

On the Origins of Labialized Consonants in Lao

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1. INTRODUCTION. Lao has labialized consonants. As will be illustrated, these must be treated as unit phonemes rather than as clusters. It is hypothesized that Lao underwent a restructuring which limited the maximal syllable to CVC; as a part of this change, some CuV- sequences were reinterpreted as CwV- sequences, where Cw is a rounded consonant which acts as a unit, rather than as a sequence.¹

2. OVERVIEW OF LAO PHONOLOGY. As an understanding of the syllable structure of Lao is essential for following the development of the labialized consonants, an outline of the phonology is presented here.

2.1 THE SYLLABLE. Lao has a canonical syllable structure of the type (C)V(C). All Lao syllables also carry a tone (see §2.4 below). Only the following consonants may occur syllable-finally: /p t k ʔ m n ŋ w j/ (Morev et al. 1979:20).

Syllables that end in a glottal stop may co-occur with only two of the six tones; those that end with any other stop may co-occur with only four of the tones (Morev et al. 1979:20).

Finally, note that treating the final offglides /j/ and /w/ as consonants reduces what are phonetically triphthongs into diphthong + glide sequences.

2.2. VOWELS. Lao has 12 vowels: /i i̯ e ε u u̯ ū̯ ʊ̯̄ o ɤ ɔ a/ (Morev et al. 1979:18). In closed syllables, any vowel may be either long or short; in open syllables, only long vowels are allowed. For diphthongs, the first element is the syllabic and bears the length if present.

The vowels have a front series, a back rounded series, and a back unrounded series. The diphthongs consist of a high vowel with a schwa offglide.

2.3 CONSONANTS. Lao has 28 consonants (Morev et al. 1979:19). There are five places of articulation, namely labial, alveolar, palatal, velar, and glottal. All places of articulation, except labial, also have rounded consonants; however, not

every plain consonant has a rounded counterpart. The labialized consonants do not occur before round vowels.

It is significant that although Lao has a palatal glide /j/, there are no tautosyllabic Cj- sequences, nor are there any phonemically palatalized consonants.

The consonants are presented below in two tables. The first treats labialization as secondary; the second treats it as primary. The latter arrangement reflects the position on Lao phonology taken here.

	labial	alv.	palatal	velar	glottal
-asp. stop	p	t	c	k	ʔ
+lab. stop		tw	cw	kw	ʔw
+asp stop	p ^h	t ^h		k ^h	
+lab. asp		t ^h w		k ^h w	
+voi stop	b	d			
fric	f	s			h
+lab fric		sw			
nasal	m	n	ɲ	ŋ	
+lab nasal				ŋw	
lateral		l			
+lab lat		lw			
glide	(w)		j	(w)	

TABLE 1. LAO CONSONANTS.

	labial	alv.	lab.- alv.	pal.	lab.- pal.	velar	lab.- vel.	glot.	lab.- glot.
Stop	p	t		c	cw	k	kw	ʔ	ʔw
+asp	p ^h	t ^h	t ^h w			k ^h	k ^h w		
+voi	b	d							
Fric	f	s	sw					h	
Nasa	m	n		ɲ		ŋ	ŋw		
l									
Lat.		l	lw						
Glide				j			w		

TABLE 2. LAO CONSONANTS REVISITED.

Although all consonants may occur syllable-initially, only nine may appear syllable-finally (§2.1). Other limitations of co-occurrence are discussed in the section on the syllable.

The arrangement in Table 2 brings out the limited distribution of the labialized, or rounded consonants. Note that

although all the velars have labiovelar counterparts, just half of the alveolars, and only one of the palatals, have rounded counterparts. This skewed distribution will be brought up again in §3.

2.3.1 THE GLOTTAL STOP. The phonemic status of glottal stop is an issue in Lao phonology. Morev et al. argued that it must be treated as a phoneme (1979:20). If it is not, then one must account for the aberrant behavior of those syllables which end with a glottal stop. Although all six tone categories of Lao may occur with any open syllable, those ending in glottal stop have only short vowels, and occur with only two of the tones. Accounting for this distribution is easier if glottal stop is allowed as a phoneme. This is an issue which warrants further research, but will be ignored henceforth here.

According to Morev et al.'s analysis, there is also a rounded glottal stop. As the primary data source for this paper, Kerr 1972, is arranged according to Lao alphabetical order, and since glottal stop is not represented in Lao orthography, no instances of λw - were found.

2.4 TONE. Lao has six tones. They can be described as low level (11),² mid level (33), high level (44), rising (24 or 214), high falling (53), and low falling (31) (Hoshino & Marcus 1981:13). They are given the following numbers in Morev et al. 1979: low level (5), mid level (4), high level (2), rising (1), high falling (3), and low falling (6).³ As the tones do not bear upon the discussion here, they will not be mentioned again.

3. LABIALIZED CONSONANTS. As noted above, labialized consonants do not occur before round vowels in Lao. Although some languages allow labial and labialized consonants to occur before round vowels, such as Cantonese (e.g. *gwok* 'country'⁴) and Ponapean (e.g. *umwpwul* 'flame' (Rehg 1984:327)), it is entirely possible for the roundness of the consonant to be lost and assimilate to the roundness of the following vowel. This has occurred to a limited degree in Cantonese, in which all earlier sequences of labiovelar + high back round vowel have been simplified to plain velar + high back round vowel sequences (Matthews & Yip 1994:14). Further, there are dialects of Cantonese which do not distinguish *kw*- and *gw*- from *k*- and *g*- (respectively) before any round vowel. These dialects preserve /*k^w*/ and /*g^w*/ in other environments, however.

Tinrin, a Melanesian language of the Austronesian family, also distinguishes plain velars from labiovelars. However, this contrast is not found before any round vowel (Osumi 1995:17).

Gilbertese (Kiribati), a Micronesian language closely related to Ponapean, also has rounded labials, like Ponapean. Unlike Ponapean, Gilbertese does not allow rounded labials before round vowels (Rehg: personal communication).

It would appear that if Lao had once allowed labialized consonants before round vowels, changes similar to the ones attested in Cantonese, or those apparent in Tinrin and Gilbertese, have occurred. This may be why sequences of labialized consonant + round vowel do not occur in Lao.

The labialized consonants in Lao have both limited distribution and infrequent occurrence. As noted above, they do not occur before round vowels. Most instances of labialized consonants are before the low vowel /a/, although there were also several instances of labialized consonants before /ɛ/, and two instances before /i/, listed in Kerr 1972.

Except for the labiovelar stops, the labialized consonants are rare. Kerr 1972 listed very few words with *sw-*, *ngw-*, *cw-*, *thw-*, or *lw-*. However, there were more than 14 pages of *entries with initial khw-*. The majority of the *khw-* entries, being polysyllabic, were not included for consideration here. As noted above, Kerr 1972 listed neither glottal stop nor rounded glottal stop, and this latter sequence shall be ignored hereafter. The relative rarity of the labialized consonants other than the labiovelars attests to their secondary, derived nature.

The labialized consonants are best treated as unit phonemes, rather than as consonant-glide sequences. There are several facts which support this view. One is the canonical syllable in Lao, which is maximally CVC. Another is that there are no Cj- sequences (§2.3). Also, if the rounded consonants were CG sequences, then one might expect that they would occur with all non-labial initial consonants, when in fact, as is shown in Tables 1 and 2, the distribution of rounded consonants is limited. Additionally, there are very few forms with rounded consonants other than the labiovelars. Finally, the labialized consonants pattern as units in word play, as do the aspirated consonants, rather than as C-w or C-h sequences (Morev et al. 1979:21). Note the existence of Chamic languages where aspirated consonants behave as Ch sequences rather than as unit phonemes (Thurgood 1993; Thurgood personal communication).