

PHONETIC NOTES ON SOME SIAMESE CONSONANTS

Jimmy G. Harris

For the past three years I have had the good fortune to work with over sixty Thai university teachers in basic phonetic research on their own Standard Thai idiolects. This research was conducted in classes on General Articulatory Phonetics which I have been teaching five hours a week for periods of eighteen weeks. All the teachers were speakers of Standard Thai (Siamese); this is the dialect under consideration in this paper. The basic data for this paper arose from the keen observations of the teachers concerning the production of the Siamese consonants in their individual idiolects. I wish to take this opportunity to thank each of my students for what insights I have into Thai phonetics. Any mistakes in this paper are, of course, my own and not those of my students.

My overall approach to phonetics has been to follow the English phonetic tradition of not rigidly separating phonetics from phonology. In describing the phonetic processes involved in the production of Thai consonants I have used the traditional method based on that of Pike (1943) and Abercrombie (1967). In this paper I have found it necessary to distinguish three styles of speech: *first*, a very slow, careful tempo of speech; *second*, a moderate tempo of speech; and *third*, a fast tempo of speech. Unless otherwise stated, all the phonetic statements will refer to sounds produced in a moderate tempo of speech.

Although the main features of Siamese phonetics have been known for some years, a more careful survey of the literature reveals a surprisingly large number of divergent descriptions of some Siamese consonants. The Siamese syllable initial consonant sounds represented by the symbol ฦ have been described as frontal palatal (Kruatrachue, 1960); palatalized apical dental (Thaweesomboon, 1969); palato-alveolar (Richards, 1966); and voiced palatal (Fowler and Israsena, 1952). I have not observed any of these pronunciations of ฦ either in Siamese or in other Thai dialects. In fact, the description of Siamese ฦ as a palatal stop or affricate is misleading. Palatal stops do occur in some Southeast Asian language, e.g. Yao, but I have not observed them in Siamese. Perhaps the authors e.g. (Abramson, 1962) who have used the term palatal have intended it to mean prepalatal or alveolo-palatal without stating such as the case. It is hoped that this paper, based on work with a large number of informants, will help to clarify some of these practical phonetic problems that scholars are confronted with in the literature.

VOICELESS ASPIRATED STOPS AND AFFRICATES

All aspirated stops and affricates occur only syllable initially in Siamese and are produced with pulmonic egressive airstream mechanisms. In the production of Siamese aspirated stops and affricates, the articulation is usually lax and is followed by fairly heavy aspiration.

In fast sloppy speech, the aspirated stops and affricates sometimes lose their stricture of complete closure and become glottal fricatives. A voiced glottal fricative ɦ occurs between vowels and voiceless glottal fricative h elsewhere. e.g.

ditɕ ^h án	—————→	díhán
I (female speaker)		
k ^h ɔ̃:ŋ k ^h rai	—————→	hónŋ k ^h ai
Whose is it ?		
t ^h a:ŋ ní:	—————→	haŋ ní :
This way.		

The following table shows the voiceless aspirated stops and affricates and their phonetic variants.

Table # 1 Voiceless Aspirated Stops and Affricates

A. Passive articulator(s)	lip	teeth & gumridge	gumridge	back of gumridge	soft palate	soft palate & lip
B. Active articulator(s)	lip	tip & blade	tip	blade	back of tongue	back of tongue & lip
C. Secondary articulators						lips
D. Name summarizing (A), (B), and (C)	bi-labial	denti-alveolar	apico-alveolar	alveolo-palatal	dorso-velar	labialized dorso-velar
E. Phonetic Symbol(s)	p ^h		t ^h	tɕ ^h	k ^h	k ^h _w
F. Phonetic Variants		t ^h	t ^h _ɿ	ɕ	kx ^h	k ^h _w x ^h , f ɸ

p^h represents a voiceless aspirated bilabial stop. For all of the informants this appears to be the only pronunciation that commonly occurs. This sound occurs only syllable initially in Siamese.

$p^h\dot{y}$: "ghost, spirit"

t^h represents a voiceless aspirated apico-alveolar stop. This sound occurs only syllable initially in Siamese. This is the most common pronunciation before all vowels except close front vowels.

$t^h\dot{a}:m$ "to ask"

t^h a voiceless aspirated denti-alveolar stop. This is the common pronunciation before close front vowels.

$t^h\dot{j}$: "time"

t^h a voiceless aspirated apico-dental stop. This pronunciation is very rare and was observed in the speech of only one speaker before close front vowels.

$t^h\dot{i}$: "time"

$t\phi^h$ represents a voiceless aspirated alveolo-palatal affricate. This sound is made with the blade of the tongue forming a stricture of complete closure just behind the gumridge. There is no lip rounding. In this paper alveolo-palatal is the same as lamino-prepalatal. All alveolo-palatal sounds could be described as lamino-prepalatals. This sound occurs only syllable initially in Siamese.

$t\phi^h\dot{a}:m$ "bowl"

ϕ a voiceless alveolo-palatal fricative. This is a very rare variant that occurred initially in a few words in the speech of only three of the more than sixty informants.

$\phi i\eta m\dot{a}i$ "Chiengmai"

k^h represents a voiceless aspirated dorso-velar stop. This sound occurs only syllable initially in Siamese.

$k^h\dot{a}$: "to kill"

kx^h a voiceless aspirated dorso-velar affricate. This pronunciation is common initially in emphatic speech.

$kx^h\dot{a}$: "to kill"

k^h_w represents a voiceless aspirated dorso-velar labialized stop. This sound occurs only syllable initially in Siamese.

$k^h_w\dot{a}$: "right (side)"

k_x^h a voiceless aspirated dorso-velar labialized affricate. This is a common pronunciation initially in emphatic speech.

$k_x^h\breve{a}$: "right (side)"

f a voiceless labio-dental fricative. This is a common variant pronunciation in the speech of some speakers. It is considered low class pronunciation by most educated Siamese speakers.

$f\breve{a}$: "right (side)"

ɸ a voiceless labio-dental velarized fricative. This is an occasional variant pronunciation in the speech of some speakers. This pronunciation is considered low class speech by educated Siamese speakers.

$\phi\breve{a}$: "right (side)"

VOICELESS GLOTTALIZED STOPS AND AFFRICATES

Siamese voiceless glottalized stops and affricates are pronounced with simultaneous oral and glottal closures. The release of the oral and glottal closure is usually simultaneous, so that the glottal release is not heard. These sounds are all produced with pulmonic egressive air-stream mechanisms. They are not ejectives since the upward movement of the larynx is too slight to change the pressure of the air in the mouth and pharynx sufficiently to produce an ejective. Catford (1939) has described these type sounds as *glottalized pulmonic pressure stops and affricates* and ejectives are described as *glottalic pressure stops and affricates*.

In the production of Siamese glottalized stops and affricates the articulation is usually quite tense with a firm closure between the active and passive articulators. In the release phase of these consonants there is usually a clear sharp onset of the following vowel.

In fast sloppy speech voiceless glottalized stops and affricates sometimes become nasals. e.g.

$t^h\text{am } \text{ʔ}\text{en } b\breve{a}$: —————→ $t^h\text{ammen } b\breve{a}$: (or) $t^h\text{am}\text{̃} b\breve{a}$:
(He) does it like crazy.

$di:m\breve{u}\text{̃}\text{ə}n\text{ʔ}kan$ —————→ $di \cdot m\breve{u}\text{̃}\text{ə}n\eta an$

One might just as well

$\text{ʔ}ka:nb\breve{a}:n$ —————→ $\eta anb\breve{a}:n$

Housework, homework.

Voiceless stops, p, t, k, ʔ, in Siamese on a few rare occasions have been observed to have a slight nasal release in utterance final position. In this case the glottal closure is released simultaneously with the velic closure thus allowing a small amount of air to pass out through the nasal cavity just before the oral closure is released. This can be indicated p^m, tⁿ, k^ŋ, ʔ^h in a narrow phonetic transcription.

The following table illustrates the voiceless glottalized stops and affricates of Siamese and their common variants. All of the voiceless glottalized stops and affricates except ʔ have simultaneous oral and glottal closures. This can be indicated as follows ʔp, ʔt, ʔc, ʔk, ʔk_w, etc. in a narrow phonetic transcription.

Table # 2 Voiceless Glottalized Stops and Affricates

A. Passive articulator (s)	lip	teeth & gum-ridge	gum-ridge	teeth & gum-ridge	back of gum-ridge	soft palate	soft palate & lip	vocal cord
B. Active articulator (s)	lip	tip & blade	tip	tip & blade	blade	back of tongue	back of tongue & lip	vocal cord
C. Secondary articulators		back of tongue & soft palate		front of tongue & hard palate			lips	
D. Name summarizing (A), (B), and (C)	bila-bial	vela-rized denti-alveo-lar	apico-alveo-lar	palatal-ized denti-alveo-lar	alveolo-palatal	dorso-velar	labial-ized dorso-velar	glottal (stop)
E. Phonetic Symbols	p		t		tɕ	k	k _w	ʔ
F. Phonetic Variants		ɸ, t̚, t̚ ⁿ		t̚ ^j	c ^h			

p represents a voiceless unaspirated bilabial glottalized stop. This sound occurs both syllable initially and finally in Siamese.

pâ: "aunt"
ʔâ:p "to bathe"

t represents a voiceless unaspirated apico-alveolar glottalized stop. This sound occurs both syllable initially and finally in Siamese.

ta: "eye"
ʔâ:t "might, may"

t̚ a voiceless unaspirated denti-alveolar glottalized velarized stop. This is the most common pronunciation syllable initially before close front vowels. The tongue is flat and spread during this pronunciation.

t̚i: "to hit"

t̚ a voiceless unaspirated denti-alveolar glottalized stop. This is the most common pronunciation syllable finally after close front vowels.

mi:t̚ "knife"

t̚̚ a voiceless unaspirated apico-dental glottalized velarized stop. This rare sound was observed in the speech of only two informants as an occasional variant before close front vowels.

t̚̚i: "to hit"

tɕ represents a voiceless unaspirated alveolo-palatal glottalized affricate. The fricative release of this sound usually is quite short in duration and not very perceptible. This sound only occurs syllable initially in Siamese. This is a very common pronunciation.

tɕa:n "dish"

c- a voiceless unaspirated alveolo-palatal glottalized stop. This is a common pronunciation. This sound only occurs syllable initially in Siamese.

c-a:n "dish"

t̚ʲ a voiceless unaspirated denti-alveolar palatalized stop. This pronunciation is quite rare but was observed in the speech of one informant. This sound only occurs syllable initially in Siamese.

t̚ʲa:n "dish"

k represents a voiceless unaspirated dorso-velar glottalized stop. This sound occurs both syllable initially and finally in Siamese.

ka:	"a crow"
mâ:k	"a lot, very"
ke:	"to be twisted"

$\frac{k}{w}$ represents a voiceless unaspirated dorso-velar glottalized labialized stop. This sound occurs only syllable initially in Siamese.

$\frac{k}{w}$ a:ŋ	"deer"
-------------------	--------

ʔ represents a glottal stop. This sound occurs both syllable initially and finally in Siamese. In fast sloppy speech glottal stop tends to disappear everywhere except utterance initially and finally.

ʔò:k	"to go out"
tóʔ	"table"

VOICED STOPS AND APPROXIMANTS

Voiced stops and approximants occur only syllable initially in Siamese. Utterance initial voiced stops and approximants are usually preceded by weak glottal closures. These pre-glottalized sounds can be written ʔb, ʔd, ʔj, and ʔw in a narrow phonetic transcription. Siamese voiced stops and approximants are fully voiced in all phases of their articulation. I have not observed implosives in Siamese similar to the ɓ and ɗ so commonly observed in Vietnamese. Siamese voiced stops and approximants are produced with pulmonic egressive airstream mechanisms. In fast sloppy speech the voiced stop b sometimes becomes a nasal. e.g.

k^hǝ: bâaŋ —————→ k^hǝ: mâŋ

Let me have some.

kin bamì: —————→ kinmamì:

Eat Chinese egg noodles.

The voiced stops of Siamese are sometimes preceded by homorganic syllabic nasals in fast sloppy speech. e.g.

t^ham̥p̥bâ:

(He) does it like crazy.

Table # 3 Voiced Stops and Approximants

A. Passive articulator (s)	lip	teeth & gumridge	gum-ridge	back of gumridge	hard palate	soft palate & lip
B. Active articulator (s)	lip	tip & blade	tip	blade	front	back of tongue & lip
C. Secondary articulators						
D. Name summarizing (A), (B), and (C)	bilabial	denti-alveolar	apico-alveolar	alveolo-palatal	fronto-palatal	labio-velar
E. Phonetic Symbol (s)	b		d		j	w
F. Phonetic Variant (s)		ɸ	ɖ	dz	ʝ	ɰ

b represents a voiced bilabial stop. This sound only occurs syllable initially in Siamese.

bò:k "to tell to"

d represents a voiced apico-alveolar stop. This sound only occurs syllable initially in Siamese.

da:u "star"

ɸ a voiced denti-alveolar stop. This is the common pronunciation syllable initially before close front vowels.

ɸi: "good"

ɖ a voiced apico-dental stop. This is a very rare variant before close front vowels. This sound occurs only syllable initially in Siamese.

ɖi: "good"

j represents a voiced fronto-palatal approximant. This sound occurs syllable initially in Siamese.

jûŋ "busy"

ʝ a voiced fronto-palatal fricative. This is a common pronunciation in emphatic speech. This sound only occurs initially in a stressed syllable.

ʝûŋ "busy"

dz a voiced alveolo-palatal affricate. This is an occasional variant pronunciation in emphatic speech. This sound only occurs utterance initially in Siamese.

dzûŋ

“busy”

w represents a voiced labio-velar approximant. This sound occurs syllable initially in Siamese.

wâ:

“to say”

w a voiced labio-velar fricative. This is a common pronunciation in emphatic speech. The friction is not very heavy but is perceptible.

wâ:

“to say”

FRICATIVES

The fricatives *f*, and *s* are usually velarized before close front vowels. The fricative sounds *f*, *s* occur only syllable initially in Siamese except in a few rare cases where they occur finally as variants of *p* and *t* in borrowed words. e.g.

kóp —————→ kóf “golf”
 ʔɔ:fít —————→ ʔɔ:fis “office”

Table # 4 Fricatives

A. Passive articulator(s)	teeth	teeth	teeth & gumridge	gumridge	vocal cord
B. Active articulator(s)	lip	blade	tip & blade	blade	vocal cord
C. Secondary articulator					
D. Name summarizing (A), (B), and (C)	labio-dental	lamino-dental	denti-alveolar	lamino-alveolar	glottal (fricative)
E. Phonetic Symbol(s)	f			s	h
F. Phonetic Variants	ɸ	θ, ɬ	ʃ	ʂ	ɦ, ɦ̃, ɦ̄

f represents a voiceless labio-dental fricative. This sound occurs syllable initially.

fá: "sky"

ɸ a voiceless labio-dental velarized fricative. This sound occurs only syllable initially usually before close front vowels.

ɸĩ: "a boil"

s represents a voiceless lamino-alveolar grooved fricative. This sound occurs syllable initially.

sũəi "pretty"

θ a voiceless lamino-dental flat fricative. This sound occurs only syllable initially. This variant pronunciation was common in the speech of only four speakers.

θũəi "pretty"

ɬ a voiceless lamino-dental grooved fricative. This sound occurs only syllable initially. This variant pronunciation is very rare and was observed in the speech of only one speaker.

ɬũəi "pretty"

ʂ a voiceless denti-alveolar grooved fricative. This variant pronunciation is rare and was observed in the speech of only a few speakers before close front vowels.

ʂi: "four"

ʂ a voiceless lamino-alveolar velarized grooved fricative. This is the common variant pronunciation syllable initially before close front vowels in emphatic speech.

ʂi: "four"

h represents a voiceless glottal fricative. This sound occurs syllable initially in Siamese.

híəu "to bully"

ɦ a voiced glottal fricative. This sound occurs only between vowels as a variant pronunciation.

ʔaɦǎ:n "food"

- \tilde{h} a voiceless nasalized glottal fricative. This sound occurs only syllable initially in Siamese. This sound occurred in the pronunciation of the Siamese word for "five" in the speech of all the informants but one. For a few speakers it is the most common variant of h and occurs everywhere.

$\tilde{h}\tilde{a}^A$ "five"

- \tilde{h} a voiced nasalized glottal fricative. This sound occurs only as a variant pronunciation between vowels.

$ʔa\tilde{h}\tilde{a}^{\check{v}}:n$ "food"

NASALS AND LATERALS

Laterals in Siamese are fully voiced except after aspirated stops where they are devoiced. A devoiced lateral can be transcribed ɭ in a narrow phonetic transcription. e.g.

$k^h\text{ɭ}^{\check{v}}:ŋ$ "canal"

When a lateral is the second member of an initial cluster it is usually deleted in fast speech. e.g.

$pl\grave{a}:u$ —————→ $p\grave{a}:u$
"empty"

Sometimes a lateral that occurs syllable initially becomes a nasal in the fast speech of some informants.

$t\grave{o}k\ loŋ\ ma:$ —————→ $t\grave{o}k\ noŋ\ ma:$
(It) fell down.

Laterals occur only syllable initially in Siamese except in a few borrowed words and in a form of Thai classical folk singing ($\text{u}^{\check{v}}\text{in}$) in which all final denti-alveolar or alveolar nasals become laterals.

pen —————→ pel
"to be"

All nasals are fully voiced in Siamese. Nasals occur both syllable initially and finally in Siamese. In articulating syllable initial nasals the soft palate is lowered simultaneously with the closure in the mouth or at the lips. On the release of the mouth or lip closure the soft palate is not immediately raised to a complete closure so that some air escapes through the nose during the articulation of the following vowel resulting in slight nasalization of the vowel. e.g.

nâ:m "water"

In Siamese nasals are usually short after long vowels and long after short vowels. e.g.

t^ham: "to do, make"
t^hǎ:m "to ask"

Syllabic nasals occur in fast speech in Siamese.

mǔæn pen bâ: —————→ mǔænmbâ:
(It's) just exactly like it.

Table # 5 Nasals and Laterals

A. Passive articulator(s)	lip	teeth & gumridge	gumridge		soft palate
B. Active articulator(s)	lip	tip & blade	tip		back of tongue
C. Secondary articulators					
D. Name summarizing (A), (B), and (C)	bilabial	denti-alveolar	apico-alveolar		dorso-velar
E. Phonetic Symbol(s)	m		n	l	ŋ
F. Phonetic Variant(s)		ŋ̣, ḷ	ṇ̣	ḷ̣	

m represents a voiced bilabial nasal. This sound occurs both syllable initially and finally in Siamese. For all the informants this appears to be the only pronunciation that commonly occurs.

ma:	"to come"
t ^h am	"to do, make"

n represents a voiced apico-alveolar nasal. This sound occurs both syllable initially and finally in Siamese.

na:	"rice paddy"
ʔà:n	"to read"

ɲ a voiced denti-alveolar nasal. This is the common pronunciation before close front vowels. This sound occurs both syllable initially and finally in Siamese.

ɲǐ:	"escape"
biɲ	"to fly"

ɲ̥ a voiced apico-dental nasal. This is a very rare variant pronunciation before close front vowels.

ɲ̥ǐ:	"escape"
------	----------

ŋ represents a voiced dorso-velar nasal. This sound occurs both syllable initially and finally in Siamese. For all the informants this appears to be the only pronunciation that commonly occurs.

ŋu:	"snake"
ba:ŋ	"some"

l represents a voiced apico-alveolar clear lateral. This sound is always non-velarized.

lò:	"handsome"
-----	------------

l̥ a voiced denti-alveolar clear lateral. This is the common pronunciation before close front vowels.

l̥iŋ	"monkey"
------	----------

- ! a voiceless apico-alveolar clear lateral. This devoiced lateral occurs only after aspirated stops p^h and k^h.

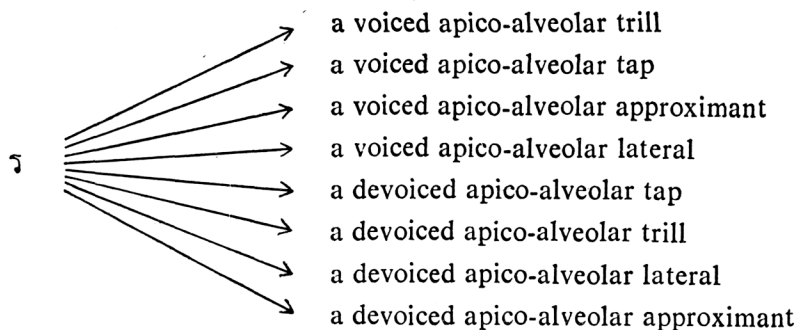
ph_!ɔ:i "precious stone"

- ! a voiceless denti-alveolar clear lateral. This devoiced lateral occurs only after aspirated stops p^h and k^h and before close front vowels.

ph_!lɪk "to turn over"

TAPS AND TRILLS

The sounds represented by the syllable initial symbol ɽ in Siamese are quite diverse. The following diagram illustrates the wide variety of variant pronunciations.



When a sound represented by ɽ is the second member of an initial consonant cluster it usually is deleted in fast speech. e.g.

k^hɽai → k^hai
Who?

- r represents a voiced apico-alveolar tap. This is a common pronunciation. This sound only occurs syllable initially in Siamese.

rɔ:n "hot"

- l represents a voiced apico-alveolar lateral. This is a common pronunciation. This sound only occurs syllable initially in Siamese.

lɔ:n "hot"

- r a voiced apico-alveolar trill. This is a rare pronunciation. It usually only occurs in the slow over-precise speech of some informants. This sound only occurs syllable initially in Siamese.

rɔːn

“hot”

- ɹ a voiced apico-alveolar approximant. This is a very rare pronunciation and only occurs in the speech of a few speakers who are also fluent in English. This sound only occurs syllable initially in Siamese.

ɹɔːn

“hot”

The devoiced variant pronunciations only occur after aspirated p^h and k^h initially as the second member of a consonant cluster. The devoiced apico-alveolar tap ɾ̥ is the most common pronunciation. The devoiced apico-alveolar lateral l̥ is the second most common pronunciation. All other devoiced variant pronunciations are rare.