	'field'

On the basis of these correspondences, Evans (2001) concludes that the liprounding is primary and the stop-pre-initial consonants in Jiuziying are secondary. Evans (2001: 139) states:

> All of the words with secondary bilabial cluster initials have transphonologized the liprounding of the *vowel to form the labial pre-initial. Bilabialization of obstruents accounts for the data that SQD [Chang 1967] presents to support the following *clusters, none of which I see any need to reconstruct: **Bt*, **Bd*, **Bts*, **Btsj*, **Btsr*, **Btsh*, **Btshj*, **Btsr*, **Bdz*, **Bdzj*, **Bdzr*, **Bs*, **Bsr*.

Evans formulates the sound rule for this change as follows.

ø → [bilabial stop]/ _dental/retroflex obstruent before *u[10]

However, Evans (2001: 139) does not note that Taoping does indeed have this kind of stop-initial labialization. Regarding the Taoping variety, Sun (1981: 10) states the following:[11]

> When front apical affricates *ts, ts^h, dz, s, z*, and back apical plosives *t, t^h, d*, etc., occur before *u*, they have notable labialization: with the complex vowel *uə* the labialization is more obvious. For example, *tsuəɿ* 'river, water' is phonetically *ptsuəɿ*; *zuəɿ* 'field, earth' is phonetically *βzuəɿ*.
>
> (Translated by Nathaniel Aaron Sims)

Forms with labialized onsets in Jiuziying have have either *u* or *y* in Taoping. Table 17 gives forms to show this regular correspondence. Because Sun only gave the narrow phonetic transcription for 'water' and 'field', I give a re-interpretation of what the narrow transcription in Taoping would be.

These forms are marked with an asterisk to show that they are not originally from Sun.

Table 17. Correspondences with Taoping

Jiuziying	Taoping phonetic	Taoping phonological	Gloss
pʂʅ	**psuə^{55}*	*suə^{55}*	'tooth'
bzʅ	*βzuə^{33}*	*zuə^{33}*	'field'
bdɤ bda	**bduə^{33}bduə^{241}*	*duə^{33}dua^{241}*	'to be fast'
bdɤ	**bduə^{33}*	*duə^{33}*	'chopsticks'
ptsʅ	*ptsuə^{33}*	*tsuə^{33}*	'water'
ptsʅ	**ptsuə^{33}*	*tsuə^{33}*	'to ignite, kindle'
pts^{h}ʅ	**pts^{h}uə^{55}*	*ts^{h}uə^{55}*	'mountain'
pʂ^{h}ʅ	**pts^{h}uə^{55}χmə^{33}*	*ts^{h}uə^{55}χmə^{33}*	'beard, moustache'
bdza ʁa	**bdzua^{31}ʁa^{33}*	*dzua^{31}ʁa^{33}*	'buckwheat'
bdza	**bdzya^{31}*	*dzya^{31}*	'to misplace'
bdʐa	**bdʐya^{241}*	*dʐya^{241}*	'broom'
bdʐa	**bdʐue^{241}*	*dʐue^{241}*	'soldier'

10. This same approach is taken in Evans (2006a: 111, Footnote 11).

11. The original is as follows: "舌尖前塞擦音 *ts, ts^h, dz, s, z* 舌尖中塞音 *t, t^h, d* 等與後高元音 *u* 相拼時，有顯著的唇化現象；與複元音 *uə* 相拼時，唇化現象更為明顯。例如：*tsuəɿ* "河"、"水"，其音值近似 *ptsuəɿ*；*zuəɿ* "田"、"地"，其音值近似 *βzuəɿ*。"

Table 18 shows that the labialized onsets in Taoping correspond to the labialized onsets in both Jiuziying and Shiguzi. Comparative data from Mawo (Liu 1998) and Ronghong (LaPolla & Huang 2003) are also given.

Table 18. Partial overlap of labialized consonants

Taoping	Jiuziying	Shiguzi	Mawo	Ronghong	Gloss
suə^{55}	*pʂʅ*	*ʂʷə*	*ʂə*	*ʂuə*	'tooth'
zuə^{33}	*bzʅ*	*zə*	*zə*	*zə*	'field'
tsuə^{33}	*ptsʅ*	*ptsʷə*	*tsə*	*tsə ~ tsuə*	'water'
dzua^{31}*ʁa*^{33}	*bdza ʁa*	*bdzʷə*	*dzə*	*dzua ʁa*	'buckwheat'
–	*bdzʅ*	*bgʷɹə*	–	–	'plow-share'
dʐue^{241}	*bdʐa*	*bgʷɹæ*	*guaˡ*	*gueˡ*	'soldier'

Note that the Shiguzi form for 'field' is irregular as we would expect **zʷə*. It may be that this is a result of dialect mixture with Mawo or a similar variety. Mawo has lost the labialization in fricative and affricate initial forms. Note that dialect mixing may have occurred in Ronghong as well. The Mawo variety is a prestige variety and influence from Mawo on other northern varieties is not improbable. The [*bdzʐ-*] onsets in Jiuziying correspond with the [*bgʷɹ*] onsets in Shiguzi.

Table 18 suggests that the correspondences are regular for labialized onsets, but casts no light on the origin of these labialized onsets. So far, we have seen two competing analyses: **pC* > *Cw* vs. **Cw* > *pC*.

The change posited by Evans (2001: 115), **Cw* → **pC*, has been documented by Lai (2017: 13, 46, 131) for the Wobzi variety of Khroskyabs. In Wobzi Khroskyabs **ɕɥ* > *fɕ*. The change **pC*> *Cw* is found both in closely related languages, such as Tangut, and more distantly related languages in the general region, such as Amdo Tibetan. In eastern varieties of Amdo Tibetan, **pC* clusters have metathesized into *Cw* onsets: *pk* > *pk͡w* > *kʷ* (see Jacques 2014: 30). Of course, it may be that some of the Rma labialized onsets are old and some are innovative.

Tangut, a western-Rgyalrongic language (Lai et al. 2021), has labialized onsets that come from pre-initial **p-*. That is, **pC* > *Cw* (see Jacques 2014: 29–30 for examples).

This Tangut sound change is part of what Miyake (2012) calls "compression". In some cases, these labialized forms come from a morphological **p-* in pre-Tangut (see Jacques 2014: 253–254). An example of this can be seen in Tangut 𗥃$_{3929}$ *tɕʰwi* 1.10 'to make melt', which continues Pre-Tangut **p-tre*.

The following section looks at the comparative Rma evidence and concludes that the labialized onsets come from at least two sources.

1. Onsets with pre-initial **pC*
2. Onsets with either **Cʷ* or **Cw*

3.2 Pre-initial **p-*

There is subgroup-external evidence that some of the forms for which Chang (1967) reconstructed as **p/bC* do indeed come from a **p-* pre-initial. Consider the data in Table 19. Subgroup external evidence comes from Tangut and Japhug Rgyalrong.

Table 19. Subgroup-external evidence for Chang's Law: * *pC* > *Cʷ*

Shiguzi	Jiuziying	Taoping	Tangut	Japhug	Gloss
–	*bdʐi*	*dʑyi*^{31}	[illegible]$_{3929}$ *tɕʰwi* < **ptre*	*ftʂi*	'to melt (transitive)'
zʷə	*bzʅ*	*zuə*^{31}*za*^{241}	[illegible]$_{3164}$ *zwɨ*^{1} < **ptsv*	–	'seed'
sə-ʁzʷ	*bdzʅ*	*sʅ*^{31}*dzuə*^{33}	[illegible]$_{0280}$ *dʑwi* < **pndre?*	–	'to swallow'
ɕʷa	–	*ɕya*^{33}	[illegible]$_{1670}$ *swewʶ* < **psvk*	*fsoʁ*	'to be bright'
sʷə	–	*suə*^{55}	[illegible]$_{1670}$ *swij* < **psej*	*fse*	'to sharpen'
–	–	*dʑyi*^{33}*la*^{55}	[illegible]$_{2464}$ *tswərʶ* < **ptsvr*	*ftsɯr*	'to wring'

Note that the form for 'to be bright' is irregular for Jiuziying as we would expect a **ps* onset. See Jacques (2014: 29–30) for the etymologies of these forms in Tangut and Japhug, especially 'to wring'.

In historical linguistics, it is good practice to name the sound laws after their discoverers (cf. Collinge 1985). This heuristic practice has recently gained traction in Trans-Himalayan historical linguistics more generally (cf. Hill 2011, 2019; Jacques 2014). Since Chang (1967) was the first to point out the cross-dialectal correspondences between *p-* and *-ʷ-* and to propose a pre-initial **p*, it makes sense to say the labialized forms which had an etymological **p-* pre-initial follow **Chang's Law**: **pC* > *Cʷ*.

3.3 Labialization from sources other than **pC*

There are labialized onsets in Rma which do not come from **pC* clusters. Consider the Jiuziying form *bdze* 'sin, error'. This is reconstructed by Chang (1967) as coming from a **bdz* cluster. It seems that this word is, in fact, a borrowing from Chinese 罪 *zuì* 'sin, evil' < Middle Chinese **dzwojX* < Old Chinese **dzˀujʔ*. For this form, the *b-* initial is excrescent and must have emerged after this word was borrowed into Jiuziying. Note that for this form the preservation of voicing is evi-

dence that this loanword was borrowed into Rma before the voicing was lost in Mandarin. Table 20 gives examples of loans from Chinese into Rma which share this pattern of preservation of voicing.

Table 20. Voiced onsets of middle Chinese preserved in loans

Longxi	Taoping	Ronghong	Chinese	Middle Chinese	Gloss
də̀ piá	–	*də*	豆	**duwH*	'bean'
–	–	*ɦe-gue*	跪	**gjweX*	'kneel'
–	*guə*^{33}	–	櫃	**gwijH*	'box'
sə̀n dzé	*ɕi*^{33} *dzie*^{241}	*dzi gu*	錢	**dzjen*	'money'
–	*dzo*^{241}	–	鑿	**dzak*	'chisel'
dzì	*dzɿ*^{33} *dzɿ*^{241}	–	字	**dziH*	'character'

The forms for 'money', 'kneel', and 'bean' have been said by Sun (1988: 58) to be loans from Chinese. Liu (1998: 7) has stated that 'character', 'box', and 'chisel' are Chinese loans (see discussion by Evans 2001: 230).[12]

Another form reconstructed by Chang (1967) as **pC* — but for which a reconstruction as **pC-* is unlikely — is 'tooth'. Consider the correspondences in Table 21.

Table 21. Subgroup-external comparisons: 'Tooth'

Jiuziying	Shiguzi	Taoping	Tangut	Guanyinqiao	Japhug	Tibetan	Burmese	Gloss
pʂɿ	*ʃʷə*	*suə*^{55}	訛$_{0169}$ *ɕwi* 1.10	*ɕvî*	*tɯ-ɕɣa*	རྭ *so*	*swâ*	'tooth'

The sequence <*bs-*> is a valid syllable onset in Tibetan. Thus, if this word had a bilabial initial in an earlier stage, we would expect to see it preserved in Tibetan.[13] The lack of support from subgroup external cognates suggests that the change **C*^{w} → *pC* is late and unique to Jiuziying for this form. Thus, Evans (2001; 2006a) is correct not to reconstruct **bs-* as a proto-Rma onset. In this case, the Jiuziying form came from**C*^{w} or **Cw*.

The difference between**C*^{w} and **Cw* at the level of proto-Trans-Himalayan/Tibeto-Burman is not clear. Matisoff's (2003) consonant inventory for his Proto-Tibeto-Burman is inconsistent with respect to the difference between conso-

12. LaPolla & Huang (2003) note that for Ronghong *də* 'bean' is "said by Sun (1988: 58) to be an old loan from Chinese, but said by Huang Chenglong to be a native word".

13. See Hill (2013), Jacques (2021b) on the Tibetan change from **wa* > *o*.

nant + *w* glide sequences and labialized onsets. Consider the form for 'dog'. The form for 'dog' is given as **d-kʷəy* (Matisoff 2003: 23–24). Matisoff notes that "this etymon is now reconstructed with a unitary labiovelar initial". However, later on Matisoff (2003) gives **kwəy* 'dog' with a medial glide. Matisoff (2003: 62) states regarding the form for 'dog':

> There is no doubt that the PTB root began with a velar stop followed by a labial element [...] In fact, as we have seen so closely was the velar bound to the semivowel that some languages treated the sequence like a unitary labiovelar phoneme **kʷ*.

Nonetheless, Matisoff (2003: 196) states that 'dog' "should really be reconstructed as PTB **kʷis*". The form is given as *kʷəy* and *kʷəy-n* respectively, in Matisoff (2003: 201, 448).

As Handel (2009: 85) has pointed out, Matisoff's system has *C-w, Cʷ*, and *Cw* onsets. Sagart (2006) has criticized this aspect of Matisoff's reconstructions as "not felicitous".

Hill's (2019) reconstruction of the proto-Trans-Himalayan initials includes labialized onsets, including **k* vs. **kʷ, q* vs. *qʷ, ŋ* vs. *ŋʷ*, among others.

Regardless of whether Proto-Trans-Himalayan labialized onsets should be analyzed as **Cʷ* or **Cw*, it seems possible that some of the labialized syllables in Rma descend from these Proto-Trans-Himalayan **Cʷ* or **Cw* onsets.[14] Forms which give evidence for labialization as a retention are given in Table 22. This table compares Rma with Tangut, Zbu (Gong 2018), and Old Chinese.

Table 22. Subgroup-external comparisons

Jiuziying	Shiguzi	Taoping	Tangut	Zbu	Old Chinese	Gloss
–	*kʷæ pʲe*	*kua*^{33}	殮$_{1752}$ *kwa* 2.56 < **s-kwak*	*qwéʁʔ*	–	'hoe'
kʰwə	*kʰʷə*	*kʰuə*^{55}	猲$_{1200}$ *kʰwɨ* 1.30 < **kʰwi*	*kwəzéʔ*	犬 < *kʷʰˤenʔ*	'dog'
gwə	*gʷə-s*	*guə*^{33}	羵$_{4906}$ *gwi* 2.10 < **ŋgwa*	*ⁿgwét*	裘 < **gʷə*	'to wear'
–	*ʐə-ŋʷ*	–	豭$_{0395}$ *ŋwe* 2.07 < **ŋwa*	*ŋwéʔ*	牛 < **[ŋ]ʷə*	'cow'
–	–	*χguə*^{33}	–	*zgwíʔ*	–	'rust'

14. The relatively small number of correspondence sets for these onsets by Hill makes it difficult to check this hypothesis. For example, there is only one instance of **ŋʷ* posited by Hill (2019).

Note that the form *gʷəs* in Shiguzi is a nominalized form meaning 'clothing'. See Zhang et al. (2019) for discussion of the Chinese form given here. The Shiguzi form *ʐəŋʷ* refers to the 'common yellow cow' and the root meaning 'cow' is **ŋʷə*.[15]

The correspondences in Table 22 show that certain labialized onsets are conservative and are inherited from proto-Trans-Himalayan.

4. Conclusion

This paper has added a new dimension to the ongoing discussions of the phonemic status of labialized consonants in Rma.

I have argued that, for the Shiguzi variety, it is most parsimonious to treat these onsets as phonologically /*CʷV*/ and not /*CuV*/ or /*CwV*/.

This not only has implications for the phonological analysis of other varieties, and contributes to the broader typology of labialized onsets and secondary articulations more generally.

Diachronically, there are at least two distinct origins of labialized onsets in proto-Rma. Some come from **p*- pre-initial elements with cognates in Rgyalrongic languages such as Tangut and Japhug. Some do not come from pre-initial **p*- and continue from either labialized initials or initial + labial glide sequences of proto-Trans-Himalayan.

This paper highlights the potential for Rma to contribute to ongoing discussions about the status of **Cʷ* vs. **Cw* in proto-Trans-Himalayan. A more comprehensive study based on more fieldwork on Shiguzi and other varieties may uncover more cognates with Chinese and Rgyalrongic to confirm the finding that Rma preserves labialized onsets from proto-Trans-Himalayan.

This paper as it brings into focus a general tendency within Rma for phonetic elements of the periphery to become properties of the entire syllable. This has parallels in the phonology of Tangut, where **p*- became *Cw*. This suggests that Miyake's (2012) concept of "compression", neatly summarized by Gong (2020) as "the tendency for phonological features from the syllable periphery to transfer to phonological features spread over the whole syllable", is highly relevant for Rma languages and should be further explored in the historical analysis of Rma.

15. Consider Mawo Rma *ŋuə* 'cow'. Consider also Mawo *sə ʁuæˡ* 'animal paw', which is likely cognate with Zbu *ɐ-ʁwê* 'ma patte'.

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List of abbreviations

PTB Proto-Tibeto-Burman

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