

The Simplification Of Complex Onsets In Khmer Loanwords In Thai : Obstruent_obstruent Sequence

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ABSTRACT

The recent study is to find out how Thai simplify the consonant clusters or complex onsets in Khmer loanwords in Thai. The data for analysis were collected from the previous studies which related to Khmer loanwords in Thai. About 480 tokens with complex onsets were selected. Most of them are still in use the present Thai. The study was done within the framework phonology. Of those items collected, only complex onsets with the sequence of obstruent and obstruent (obs_obs) were selected to analyze. In Khmer language, the complex onsets are of 88 pairs, and Thai has 13 complex onsets. The result of the study was revealed that among 88 complex onsets of Khmer were about 60 attested with Khmer loanwords into Thai language. From 60 complex onsets, 27 are in the sequence of obs_obs. They are not in Thai phonotactics. So they were simplified to conform to the Thai phonotactic. The simplification was done by segment deletion, segment insertion or featural change. An active insertion segment is an epenthesis. Most featural change is always from unaspirated stop to aspirated stop. The study also found that the deletion was not popular to simplify the complex onsets of these kin. The simplification did not systematically take place to all kind of complex onsets. The complex onset pd, for example, had mapped to pha-d, pra-d, or ra-d. It could be said that most of Khmer complex onsets were simplified in different ways to conform to the Thai phonotactics. The findings could help language learners find their way to understand Khmer language, especially in pronunciation of Khmer words.

Keywords : complex onset, simplify, simplification, adaptation, phonotactics.

1. Introduction

Cambodia and Thailand are countries on the mainland of South-East Asia right in the middle of the Indo-Chinese Peninsula. The two countries have jointed-border of approximately

800 kilometers long, stretching along the provinces of the lower Northeast from UbonRatchathani of Thailand and PreahVihear of Cambodia to Trat province of Thailand and

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Koh Kong of Cambodia. This long border could be symbolic of the long history of relations between the Khmer and the Thai. The relationship was dated from before the founding of the Sukhothai kingdom in the thirteenth century. Loanwords are often a good indication of social relations in history.

Historically, as the result of long-time contact between Khmer and Thai, apart from its language, Thai culture has many distinctive features, but a significant part of it, including statecraft and the Hindu-inspired royal cult, along with much of its art, architecture, music and dance, has been adapted from Khmer

prototypes following the defeat of Angkor by Thai armies in the fifteen century. The Thai script and a portion of its vocabulary have also borrowed from the Khmer. It has thus come as no surprise to find that in Bangkok there is a massive scale model of Angkor Wat right next to the Temple of Emerald Buddha – the Thai kingdom's Royal Chapel and one of its holiest sites (Michael. 2003 : 37).

The motivation of the influence might begin firstly at about the 10th century, starting from Khmer to Thai, then from Thai to Khmer around the 16th century (Saveros. 2003: 259).

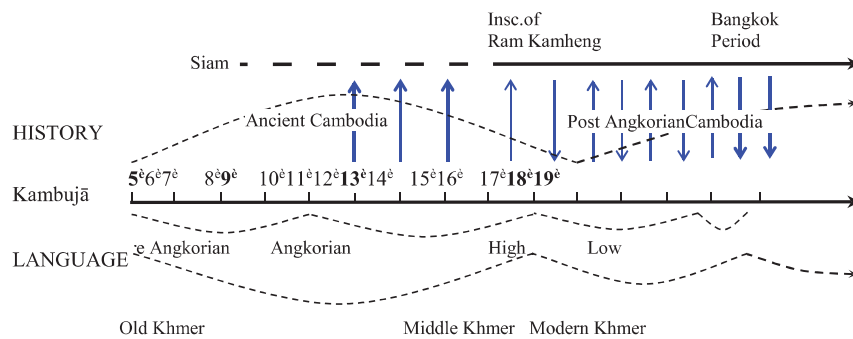


Figure 1 :Comparative chart of Kambojā and Siam (Adapted from Saveros. 2003 : 259)

The large numbers of Khmer words which were borrowed by Thai indicate generally good neighborly relations between two natives (Uraisi. 1984 : 22).

From a linguistic contact, thousands of Khmer words were borrowed and around hundreds of Thai words were also borrowed into Khmer language. The recent study put the investigation on the Khmer loanwords, where-

as the Thai loanwords in Khmer may keep the room for future study.

Khmer loanwords in Thai have become its prominence since more than five decades ago. The themes of the previous studies were significantly on: 1) the description on the influx of Khmer words into Thai language, 2) Categorizing the loanwords according to language usage, and 3) some history backgrounds between Khmer and Thai. In later times, the scope of the studies moved to another step

to the area of linguistics, such as phonology, morphology, syntax, and semantics.

Uraisi (1984) and Premin (1996) had put their investigation to the phonological adaptation. However, their works addressed the phenomenon adaptation on the overall view.

In terms of phonological change, Uraisi (1984 : 70-71) claims that the changing took place in loanword could be from the difficulty of articulation in the recipient language. It may briefly be in four phonological aspects:

1. Initial consonant cluster initiated by fricative/s-/, as s, sk, st, sd, sp, sb, sl, sn, sn, sn, sm, sj, sv, sretc. These clusters, in the borrowing process, could be inserted by /a/, as in:

	Khmer		Thai		Gloss
(a)	/sɲoun/	ស្នូន	/sàŋnǎn/	สงวน	to care for

2. The /a/ which always occurs the consonant cluster initiated by dental consonant /l-/ will be replaced by /a/ in Thai language. For example:

	Khmer		Thai		Gloss
(a)	/lʔɑ:/	ល្អ	/láʔɑ:/	ลือ	good, nice

3. Consonant cluster begins in aspirated consonant or consonant cluster followed by fricative /h/, 1). the /a/ will be added or 2). the affricative /h/ will be replaced by /r/ followed by /a/.

	Khmer		Thai		Gloss
(a)	/khca:j/	ខ្ពស់	/kràca:j/	กระจาย	to scatter
			/khàca:j/	ขจาย	

Uraisi's work could be considered as the first study, which provided a broad picture of loanword adaptation. Throughout her whole work, the author tried to explain the phonetic changes within the loanwords basing on generative phonology.

2. Methodology

Basing on the result of previous work, the recent study is extended to more deeply into phonetic adaptation. It is to find out

how complex onsets were treated in the environment of Thai grammar. The scope of the study was limited phonetic adaptation of obstruent complex onsets in the sequence of Obstruent_Obstruent (hereafter, obs_obs). The study was not focused on investigation or discussion on the origins of the words, since the matter had been studied more enough in the academic works in the previous time (Kanchana. 1959; Banjob. 1983; Uraisi. 1984; Kantanyu. 2000 and others).

The data are secondary data which were collected from previous studies. Although there are many thousands of Khmer loanwords in Thai, the tokens were limited only the words with complex onsets of obs_obs. Thus, about 110 words were selected from 485 words, initiated by complex onsets.

Each word to analyze is transcribed by IPA followed by Khmer orthography in Khmer dictionary by Institute of Buddhist (hereafter IB) (1967) based in Phnom Penh, Thai orthography by Thai dictionary by Royal Institute of Thailand (hereafter RIT) (1999).

3. Khmer And Thai Phonotactics

Since the topic is around the phonological theme, some relevant issues should be addressed to pave way for the following analysis in the next section.

Languages differ along the dimension of complexity of syllable margins (Kager. 1999 : 95). In native Thai words, the complex onset, which is a kind of syllable margins, is very limited. Since the syllable structure of a language may be more complex than the

other, syllable structure adjustments need to be made within loanword adaptation. From this restriction, some complex onsets have been modified or adapted. The segment deletion, segment insertion, and featural changes are simple examples of this adaptation. That is, some clusters were broken up via epenthesis or the like and some cluster components were deleted, so as to conform to phonotactics of the recipient language.

Thai has a much simpler syllable structure than Khmer. There are approximately 80-88 initial consonant clusters (complex onsets) in Khmer, but only 11 in Thai. The richness of complex onsets in Khmer, comparing with Thai, is a hard work for the Thai grammar to adapt those absent complex onsets to fit the Thai syllable pattern. From wordlist, there are approximately 60 clusters attested with Khmer loanwords in Thai. From first glance, a few of these segments might be unchanged and many of those encountered the adaptation.

In the phonological inventory, Khmer has 17 consonant phonemes and Thai has 21 consonant phonemes, table 1 and 2 respectively.

	Bilabial		Alveolar		Palatal	Velar	Glottal
Plosive	p	b	t	d	c	k	ʔ
Nasal	m		n		ɲ	ŋ	
Fricative				s			h
Trill			r				
Lateral			l				
Approximant		w			j		

Table 1. Thai Consonant Phonemes (Adapted from Prom Moal. 2006 : 29)

Consonant	Labial	Labial dental	Alveolar	Palatal	Velar	Glottal
Voiceless	p.		t.	c.	k.	ʔ.
PlosiveVoiceless	ph.		th.	ch.	kh.	
Voiced	b.		d.			
Nasal	m.		n.		ŋ.	
Liquid			l.			
Lateral			r.			
Fricative		f.	s.			h.
Approximant	w.			j.	(w)	

Table 2. Thai Consonant Phonemes (Adapted from Kanchana. 2551 : 147)

While in Thai language, each aspirated consonant is considered as a phoneme, this kind of consonant is considered as a combination of two consonant phonemes, plosive and fricative. Above the minimal pair analysis, Khmer has its especial property of word formation. From this processing, an infix could break aspirated consonant in Khmer. Thus aspirated consonant in Khmer is not a phoneme (Henderson. 1952 : 162 cf. Jacob. 1993 : 47; Uraisi. 1984 : 46; Prakorb. 1987;

Karnchana. 1981 : 56; PrumMoal. 2006 : 30).

In terms of syllable margins, each consonant of the two languages could stand in simplex onset position. But in the position of complex onset, Thai permits two consonants in the onset position of the syllable, where the first one must be an obstruent, followed by an approximant/l r w/, voiceless stops and approximants can occur in the second position of the cluster. Table 1

C _m C _t	P	ph	t	th	k	kh
l	pl	phl	--	--	kl	khl
r	pr	phr	tr	thr ³²	kr	chr
W	--	--	--	--	kw	khw

Table 3. Thai Onset Clusters (adapted from Panlay. 1997cf.Apichai. 2008: 63)

From table 1, Thai complex onsets are strictly only 12. They must be rising in sonority. The sonority hierarchy, ranking the segments from least to most sonorous, is as follows (Barbara. 2000 : 217) : stop + glide; stop +

liquid and fricative + liquid.

Khmer complex onsets are approximately 80-89 in which around 32 constituted by obstruent + obstruent sequence (schematically obs_obs). Table 2 illustrated this combination

³² A few word begin with cluster thr, as: thrutsādi : ทฤษฎี 'theory', can thra: จันทรา 'moon', รุทธรา ฟ้า นก ล้วน ยิง นัน (RIT. 1999 : 960). However, Li (1977 : 4) does not cite this cluster.

$C_i \backslash C_m$	p	b	t	d	c	k	ʔ	s	h
p	-	-	+	+	+	+	+	+	+
b	-	-	-	-	-	-	-	-	-
t	+	+	-	-	-	+	+	-	+
d	-	-	-	-	-	-	-	-	-
c	+	+	-	+	-	+	+	-	+
k	+	+	+	+	-	-	+	+	+
ʔ	-	-	-	-	-	-	-	-	-
s	+	+	+	+	-	+	+	-	-
h	-	-	-	-	-	-	-	-	-

Table 4. Obstruent + Obstruent

From table 4, the complex onsets in the sequence of the obs_obs are 32 clusters. Among these sequences four consonants, b d h : 3, are not found in the first position in the complex onset. From the data of the words collected from previous studies, 28³³ of obs_obs from 32 complex onsets above were attested with Khmer loanwords in Thai. All of these sequences were adapted, since they are not allowed in Thai phonotactics. They are forbidden in Thai grammar. How, then, have they been adapted?

It is that Khmer and Thai both allow more than one consonant in a row. So we find words like ple ‘to translate’, with two-consonant sequence. However, Thai has no many sequences that Khmer has. The words in Thai which begin in the cluster must be in the sequence as shown in table 3. In Thai, Khmer words

with complex onsets as the sequences from table 4 would have the same ‘feel’ to it as bnknick has in English : the sounds are all acceptable in the language but their organization is wrong. In fact, when borrowing words from another language, any consonant sequences had been altered to fit the Thai pattern: Khmer khca:j becomes khaca:j. The kh + c sequence is not possible in Thai.

4. Complex Onset Adaptation

The following sections will discuss the adaptations within the following scopes: 1). p + t, d, c, k, ʔ, s, h; 2). c + p, b, d, k, h; 3). t + p, b, k, h; 4). k + p, b, t, d, ʔ, s, h; and 5). s + p, b, t, d, k, ʔ. However, according to the limitation of the length, not all kinds of adaptation to all sequences of obs_obs are discussed, only some brief points of adaptation will be dealt. Both words, adaptation and

³³ Appendix of this article.

simplification, are used interchangeably in this study.

4.1 The adaptation of Complex Onset p + obs

Among the sequence of p + obs in Khmer language, the p + obs, pd, pc, pk, pʔ, ps, ph had attested with Khmer loanwords in Thai.

From those sequences, in here p + obs is discussed.

The sequence of p + obs is marked in Thai phonotactics, thus it is forbidden. Thus, it is one of the reasons that makes this sequence yielded in various forms. The following examples illustrate this adaptation.

	Khmer		Thai		Gloss
(1)	a. pdaəm	ផ្ដើម	pradə:m ³⁴	ประเดิม	to start, begin
	b. pdœŋ	ផ្ដឹង	pradiəŋ	ประเดี๋ยง ³⁵	to complaint
	c. pdo:c ³⁶	ប្ដូរ	pra dùt	ประดูจ	to compare

From the example (1), the pd was adapted by inserted two segments, -ra-. Another form of p + obs shows in example (2).

	Khmer		Thai		Gloss
(2)	a. pdœŋ	ផ្ដឹង	phadiəŋ	เผด็จียง	to complaint
	b. pdac	ផ្ដាច់	pha dèt	เผด็จ	to cut off
	c. pdaəm	ផ្ដើម	phadə:m	เผด็จิม	to start, begin

The p + obs in (2) was adapted to pha d. Two cases were found, an insertion of epenthesis a and featural change. We notice that all Khmer words in (2) are monosyllabic. They have been adapted into bi-syllable word in the loan context.

Each word had been separated into two syllables by a vowel epenthesis [a] and plosive p of initial segment formerly was non-aspirated became an aspirated.

The mapping of p + obs could be illustrated as followings schemata:

Input	pd	or	p	d
Output	p h a d		p h a d	

³⁴ In this study, the first syllable in Thai words with [a] epenthesis is transcribed without ̀ or ̂, since the presence of these tones in the first syllable has no contrast. For example, pradə̀:md and prad̂ə:md conveys the same meaning of “to start, to begin”

³⁵ Old Thai.

³⁶ In Khmer Dictionary (1967), this word is not found. It is usually used as an unofficial word. Literarily, the word is prɑ̀ do:c i.e. not pdo:c. If it was the form in the ancient time, then modified to prɑ̀ do:c in the modern Khmer, hence Thai, in hypotheses, borrowed this word from modern Khmer.

There are two assumptions in the output form: 1). the unaspirated stop p maps to the aspirated stop phor it could

This phenomenon was not generally occurred to all pd sequent. Besides

be said that [-asp] maps [+asp]. 2). the insertion of [a] epenthesis leads to change the feature of stop p.

surfacing as above illustration, the pinp- dlikely surfaced as [r], as shown in (3).

	Khmer		Thai		Gloss
(3) a.	pd ³⁷	ផ្ទុំ	radum	ระดม	to assemble

Thep_dsequence underwent the [a] epenthesis insertion and p was altered as r, thus radum. Then what to discuss in here is the occurrence of r, p r. In terms of feature, p is obstruent, whereas ther is sonorant.

Before starting to discuss on this alternation, it is worthto put an investigation onto two assumptions, sound change and linguistic interaction. In this sense, was this alternation from sound change or from cross-linguistic?

The former is that the pin pd surfaces as ph, then from ph to r. This second step occurred within Thai language. The second assumption is that p in pd took the change directly to r.

The relation between Khmer and Thai has not just begun one or two centuries, but it has been started nearly a thousand years ago. Khmer loanwords that come into Thai at time of contact might not

stay the same form. Some scholars propose that loanword is a fossil of the language. This prediction could be wrong to the Khmer loanwords in Thai or may be to other loanwords of the world, since words are in use. This leads to the change, phonetically change.

The p to ph mapping could be the best way for the first assumption. Best way to make sure this prediction is from RIT (1999). Although some words have labeled as an old word³⁸, it could give some guide on this issue. From this cue, pdhas been mostly mapped as pha d. Thus we could predict that pd from above examples could be adapted aspha d, then this sequence had been changed to ra din the latter time within the Thai language. However, the result of this investigation reveals that there is no other form, i.e. pha d, of pd found in RIT. Consequently, we could assume that the

³⁷The wordpd³⁷is derived fromdommeaning 'to unite, to group; collective' (Bl. 1967 : 316). In this case the prefix pmeaning 'to cause' is added to the root word dom.

³⁸คำโบราณ

mapping pd tord might be from the Khmer directly. Firstly, we could put our attention on the available form of rdin Thai phonotactics. Although a number of Thai words in the form of ra_d are

foreign loanwords, it could help us to the assumption that this syllable pattern is permitted in Thai phonotactics. Items in (4), for example, could be used to support this claim.

	Thai	Gloss
(4) (a).	ra dáp ระดับ	level, grade
(b).	radian ระเบิด	rope for clinging monk's robe
(c).	ra du: ระดู	Menses

However, there from items in (4) has not been from pd. In this case, the obstruent p of the pd lost its feature as obstruent to coronal.

The schemata of rdom 1 rdom are as follows:

Input	p	d	o	m	
Output	r	a	d	o	m

The r could not directly precede the voice stop d. Hence, the grammar needs the epenthesis a comes in between.

4.2 The adaptation of Complex Onset c + obs

From selecting loanwords, the sequence of c + obs which had attested with Khmer loanwords are cp, cb, cd, ck, and ch, as shown in (5).

	Khmer	Thai	Gloss
(5) a.	chaot ชาติ	chò:t	โหด stupid
b.	chpwn ปลาย	ta phian	ตะเพียน kind of fish ³⁹
c.	chpuoh เฉพาะ	cha phǎw?	เฉพาะ toward, specify
d.	chkəok ปลาย	ta kòk	ตะโกก kind of fish
e.	chdɔo ปลาย	cha do:	ชะโด kind of fish ⁴⁰
f.	cbap ฎบ	cha bàp	ฉบับ law, rule
g.	cbah ชัด	cha màt	ชัด clear; extreme

³⁹ Puntius sp.

⁴⁰ Kind of large fish (Ophicephalus micropeltes (ophicephalidae)).

From (5), we selected the sequence of c_bto discuss. Other sequences were briefly listed their adaptations at the end of the discussion.

The cbwas broken by an epenthesis, see (5f). In terms of a distinctive feature, from the affection, c, non-aspirated stop, was changed to ch, aspirated stop.

Input	a. c b	b. c b
Output	ch a b	ch a b

The absent of c_obs in Thai phonotactics leads this sequence mapped in a number of forms. The segment deletion was not found, but segment insertion, a, and featural change, c1ch ,c1t (5b, 5d).

4.3 The adaptation of Complex Onset t + p, b, k, h

Among the sequence oft+ obs in Khmer language, the tp, tb, tk, th had attested with Khmer loanwords in Thai.

		Khmer		Thai		Gloss
(6)	a.	thpi: ⁴¹	ផ្កែ	thabian	ทะเบียน	enrollment
	b.	thkaəŋ	ក្តឹង	thakə:ŋ	เอกิง	excellent, noble
	c.	tbeŋ	តែង	ta bɛ:ŋ	ตะแบง	kind of tree ⁴²
	d.	tbo:ŋ	តូង	thabuan	ทบวง	head
	e.	them	តែម	thɛ:m	แถม	to add
	f.	rɛa:t tba:t	រាតត្បាត	rabà:t	ระบาค	to spread

4.4 The adaptation of Complex Onset k + p, b, c, t, d, ʔ, s, h

From selecting loanwords, the sequence of k + obs which had attested with

Khmer loanwords are kp, kb, kc, kt, kd, kʔ, ks, kh. The following discussions investigatesome adaptation that took place in some of k + obs.

The adaptation of Complex Onsetkhc- kh-

		Khmer		Thai		Gloss
(7)	(a).	khca:j	ខ្ពាយ	khaca:j	ขจาย	to scatter
				khaja:j	ขยาย	
	(b).	khcɔ: khca:j	ខ្ពះខ្ពាយ	khacɔ:nkhaca:j	ขจรขจาย	spread
	(c).	khcej	ខ្ពើ	kha ci:	ขจี	young, new

⁴¹ No longer used in Modern Khmer. The word was derived from a verb ter(present Khmer) by inserting an infix -p-, thus tpirorthpir, referred to what were listed together in a long list (Uraisi. 1987 : 168).

⁴² Dipterocarpusintricatus Dyer "Dipterocarpaceael."

The adaptation of Complex Onsetkht-

kht→kr-

	Khmer		Thai		Gloss
(8) a.	khtɔp	ក្រប	krathóp	กระทบ	to crash against to effect
b.	khtwum	ក្រើម	krathiam	กระเทียม	onion, garlic
c.	khtɔ:m	ក្រអូម	krathôm	กระท่อม	hut, cotound
d.	khti:ŋ	ក្រពិញ	krathiŋ	กระทิง	wild cow
e.	khtɛ̌ah	ក្រះ	kratháʔ	กระทะ	frying pan
f.	khtɔp	ក្រប	krathóp	กระทบ	to crash against to effect

kht→s-

Khmer and Thai have borrowed heavy words from India, Pali and Sanskrit. Phonetically, Pali and Sanskrit have some

kh	—	s
ស៊ីក្កា sekkha:		ស៊ីក្កា seksa:
ភិក្ខុ phikkho		ភិក្ខុ phi so
រក្ខា rakha:	រក្ខា raksa:	

phonological differences in some words, namely kh and s.

From point of view, we will not put our consideration to this difference. We would draw some attention this variation between Khmer and Thai. The

above phenomenon doesn't only take place in Pali - Sanskrit, but it's also found in Khmer loanwords in Thai.

	Khmer		Thai		Gloss
(9) a.	khtɔ:	ក្រ	sathó:n	สะท้อน	resound
b.	khtea:	ក្រ	sathá:n	สะท้อน	to shiver,

From (9), kh and t mapped to s and th respectively. However, we will address the alternation within kht to s.

The adaptation of Complex Onsetkd-

The sequence of kdmapped to many forms as follows:

kd→kr

		Khmer		Thai		Gloss
(10)	a.	kda:	ក្ដា	krada:n	กระดาน	board, plank
	b.	kdəŋ	ក្ដង	krado:ŋ	กระโดง	sail
	c.	kdəʔ	ក្ដក់	kradɔʔ	กระเดาะ	to click with tongue

Complex onset of items in (12) is a sequence of voiceless obstruent + voiced obstruent, kd, is forbidden in Thai. Thai phonotactics blocked this sequence from coming to the language, so kd underwent the adaptation. The strategy that Thai

Input	k	d	a:	r ⁴³
Output	k	r	a	d a: n

From the scheme, kd has been broken up by ra insertion. In terms of syllable, one syllable in Khmer altered to two syllables in Thai, since there are two nuclei in this new form, the aof kra and thea: of da: .⁴⁴ That is Khmer one-syllable word had changed into Thai

might have employed to solve is to epenthesis. In this case, from (12), the k in the sequence of k_dhas mapped to kra d. The schemata ofkrada:nare as follows:

two-syllable word. The sequence of stop k and liquid r (krcluster) is legal in Thai. The insertion of ra violates the faithfulness constraint. The constraint states that there is not inserted any segment in the output.

The adaptation of Complex Onsetkb-

kb→kh-

		Khmer		Thai		Gloss
(11)	(a).	kbo:	ក្បូរ	khabu:n	ขบู่	artistic decoration

⁴³ In modern Khmer, the underlying form of r does not occur in the surface form, it is deleted. In here we do not discuss about this.

⁴⁴ Owing to our discussion here focuses only on the complex onset, the alternation from open syllable -da: to close syllable -da:n is beyond our scope.

The word ឃ្មុន is found in Thai dictionary (1999 : 168). However, it is not generally known by Thai speakers. The sequence of kb is a combination which kb-→kr-

absent in Thai phonotactics. It was broken by epenthesis and the segment k was changed to khor it could be said the [-aspirated] mapped to [+aspirated].

Now let's consider the alternation of kb. Item in (11) illustrates this alternation.

	Khmer		Thai		Gloss
(12) (a).	kben ក្បែរ		krabe:n กระเบน		hem of the sampot
(b).	kbo: ក្បូន		krabuan กระบวน		artistic decoration
(c).	kbanj ក្បាំង		krabanj กระบัง		diadem, shield

In a similar vein, kb had mapped as the kd was. It altered to kra d. That is it

took raepenthesis.

The adaptation of Complex Onset kʔ

kʔ-→ t-

	Khmer		Thai		Gloss
(13) (a).	kʔɛp ក្បែរ		ta khà:p ตะขาบ		centipede

In this section, kʔ mapped to t. In RIT (1999 : 441), a word kra ʔɛp is found. The assumption of this alternation is that at the first time of borrowing, kʔɛp may undergo adaptation as kra ʔɛp. From its

time usage, kra ʔɛp had another adaptation. That is from kramapped to tota. That is, this adaptation happened within Thai language in the later time.

kʔ-→ k-, kr-

	Khmer		Thai		Gloss
(14) (a).	kʔɑ:m ក្បែរ		ka ʔɑ:m กะออม		clay pot
		or	kra ʔɑ:m กระออม		

It is like a test to find the best form of the word. The wordka ʔɔ:m was adapted as many forms, กะอ่อม น. ภาชนะสานด้วยไม้ไผ่ ยาชัน รูปคล้ายกระบุง ไม่มีคอใช้ใส่น้ำ, กระอ่อม, กัลอ่อม, หรือ กะละอ่อม ก็ว่า (RIT.

4.5 The adaptation of Complex Onset s + p, b, t, d, k, ʔ

From selecting loanwords, the sequ-

	Khmer		Thai		Gloss
(15) a.	sbaj	ស្បៃ	sabaj	สไบ	cheesecloth
b.	spea:n	ស្ពាន	sapha:n	สะพาน	bridge
c.	sdeŋ	ស្តេង	sade:ŋ	แสดง	to manifest, perform
d.	skat	កាត់	sakàt	สกัด	to intercept, obstruct
e.	sʔa:t	ស្អាត	sa ʔà:t	สะอาด	clean, neat, proper
f.	sʔoh	ស្អុះ	ra ʔùʔ	ระอุ	hot and oppressive

The adaptation to the sequence of s+ obs is the insertion, the changing of the feature of consonants. As things happened to the other sequence, the insertion is always an epenthesis a. From (15), all words were broken by epenthesis a. For featural change, the s in (15f) had changed to [r], fricative – trill.

Conclusion

The absence of obs_obs sequence in Thai phonotactics, grammar had to work hard in the presence of this sequence in Thai language via Khmer loanwords. Obs_obs underwent adaptation. The solutions are as follows.

1999 : 100). Finally, two forms had been selected, ka ʔɔ:m and kra ʔɔ:m. However, its usage is narrow. That is, a few Thai speakers know this word.

ence of s + obs which had attested with Khmer loanwords aresp, sb, st, sd, sk, sʔ.

First of all, the grammar choosethe epenthesis. The epenthesisais the most favor over r. The insertion of segment in some sequences caused some first segment of complex onset alter its feature. Many Khmer first consonant in obs_obs isunaspirated stop. They were adapted to aspirated consonant.

From the form of adaptation, Thai grammar preferredboth, segment insertion and featural change, over segment deletion. A popular segment insertion is an epenthesis a and non-aspirated consonants were mostly deviated to aspirated consonants. However, the solution on these means did not generally or

systematically take place with a kind of sequence. The complex onset sʔ, for example, was adapted as saʔ andra ʔ, as in saʔatandra ʔuʔ, respectively.

Suggestions

1. In terms of complex onset, Khmer loanwords in Thai were not limited in only the sequence of obs_obs, there are still rooms for further researches, as obs_sonorant, sonorant_obstruent, and sonorant_sonorant.

2. In this article, the study was shed the light on how obs_obs was adapted in the environment of Thai grammar within the general framework of phonetic adaptation. Thus, in the coming research should be extended by using any specific theory for picturing on how adaptation was and other aspects of the loanword.

3. Thai is a tonal language. Further studies should put the investigation on how the language put the tone to the foreign words, loanwords?

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