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Australian
National
University

PATHWAYS OF DEVELOPMENT FOR QIÁNDŌNG HMONGIC ASPIRATED FRICATIVES

Vincent Carveth

University of Calgary

<vcarveth@pncl.com>

Abstract

The Qiándōng dialects of Hmongic are characterized by the presence of multiple aspirated spirants (Carveth 2012, Jacques 2011, Wang 1979). This paper proposes three pathways of development for those fricatives, using Qiándōng data from Ma & Tai (1956) and Purnell (1970). The first, leading to alveolar and palatal aspirated fricatives in Qiándōng, is an extension of Wang's (1979) analysis of a chain shift in the Yǎnghāo dialect. Labiodental aspirated and unaspirated fricatives are reconstructed as having come from palatalized bilabial stops, akin to Pulleyblank's (1984) reconstruction of Middle Chinese. Finally, lateral aspirated fricatives developed from the spirantization of aspirated liquids.

Key words: Hmong-Mien, historical phonology, aspiration.

ISO 639-3 language codes: hmq, hea, hms.

1. Introduction

The focus of this paper is the Qiándōng Hmongic subgroup of the Hmong-Mien language family. Qiándōng speakers number roughly 1.4 million people in southeastern Guizhou province in southwest China (Niederer 1998:51). Qiándōng dialects are loosely associated with the Black Hmong/Miao ethnic subgroup in Guizhou (1998:77). However, the correlation is a loose one, as the Hmong/Miao ethnic group extends beyond Guizhou to much of southern China and northern Indochina, and other Black Hmong groups do not appear to speak Qiándōng varieties.

A major distinctive feature of Qiándōng Hmongic dialects is the presence of multiple aspirated fricatives, each contrasting with an unaspirated equivalent. This paper, drawing on Carveth (2012), aims to reconstruct the etiology of this fricative series. Such work is valuable in that it expands our understanding of both Hmong-Mien language history and the typology of sound change more broadly.

The paper is laid out as follows. Section 2 discusses the crosslinguistic presence of aspirated fricatives, the significance of their presence in Qiándōng, and their phonetic and phonological nature. Section 3 describes a diachronic chain shift creating aspiration distinctions in Qiándōng alveolar and palatal fricatives. Section 4 details the evolution of labiodentals with contrastive aspiration from palatalized labials. Section 5 posits that aspirated lateral fricatives in Qiándōng are the result of a spirantization of aspirated liquid laterals. Finally, section 6 concludes.

2. Typology of aspirated fricatives

Aspiration distinctions are very rare in fricatives. Only three languages in Maddieson's (1984a) study have such a contrast, and only in alveolars. Jacques' (2011:2) effort to catalogue other examples details roughly 20 more such languages with aspiration distinctions in spirants. Most languages with this quality are in Asia, with Tibeto-Burman possessing a relative surplus, as Burmese, Sgaw Karen and several Tibetan dialects have aspirated fricatives. Given the close geographic proximity of these and other languages involved, for instance, the Tai-Kadai language Shan and the Hmongic dialects described here, it is likely that aspirated

fricatives represents an areal development in mainland Southeast Asia. However, examples exist outside this region, such as parts of the Oto-Manguean family (Kirk 1966, Knapp 1996, Pike & Pike 1947, Rensch 1976, Silverman et al. 1995), the Siouan language Ofo (Rankin 1988, Rankin 2004) and Chumashan (Klar 1977:13-15). This indicates that while aspirated fricatives may have arisen areally in Southeast Asia, they also have arisen elsewhere in an unrelated manner, suggesting the circumstances that generated them in Asia were not unique.

Qiándōng is remarkable even among the small set of languages with aspiration distinctions in spirants in that it has fricative aspiration contrasts in labiodentals, alveolars, palatals and laterals. The Yǎnghāo dialect has five aspirated fricatives, the most of any language represented in Jacques (2011), and Qiándōng dialects on the whole have a similarly robust set of contrasts (Carveth 2012:12). As such, the Qiándōng group provides a unique opportunity to study the diachronic origin of a large array of aspirated spirants. This paper thus focuses on reconstructing sound changes involved in the creation of Qiándōng's aspirated fricatives, in order to add to the typological understanding of sound change as well as assist further historical work on Hmong-Mien languages.

It must be noted that the phonetic details of aspiration in fricatives are somewhat unclear. This is largely because phonetic studies of the phenomenon have not taken place. The main issue is that aspiration is traditionally associated with the [spread glottis] feature, but so are fricatives. Thus, difficulties arise when determining status of fricatives with regards to [spread glottis] in a language that has contrastive fricative aspiration (see Carveth 2012:46, Halle & Stevens 1971, Halle 1995, Vaux 1998). This is not merely a phonological problem; if fricatives are articulated with the glottis spread already, then the seemingly aspirated quality of the aspirated fricatives cannot be a simple matter of a spread glottis as it is in stops. Most likely, researchers transcribing aspiration on fricatives in these languages are hearing increased airflow as the primary cue, perhaps originating from a different degree of glottal compression. A phonetic study of aspirated fricatives would illuminate this topic greatly, but in the meantime this hypothesis is sufficient for reconstructive work.

3. Chain shift in alveolars and palatals

The question of how Qiándōng's aspiration distinction in alveolar and palatal spirants developed has been studied previously by Wang (1979), with regards to the Yǎnghāo dialect. Wang (1979) hypothesizes a chain shift between Proto-Hmong and modern Yǎnghāo. This chain shift combines the loss of prenasalization in consonants with a reductive process; presumably, prenasalization was lost as an articulatory simplification, which forced reduction in non-prenasalized equivalent phonemes to avoid ambiguity. Wang's Yǎnghāo chain shift is detailed below, the protoforms being his Proto-Hmong¹.

- 1) ⁿts- > s- > s^h-
 ⁿtɕ- > ɕ- > ɕ^h-
 ⁿts^h-, -ts^h > s^h-
 ⁿtɕ^h- > ɕ^h-

3.1 Second level heading

The chain shift ties together both of the major traits of Qiándōng dialects, the lack of the prenasalized consonants present in the rest of Hmongic and the presence of aspiration distinctions in fricatives, by suggesting that the loss of the prenasalized onsets in fact drove the development of aspiration distinctions in s- and ɕ-. As such, it has significant explanatory power. The possibility of extending Wang's (1979) analysis to the entirety of the Qiándōng group is then quite compelling. This approach is taken in this paper.

Listed on the following page are the relevant correspondence sets from Ma & Tai (1956) for Qiándōng alveolars and palatals, along with their reconstructions in Carveth (2012).

¹ The voiceless alveolo-palatal fricative noted by Wang (1979) here is transcribed in Ma & Tai (1956) as palatal and will be treated as such for the remainder of this paper, as are Wang's alveolo-palatal ^{*n}tɕ^(h) and ^{*s}ɕ^(h) forms. More fieldwork is necessary to determine the exact phonetic character of these items.

Table 1: Alveolar and palatal series in Ma & Tai.

Dialect	Ser. 1	Ser. 2	Ser. 3	Ser. 4	Ser. 5	Ser. 6	Ser. 7	Ser. 8
Reconstructed PQH Onset(s)	*ts	*tɕ	*tsʰ	*tɕʰ	* ⁿ ts	* ⁿ tɕ	*s/ ⁿ tsʰ	*ç/ ⁿ tɕʰ
Cóngjiāng	ts	tɕ	tsʰ	tɕʰ	s	ç	s	ç
Huánglǐ	ts	tɕ/tɕʰ	tsʰ	tɕʰ	s	ç	sʰ	çʰ
Jiābā	tɕ	tɕ	tɕʰ	tɕʰ	s	ç	sʰ	ç/kʰ
Jǐnpíng	ts	tɕ	tsʰ	tɕʰ	ts	ç	s	çʰ
Jìngxìàn	ts	tɕ	tsʰ	tɕʰ	s	ç	s	ç
Jīnzhōng	ts	tɕ	tsʰ	tɕʰ	s	ç	sʰ	çʰ
Jiùzhōu	tɕ	tɕ	tɕʰ	tɕʰ	s	ç	sʰ	çʰ
Páitíng	ts	tɕ	tsʰ	tɕʰ	s	ç	s	ç
Sāndū	ts	tɕ	tsʰ	tɕʰ	s	ç	sʰ	çʰ
Sānsuì	ts	c	tsʰ	cʰ	ts	ç	s	ç
Táigǒngzhài	ts	tɕ	tsʰ	tɕʰ	s	ç	sʰ	çʰ
Tàiyōng	ts	tɕ	tsʰ	tɕʰ	s	ç	tsʰ	tɕʰ
Wúchà	s	tɕ	sʰ	tɕʰ	s/sʰ	ç	sʰ	çʰ
Wūluò	ts	tɕ	tsʰ	tɕʰ	s	ç	sʰ	çʰ
Xīnqiáo	tɕ	tɕ	tɕʰ	tɕʰ	s	ç	sʰ	çʰ
Xuānwēi	ts	tɕ	tsʰ	tɕʰ	s	ç	sʰ	çʰ
Yǒng'ān	ts/tsʰ	tɕ/tɕʰ	tsʰ	tɕʰ	s	ç	sʰ	çʰ
Zhènyuán	s	tɕ	sʰ	tɕʰ	s/sʰ	ç	sʰ	çʰ
Zhōuxī	l	tɕ/tɕʰ	tsʰ	tɕʰ	s/sʰ	ç	sʰ	çʰ

3.2 Extension of Wang’s (1979) Chain Shift

Some alterations need to be made to expand Wang’s analysis to this broader spread of dialects. This adds some complexity to the system, but does not disrupt the fundamentals of the analysis.

Instead of assuming that the derivation is from Proto-Hmong, this paper adopts Carveth’s (2012:93) assessment that the prenasalized proto-forms are Proto-Qiándōng-Hmongic (henceforth PQH). However, given that all other fricative aspiration distinctions originate prior to the PQH stage, they may in fact also belong to a pre-Qiándōng stage of development. The changes for the family as a whole, drawing on Carveth (2012:94), are listed below.

- 2) PQH *ⁿts^(h)- > ts^(h)-, s^(h)- in differing dialects
- PQH *ⁿtɕ^(h)- > tɕ^(h)-, ç^(h)- in differing dialects
- PQH *ts^(h)- > tɕ^(h)-, s^(h)- in some differing dialects, no change in others
- PQH *s- > sʰ-
- PQH *ç- > çʰ-

In the figure on the following page, PQH consonants are shown on the left hand side, with arrows connecting them to their various reflexes in the modern dialects.

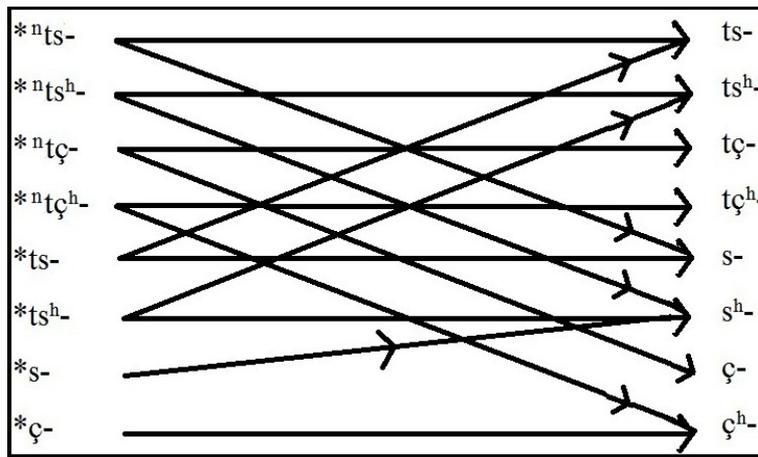


Figure 1: Diagram of Qiándōng palatal and alveolar reflexes.

Needless to say, this is more complicated. The non-prenasalized alveolar affricate noted by Wang (1979) not only does not always reduce to a fricative, but in many dialects moves backwards to become palatal. In other words, it changes independently from the reducing prenasalized affricates. Secondly, the prenasalized affricates in some dialects only reduce to affricates.

Still, the vast bulk of the system behaves according to the Yǎnghāo pattern. Only in three dialects, Jīnpíng, Sānsuì and Tàiyōng, are there affricate reflexes rather than fricative ones for PQH’s prenasalized fricatives (Carveth 2012:69). These are discussed further in section 6.1, and given the utility of Wang’s (1979) analysis for the rest of the family, are ignored for the moment. In other dialects, the prenasalized affricates reduce to fricatives, as in Yǎnghāo.

3.3 Word sets demonstrating sound changes

Ma & Tai (1956) use very few actual examples to illustrate patterns, mostly relying on tables of sound correspondences, making specific etyma hard to come by at this time. This issue is compounded by the problem that in some cases, the series in Carveth (2012) have been produced by merger, such as the aspirate sʰ- series, which originates both from aspirated prenasalized affricates and unaspirated fricatives.

However, a few tables of examples can be shown to demonstrate the reconstructed onsets. Words behaving as part of series 7 and 8 in Table 1 are shown here in three representative dialects. Reflexes of the unaspirated prenasalized affricates, series 5 and 6, pattern similarly, but without the aspiration distinction.

Table 2: Series 7 and 8 reflexes.

Gloss	Cóngjiāng	Táigōngzhài	Tàiyōng	Originating Series
'end'	[sa ³]	[sʰei ³]	[tsʰa ³]	7(*s/ ^{n̥} tsʰ)
'erase'	[çaŋ ⁵]	[çʰaŋ ⁵]	[tɕʰaŋ ⁵]	8(*ç/ ^{n̥} tɕʰ)
'song'	[çi ⁷]	[çʰa ⁷]	[tɕʰa ^{6/7}]	8(*ç/ ^{n̥} tɕʰ)
'thousand'	[saŋ ¹]	[sʰaŋ ¹]	[tsʰaŋ ¹]	7(*s/ ^{n̥} tsʰ)

(Ma & Tai 1956: 36)

The series reconstructed as non-prenasalized affricates are perhaps perplexing as they actually reduce to a fricative in fewer dialects than the prenasalized affricates do. However, evidence outside the family supports this reconstruction as well; ‘five’ and ‘house’ in the chart below have non-prenasalized postalveolar affricate cognates in the well known White Hmong variety of the Chuānqiándiān branch, tsib [tʃi¹] and tsev [tʃe³] respectively. This begs the question of why the prenasalized series seems in so many dialects to have bypassed the purely oral affricate, rather than interact with it, and instead become a fricative. One possibility is that the loss of the prenasalization caused the loss of the affricate’s closure in many cases, but the exact mechanism for this remains unclear.

Table 3: Alveolar affricate reflexes.

Gloss	Jiùzhōu	Táigǒngzhài	Wǔchà	PQH Onset
'fish basket'	[tʰa ⁵]	[ts ^h a ⁵]	[s ^h a ⁵]	*ts ^h
'five'	[tʰa ¹]	[tsa ¹]	[sa ¹]	*ts
'house'	[tʰi ³]	[tse ³]	[sa ³]	*ts
'stamp'	[tʰo ⁵]	[ts ^h o ⁵]	[s ^h o ⁵]	*ts ^h

(Carveth 2012:93, Ma & Tai 1956:37)

3.3 Nature of the Chain Shift

There is reason to believe that this is a push shift. First is the point that the loss of the prenasalization as a phonetic cue in stops would be a simplification of the sound, the removal of the nasalization gesture. The change at the level of the prenasalized affricate is thus quite phonetically natural. The change at the bottom of the system, the aspiration of unaspirated spirants, is not clearly so. Unaspirated fricatives are already produced with a spread glottis, so it is unclear what articulatory factors are involved in an aspirated fricative (Kingston 1990, Stevens 1991). Phonetic work on aspirated fricatives, unfortunately, is lacking (Carveth 2012:47). However, if such a change was phonetically motivated in and of itself, we would expect aspirated fricatives to be fairly widespread crosslinguistically, and as mentioned in section 2, they are not.

3.4 Burmese analogue to the Qiándōng Chain Shift

Two major analogues to this chain shift occur elsewhere. A chain shift occurred between Middle and Modern Burmese, prompted by the removal of [s] from the system, in which complex affricate clusters reduced in a similar way (Jacques 2011:8). Also, in southern Shan dialects, a change has occurred in which an unaspirated [s] aspirated and an affricate reduced to fill the gap (Edmondson 2008:197). Both resemble the Qiándōng shift in different ways.

Between Middle Burmese, that spoken around the fifteenth century, and the modern variety, a chain shift took place, the chronology of which is relatively well understood, thanks to the written record (Bradley 2011:4). The changes begin with development of Old/Middle Burmese *s-* into a dental affricate² sometime between the twilight of the 18th century and the middle of the 19th. Alveolar affricates appear to have reduced to fricatives, retaining their aspiration distinctions, between the 2nd Anglo-Burmese War in the 1850s and the 3rd in the 1880s. At some point in the latter half of the 19th century, velar stop-palatal glide clusters sibilantized to become affricates. These shifts are displayed below in chain form.

- 3) ts > s > tθ
 ts^h > s^h
 k^(h)y- > tɕ^(h)

(Bradley 2011, Jacques 2011:7)

The most likely explanation is that the shift of the alveolar fricative to a dental affricate left Burmese with alveolar affricates, but no alveolar fricatives. As a result, the affricates' closure was no longer contrastive and thus was lost, the affricates becoming fricatives. However, the affricates originally had a contrast in aspiration, and this was maintained as they reduced, resulting in an aspiration contrast in alveolar fricatives in Modern Burmese. Subsequently, the gap in affricates allowed for the reduction and sibilantization of the velar stop clusters.

The reductive effects of the chain shift in Burmese are quite similar to those in Qiándōng; the clusters simplify to affricates and the simple affricates spirantize, with retention of aspiration distinctions. The major difference is that the timing suggests that the Burmese chain is motivated from the bottom, as the alveolar fricative removes itself from the system at the beginning of the shift, resulting in a drag chain.

In contrast, the Qiándōng shift is likely a push shift. The *s and *ç protoforms do not remove themselves from the system; instead, they aspirate. It is not clear that the gap this creates, a gap only in the

² The preaffrication is somewhat weak in Modern Burmese, and many sources inaccurately characterize the pronunciation as an interdental fricative (Bradley 2011:48).

unaspirated fricative, would motivate a reduction in both aspirated and unaspirated affricates. Moreover, the prenasalization contrast in Hmongic is crosslinguistically rare and loss of the distinction is thus far from strange; the Qiándōng shift could have started at the top with a simple lenition of the prenasalization, and all other elements would follow in a push chain shift.

3.5 Shan analogue to the Qiándōng Chain Shift

Shan also has a relevant and similar set of changes in its history. The following changes are known to have occurred in southern Shan (Edmondson 2008:197).

- 4) *s/z > s^h
- *tɕ/dz > s-

Northern varieties of Shan contrast the same word sets, but with the original affricate-fricative distinction rather than an aspiration distinction in fricatives. This is shown in the following table.

Table 4: Shan alveolar etyma.

Sibilant source	Gloss	Northern Shan	Southern Shan
*dʒ	‘boy, male’	tʂai ²	ʂai ²
*dʒ	‘elephant’	tʂaŋ ⁴	ʂaŋ ⁴
*dʒ	‘artisan’	tʂaŋ ⁶	ʂaŋ ⁶
*tɕ ^h	‘prince, lord’	tʂau ³	ʂau ³
*s	‘three’	ʂaam ¹	s ^h aam ¹
*s	‘four’	ʂi ⁵	s ^h i ⁵
*s	‘unmarried girl’	ʂau ¹	s ^h au ¹
*s	‘tiger’	ʂu ¹	s ^h u ¹
*s	‘pillar’	ʂau ¹	s ^h au ¹
*s	‘tall, high’	ʂuŋ ¹	s ^h uŋ ¹
*z	‘wash (hands)’	ʂak ⁸	s ^h ak ⁸
*z	‘wash (surface)’	ʂuk ⁸	s ^h uk ⁸

(Carveth 2012:93, Ma & Tai 1956:37)

Unfortunately, written evidence from Shan is not as extensive as that from Burmese. The direction of this shift is largely known from previous Tai-Kadai reconstructive work, and philological evidence has little to say on the timing of the two changes. As deaffrication is phonetically motivated, being the weakening and loss of the stop closure, the deaffrication could have occurred for phonetic reasons and motivated the subsequent aspiration of the fricative. Alternately, the deaffrication could have resulted in a fricative distinct from the alveolar (perhaps something farther back, given the phonetic nature of the affricates), and distantiative effects may have caused the alveolar to aspirate, making aspiration and not place of articulation the distinctive cue.

Arguments for a pull chain in Shan are weaker. As discussed with Qiándōng, the phonetic naturalness of a spontaneous aspiration of s- is dubious. However, Shan is in close and intimate contact with Burmese, and the Burmese change may have influenced Shan. The geography supports this possibility as well, given that the southern dialects that were affected are those closest to the areas inhabited by ethnic Burmese. Still, this only removes the problem one step, in that the Burmese change’s origin still needs to be pinned down.

Given the phonetic rationale, the Shan change likely began with deaffrication of the affricate onsets. In this matter, it is a better analogue for Qiándōng in that change also starts at the top of the system and moves through it via push chain effects. Shan, like Qiándōng, also includes the aspiration of unaspirated s-. However, Qiándōng’s reduction of complicated clusters to affricates has no counterpart in Shan, unlike in Burmese.

3.6 Concluding remarks on the *Qiándōng Chain Shift and its crosslinguistic counterparts*

The Shan and Burmese changes suggest that the chain shifts like that posited for *Qiándōng* are viable pathways towards aspirated fricatives. They differ in their details, however, and likely in their actuation as well. In particular, Burmese appears to have developed its aspirated fricatives in a pull chain shift, whereas *Qiándōng* did so in a push chain. Further work on the cause of the Burmese chain shift would not only be informative in its own right, but might shed light on why *Qiándōng* behaved differently.

Wang's (1979) chain shift, given the alterations made in section 3.1, works well for the *Qiándōng* data at hand, in that it explains two of the *Qiándōng* branch of Hmongic's distinctive traits, its lack of prenasalized onsets and the presence of aspirated palatal and alveolar fricatives, with a single stroke. Furthermore, similar chain shifts exist in languages in other language families, adding to the plausibility of such a chain shift in *Qiándōng*. This paper accordingly proposes that Wang's (1979) *Qiándōng Chain Shift*, with this paper's modification, is indeed an accurate description of sound change in *Qiándōng* palatals and alveolars.

4. Labiodentals

Aspirated and unaspirated labiodental fricatives are both present in *Qiándōng*, with two series dominated by *f*- and *f^h*- reconstructed by Carveth (2012: 82) as **f* and **f^h*, respectively, in Proto-*Qiándōng*-Hmongic. The uniformity of these series suggests that the origin of this consonantal distinction lies in a stage prior to Proto-*Qiándōng*-Hmongic.

The chain shift analysis outlined in the previous section is insufficient to clearly elucidate the origins of the aspiration distinction in labiodental spirants. Any attempt to extend the *Qiándōng* chain shift to labiodentals would require positing a labiodental affricate of some kind, and there is no evidence anywhere in Hmongic for such a consonant, whereas the affricates involved in the chain shift are attested abundantly.

Furthermore, the chain shift produced aspirated affricate reflexes in some dialects, and no such remnant affricates are in evidence with labiodentals. This second problem could be circumvented by reconstructing only an unaspirated affricate and a Shan-type change as the origin of the distinction, but this raises the question as to why only the labiodental affricates would lack an aspiration contrast.

Finally, the aspiration distinction in labiodental fricatives might have been induced by its emergence in other fricatives in a solidarity chain shift, but no environment for a split is apparent. Without some sort of environment or condition to explain why some words aspirated and some did not, this option has little explanatory power and is not a compelling one.

An appealing alternative to extending the chain shift can be found in a pathway posited for Late Middle Chinese. According to Pulleyblank (1984), the Late Middle Chinese consonants **f* and **f^h* developed from Early Middle Chinese **p^j* and **p^h*. Such a development is plausible in *Qiándōng* as well. From a phonetic standpoint, it is quite clear why such a change could occur; the movement of the tongue towards the palate during the palatalization gesture would tend to compromise the stop closure if the timing of the two gestures began to significantly overlap. Furthermore, there are similar changes elsewhere, most notably in the synchronic phenomenon of consonant lenition in Irish. Finally, palatalization is present elsewhere in *Qiándōng*, and palatalization and palatals are common elsewhere in Hmong-Mien (Carveth 2012:84).

Drawing on a proto-language as existing attestation of a pathway of change is potentially problematic, as proto-languages are subject to revision. However, this particular reconstruction is supported by Chinese rhyme tables indicating the existence of the aspirated spirants in Late Middle Chinese (Jacques 2011:4). Without these rhyme tables, the Late Middle Chinese consonants could potentially be reconstructed as affricates instead of fricatives. However, the phonetic naturalness of the change and the rhyme table evidence combine to create solid backing for this pathway in Middle Chinese, making its extension to *Qiándōng* tenable as well.

The spirantization of palatalized labial stops is thus phonetically natural and attested elsewhere. It also explains the data quite well, in that it would lead to an aspiration distinction in labiodental fricatives without any labiodental affricates in the system at any stage. A sample of etyma this account would explain is provided here.

Table 5: Labiodental etyma.

Original onset	Gloss	Táigǒngzhài	Gloss	Táigǒngzhài
*p ⁱ	‘melon’	[fa ¹]	‘bright’	[faŋ ²]
*p ^{ih}	‘be light’	[f ^h e ¹]	‘rub in hands’	[f ^h a ¹]

(Ma & Tai 1956: 35,39,47)

Accordingly, this paper proposes that such a retiming of gestures is indeed the origin of Qiándōng aspirated and unaspirated labiodental fricatives.

5. Laterals

Neither of the analyses developed in the previous two sections can account for the creation of an aspiration distinction in fricative laterals. There is no basis to posit a chain shift as in the alveolar and palatal fricatives, while the lenition of the palatalized stop is a direct result of its particular phonetic characteristics and cannot be applied to laterals. Instead, this paper argues that the presence of aspirated lateral fricatives is the result of a spirantization of aspirated liquid laterals. Furthermore, it is argued here that two aspirated lateral fricatives, palatalized and unpalatalized, exist due to a palatalization rule affecting laterals followed by a now-lost high vowel or onglide.

There are five series of laterals in modern Qiándōng, each one primarily dominated by a different one of the attested reflexes, and as such Carveth (2012:97) reconstructs *l, *lⁱ, *l̥, *l̥^h, and *l̥^{ih} for Proto-Qiándōng-Hmongic. Following that analysis, this paper takes the origin of aspirated liquid spirants in Qiándōng to be prior to the PQH state. 5a and 5b below occurred in two distinct prior stages, henceforth called Early and Late Pre-Qiándōng.

5a) Early Pre-Qiándōng *l^(h)[+high] > Late Pre-Qiándōng *l^(h)

5a) Early Pre-Qiándōng *l^(h)[+high] > Late Pre-Qiándōng *l^(h)

5.1 Changes in laterals from a featural perspective

There are three contrasts among Qiándōng laterals: aspiration, palatalization and manner of articulation (fricative versus liquid). Some combinations are present in the data, while others are not. A look at which are available is revealing.

Table 6: Currently attested feature combinations in laterals.

	Unaspirated		Aspirated	
	Unpalatalized	Palatalized	Unpalatalized	Palatalized
Fricative	Attested	Unattested	Attested	Attested
Liquid	Attested	Attested	Unattested	Unattested

(Carveth 2012:105)

There are two gaps in the above paradigm. First, aspirated liquid laterals are not attested. More strangely, though, the unaspirated palatalized lateral fricative is also unattested. This is bizarre from an implicational standpoint, as the aspirated version is available. Given the rarity of aspirated fricatives, one would expect precisely the opposite.

One possible origin, the one chosen in this paper, would account for both anomalies. If the PQH aspirated fricatives originated from a spirantization of aspirated liquids, this implies a prior stage in which only liquids had palatalized variants. Such a stage is shown in Table 7 below.

Table 7: Available feature combinations in Late Pre-Qiándōng.

	Unaspirated		Aspirated	
	Unpalatalized	Palatalized	Unpalatalized	Palatalized
Fricative	Attested	Unattested	Unattested	Unattested
Liquid	Attested	Attested	Attested	Attested

At the Late Pre-Qiándōng stage, there is no implicational conflict with palatalized lateral fricatives simply because neither aspirated nor unaspirated ones exist. The spirantization created an aspirated palatalized lateral fricative after this stage, and the aspiration remained despite the lack of an unaspirated version due to the robustness of aspiration as a contrast in fricatives elsewhere in the language.

Moreover, this allows for a straightforward account of the application of palatalization. At the present stage shown in Table 6, it would be difficult to explain a palatalization taking place in aspirated fricatives and unaspirated liquids, but not in unaspirated fricatives. However, at the Late Pre-Qiándōng stage shown in Table 7, it becomes clear that palatalization only applied to liquids. Working backwards again produces the system shown in Table 8 for the Early Pre-Qiándōng stage.

Table 8: Available feature combinations in Early Pre-Qiándōng.

	Unaspirated	Aspirated
Fricative	Attested	Unattested
Liquid	Attested	Attested

The table below shows some etyma with their reconstructed Early Pre-Qiándōng onset, given the account of lateral development in this chapter.

Table 9: Early Pre-Qiándōng onsets for Táigōngzhài laterals.

Gloss	Táigōngzhài	Early Pre-Qiándōng Onset
‘a piece’	*l ^a	*l
‘moon’	*l ^h a ⁵	*l ^h
‘big’	*l ^h **1	*l ^h
‘decay, rot’	*le ²	*l

** rime missing from text

(Ma & Tai 1956: 36,40,47)

5.2 Plausibility of aspirated liquid spirantization in crosslinguistic perspective

Given the utility of the spirantization account in explaining the patterns of liquid palatalization in Qiándōng and the lack of aspirated liquid laterals in the modern dialects, it is an attractive possibility for an origin of the fricative aspiration distinction. However, the question of plausibility of course arises with this account. Spirantization of an aspirated liquid to a lateral fricative with the aspiration distinction maintained intact has seemingly not been attested anywhere else (Jacques 2011).

Spirantization of other aspirated sonorants with retention of aspiration distinction has been reported in two other cases (Jacques 2011:9). Cone Tibetan is one. Modern Cone Tibetan has [s^hè], ‘coarse’, coming from Old Tibetan *hral*, probably pronounced [r^h] in Old Tibetan. This initial segment has no known common origin in Old Tibetan. However, unaspirated /s/ in Cone Tibetan arose from the clusters *sr-* and *spr-* in Old Tibetan; for instance, ‘cloud’ is [s^hĩ] in Cone Tibetan and *sprin* in Old Tibetan. Thus, at least for ‘coarse’, the existing aspiration contrast in Cone Tibetan postalveolar fricatives is the result of a spirantization of an aspirated rhotic element with retention of the aspiration distinction.

The other case is in the development of Chiquihuitlán Mazatec from Proto-Mazatec. Kirk (1966:95) reconstructs *j^h and *s^h as Proto-Mazatec phonemes, but Jacques (2011:10) believes this to be in error. Out of the twelve dialects in his study, only Chiquihuitlán Mazatec has /j^h/ synchronically, the remainder having /h/. Moreover, a Chiquihuitlán Mazatec dictionary antedating Kirk (1966) transcribes <jy-> for Kirk’s (1966) /j^h/. This suggests a pronunciation of [j^h] or perhaps [h^j] or [x^j] rather than [j^h], suggesting transcription error

in the prior documents may have led Kirk's (1966) analysis astray. Jacques (2011:10) suggests that if the original phoneme was in fact **j^h*, then the Chiquihuitlán Mazatec reflex is explicable as a spirantization and the other reflexes as loss of the palatal gesture, in effect, the loss of all but the aspiration.

5.3 Concluding remarks on the evolution of *Qiándōng* laterals

In summary, the spirantization of aspirated liquid laterals is posited here as the origin of the aspiration distinction in lateral fricatives in *Qiándōng*. Doing so both accounts for the lack of aspirated liquid laterals in modern dialects and allows for a simple diachronic explanation of the palatalization distinction in laterals. Moreover, evidence from Tibetan and Mazatec exists that aspirated sonorants can spirantize and retain the aspiration distinction, so this analysis is in accordance with known typological facts about sound change.

6. Conclusion

Three separate pathways have been posited in this paper for the origin of aspiration distinctions in various fricatives in *Qiándōng*. Alveolar and palatal aspirated fricatives are the result of a chain shift. Labiodental aspirated fricatives are the product of the coarticulation of gestures in palatalized labial stops. Finally, aspirated lateral fricatives originate from a spirantization of aspirated liquid laterals. The first of these had already been suggested by Wang (1979), but the pathway reconstructed for labiodentals had heretofore only been found in a Middle Chinese reconstruction, and the spirantization of aspirated liquids as an origin for a spirant aspiration distinction is a new finding.

6.1 Dialects with aberrant reflexes

The three dialects with affricate reflexes for prenasalized affricate PQH consonants bear discussion at this point. In section 3's Table 1, *Tàiyōng* is listed as having affricate reflexes in series 7 and 8 instead of the expected fricatives. In *Jǐnpíng* and *Sānsuì*, the series of import predominantly is Table 1's series 5, composed largely of alveolar unaspirated fricative reflexes (Carveth 2012:69).

Tàiyōng also has no aspirated alveolar or palatal fricatives. One might thus be tempted to surmise that the prenasalized affricates only reduced to oral affricates, and given that we have interpreted the chain shift as a push chain, there was no impetus for the unaspirated fricatives to aspirate. However, the *Tàiyōng* reflexes of unaspirated prenasalized affricates in series 5 and 6 are unaspirated fricatives. It is as though only the unaspirated prenasalized affricates fully reduced.

Jǐnpíng and *Sānsuì* present their own difficulties. In these dialects, the reflex of **nts* is *ts-*, and the reflex of merged **s/*nts^h* is *s-*. As in *Tàiyōng*, the possibility again rears its head that the shift may not be completed in these dialects, at least in alveolars, with the prenasalized affricates reducing only to oral affricates and not inducing further changes. This would imply that the two dialects' fricative reflexes in Table 1's series 7 stem purely from PQH **s*. Given the cursory nature of Ma & Tai's (1956) original study, this could indeed be the case; they may simply not have had adequate data to establish a contrast between *Jǐnpíng* and *Sānsuì* reflexes of PQH **s* and **nts^h*. However, unlike the alveolars, the palatals in *Jǐnpíng* and *Sānsuì* behave typically for *Qiándōng* and clearly take part in the chain shift normally.

No clear answers seem forthcoming on the behaviors of these three dialects, and more detailed data may be necessary to solve this puzzle. Nonetheless, the chain shift analysis accounts so well for all other dialects that it suffices to leave these dialects' particularities to future research.

6.2 A note on teleology

At first glance, an explanation in which multiple forces produce the same end result, aspirated fricatives, might seem all too convenient, even teleological. However, crosslinguistically it is not that strange. A variety of effects have been known to shape whole phonological systems in a similar way.

One such effect of note is that phonological systems tend towards symmetry (Hock 1986:152). This is likely an attempt at economization, in that symmetrical systems allow for the highest ratio of distinctions to features. In the case of *Qiándōng*, it may well be that once aspirated spirants became established in the language, converting other contrasts into aspiration distinctions in fricatives created a more efficient system. Thus, some of the changes discussed in this article may have been in part motivated by the neurological tendency to self-organize and simplify.

Also relevant is the notion, discussed in section 2, that the aspirated fricative is an areal feature for the Indochinese region. Areal tendencies may also have pushed the system to develop aspirated fricatives, with the symmetry motivation becoming a factor once some such developments were already in progress.

Hock (1986:165) discusses several ‘conspiracy’ changes, such as those in Pali and Slavic, where multiple effects seem to have acted irregularly to create a regular change to syllable structures from the sum of their effects. While these cases are clearly different than what has happened in Qiándōng, as the changes in this paper are themselves regular and do not involve syllable structure, they are notable in that they show system-wide motivations for change. He writes, “Cases like these seem to require the assumption that at a certain point the results of various ‘tactical decisions’ along the way may build up enough ‘critical mass’ to establish a clear goal for further changes,” (1986:165). In Qiándōng, the areal tendencies and symmetry motivations alone, or in tandem with some of the changes already beginning, may have provided the ‘critical mass’ of which Hock speaks to initiate a shift towards aspiration in fricatives as a system-wide distinction. In any case, the question of teleology is surmountable.

6.3 Potential directions for future research

Future research could continue in several directions. As far as aspirated fricatives are concerned, a phonetic study to determine their exact articulatory nature would help in ascertaining what phonetic factors might play into their diachronic development. So far, the only language for which such a study has been conducted is Korean (Kim et al 2011). In Korean, tense unaspirated alveolar fricatives contrast with lax aspirated ones, and the study concluded that the contrast in Korean was in fact a fortis/lenis distinction in tenseness. The tense/lax contrast, widespread in Korean, is not present in other languages with aspirated fricatives, making Kim et al’s (2011) conclusions’ crosslinguistic applicability unclear. An articulatory study on a language possessing a more prototypical aspiration contrast in fricatives would be highly useful in understanding the sounds’ production, which would inform future phonetic and phonological work.

With regard to Hmong-Mien historical phonology, further refinement of reconstructions of Proto-Qiándōng-Hmongic and Pre-Qiándōng protolanguages could help shed light on the findings of this paper. Reconstructions of other branches of Hmongic would be useful as a comparison for this paper’s findings on Qiándōng. There is still some disagreement on the exact substructure of the Hmong-Mien family tree, and a clearer delineation of branch arrangements and boundaries may be a prerequisite for further subfamilial reconstructions (Carveth 2012, Ratliff 2010). Finally, reconstructive work on Qiándōng vowels and phonetic tone values would clarify Qiándōng’s past sound changes.

Further reconstructive work on Qiándōng will likely require more and better fieldwork data on its dialects. In particular, the three dialects discussed in section 6.1 are prime targets for field linguistics. However, the sheer scarcity of Qiándōng vocabulary in Ma & Tai (1956) and Purnell (1970) makes any increase in the depth of data on these dialects invaluable.

Regardless of the approach chosen, there is clearly much work to be done. Nonetheless, the study of Qiándōng’s aspirated fricatives has the potential to pay dividends in our understanding of phonetics, phonology, sound change, and Hmong-Mien language history.

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