TONAL EVOLUTION IN SUAI (KUAY)

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1. Introduction

Suai, a Mon-Khmer language spoken in Surin, Srisaket, Burirum, Ubon and other nearby provinces, has two dialects, Kuy and Kuay. Suai (Kuy-Kuay) is generally known as a register language with two lexically contrastive phonation types, clear (normal or modal) voice versus breathy voice.

Register (also called register complex) refers to clusters of linguistic features working together as a combination of phonation type (or voice quality), pitch, voicing of the initial consonant, vowel length, vowel quality and so on. The register complex affects the whole syllable not just the vowel (Premsrirat 1997). Normally, one or two features of the register complex becomes more prominent in one language.

2. Theoretical Background

Haudricourt (1954) described the mechanism of tonal development in Vietnamese. Subsequent support for Haudricourt's theory of tonal development in Mon-khmer languages has been provided through such languages as Samtao (Diffloth 1982), Nyahkur (L. Thongkum 1982) and Khmu (Premsrirat 1997). Matisoff (1973) explained the theory of tonogenesis in Southeast Asian languages that because of a historical process of consonant devoicing, formerly initial voiced stops turned into voiceless ones. There are two sets of voiceless initial stops. The old voiceless stop and the old voiced consonant initials yielded different sets of tones. Haudricourt (1954) suggested that from a situation of no tones in Vietnamese the tones historically developed from pitch adjustments associated with different classes of codas at the end of the syllable. L. Thongkum (1989) in her acoustic measurements of register complex in Kuy and Sukkasame

(1994) in his study of Kuay pointed out that both phonation type and pitch seem equally prominent. The syllable with clear voice always carries higher pitch than the syllable with breathy one. The initial consonant causes the pitch height while the final one causes the contour.

Brown (1965) analyzing the tonal systems of Lao Ubon and Lao Suai (spoken in Surin and Srisaket) claims that there are six tones in Lao Ubon and five tones in Loa Suai. From my auditory impression as well as my native intuition, I observe that the phonetic characteristics of pitch patterns in Kuay are very similar to tones in Lao Ubon and Lao Suai. Historically and geographically Kuay, Lao Ubon and Loa Suai settle together and have been in continuous contact with each other. The language they use in contact is usually Lao which seems to be prestigious so the evolution of tones in Kuay may be due to the influence of these two groups of Lao.

3. Scope

The analyses of pitch patterns in two Kuay dialects and the tonal systems of two Lao dialects are based on:

1. Kuay, Samrong Village, Chompra district, Surin (KS),

2. Kuay, Uthumporn Village, Uthumpornpisai district, Srisaket (KU),

3. Lao Suai, Nongkap Village, Chompra district, Surin(LS), and

4. Lao Ubon, Jaeramae Village, Muang district, Ubon (LU).

4. Methodology

I. Measure the pitch ranges.The results of the acoustic measurements of pitch in 16 syllable types of Kuy dialect made by L. Thongkum (1989) are referred to in this paper. Two Kuay dialects were studied by using the same set of syllable types as L.Thongkum (1989):

1. Live syllables CVN

1.1 Short live syllables CV̌N
1.2 Long Live syllables CVV(N)

2. Dead Syllables   CVŠ

2.1 Short Dead syllables CV̌S

2.2 Long Dead syllables   C V V S

2.3 Short Dead syllables with glottal stop ending   C V̌?

2.4 Long Dead syllables with glottal stop ending   C V V?

3. Syllables with glottal fricative ending   CVh

3.1 Short syllables with glottal fricative ending (-h final short syllables)   CV̌ h

3.2 Long syllables with glottal fricative ending (-h final long syllables) C V V h

II.   Analyze the tonal systems of Lao Ubon and Lao Suai by using the checklist of William J. Gedney (1972) for determining tones in Tai dialects

III   Make a comparison of Kuay pitch patterns to tones in Lao

5. A Brief Sketch of Kuay and Lao Phonology

Initial consonants								Final consonants					
p	ph	t	th	c	ch	k	kh	?	p	t	***c	k	?
b		d							m	n		ŋ	
**f		s					h		w	*l		j	
m		n		ɲ		ŋ							
w		l		j									

Monophthongs

i	ii		ɯ	ɯɯ	u	uu
e	ee		ɤ	ɤɤ	o	oo
ɛ	ɛɛ		ʌ	ʌʌ	ɔ	ɔɔ
æ	ææ		a	aa	*ɒ	*ɒɒ

Diphthongs   ia   ɯa   ua

* occur in Kuay only   ** occur in Lao Ubon only
*** phonetically [i?]

6. Pitch Patterns in Kuay

According to the co-occurrence with the syllable structures and the registers, Kuay has 6 pitch patterns

Pattern 1: low-rising pitch

Occurring with breathy voice (register 2), this pitch pattern has 2 sub-types;

Sub-type 1a which is realized as [25(4)] starts at a mid-low pitch then rises to a high pitch before slightly falling at the end. It occurs in h-final long syllables (CVVh) such as

[ph̭aah$^{25(4)}$] 'salt'   [mṵəh$^{25(4)}$] 'mosquito'

Sub-type 1b [13] starts at a low pitch then abruptly rises to a mid pitch. It occurs in short dead syllables (CVS), h-final short syllables (CV̆h) and ʔ–final short syllables (CV̆ʔ) such as

[m̭at^{13}] 'eye'   [təph̭at^{13}] 'six'

Pattern 2: low-rising-falling pitch

This pattern also occurs with breathy voice. Phonetically, it is a low slightly rising and falling pitch [121] occurring in live syllables (CVN) such as

[kh̭al^{121}] 'plough'   [th̭ii^{121}] 'high'

Pattern 3: high-falling pitch

This pattern occurs with clear voice (register 1). It starts at a high pitch and rises slightly then abruptly falls to a low pitch [451]. It occurs in live syllables (CVN) such as

[khal^{451}] 'basin'   [tii^{451}] 'old'

Pattern 4: high level pitch

This pattern also occurs with clear voice and has 2 sub- types;

Sub-type 4a a high level pitch with slightly falling at the end [44$^{(3)}$] occurs in h-final long syllables (CVVh) such as

[paah^{55}] 'to break apart'   [tənɔɔh$^{44(3)}$] 'mouth'

Sub-type 4b a high level pitch [55] occurs in short dead and h-final short syllables (CVS, CV̆h, CV̆ʔ) such as

[pat⁵⁵] 'west'   [pih⁵⁵] 'full'

Pattern 5: low level pitch

This pattern occurs with breathy voice and has two sub-types:

Sub-type 5a starts at a low pitch and remains level then abruptly falls with glottalized ending [22ʔ]. It occurs in CVVʔ and CVViʔ syllable types such as

[thṳu ²⁵ʔ] 'boat'   [laːiʔ²⁵ʔ] 'grasshopper'

Sub-type 5b starts at the same point as sub-type 5a but without glottalized ending [22]. It occurs in long dead syllables (CVVS) such as

[phṳṳɯt²²] 'big'   [niət²²] 'dry'.

Pattern 6: high rising pitch

This pattern occurs with clear voice and has 2 sub-types:

Sub-type 6a a high rising pitch with glottalized ending [45ʔ], occurs in (CVVʔ) and CVViʔ syllable types such as

[taa ⁴⁵ʔ] 'iron'   [ŋaːi⁴⁵ʔ] 'to drink'

Sub-type 6b a high rising pitch [45] occurs in a long dead syllable (CVVS) such as

[phɯɯɯt ⁴⁵] 'bright yellow'   [peet⁴⁵] 'knife'

Figure 1: Pitch Patterns in Kuay

Pitch Patterns	Phonetic Features	Phonation Types	Syllable Types
1 Low Rising			
1a	25(4)	breathy	C V V h
1b	13	breathy	CV̌S,C V̌h,CV̌ʔ
2 Low Falling	121	breathy	C V N
3 High Falling	451	cle: ˙	C V N

Pitch Patterns	Phonetic Features	Phonation Types	Syllable Types
4 High Level			
4a	44(3)	clear	C V V h
4b	55	clear	CV̌S,CV̌h,CV̌ʔ
5 Low Level			
5a	22 ʔ	breathy	CVVʔ,CVViʔ
5b	22	breathy	CVVS
6 HighRising			
6a	45 ʔ	clear	CVVʔ, CVViʔ
6b	45	clear	CVVS

7. Tones or just pitch patterns

In Central Thai and many Thai or Tai dialects, a glottal stop [-ʔ] which phonetically occurs in a long syllable (CVVʔ) is not phonologically regarded as final consonant but a part of tone, then the syllable becomes open (CVV^{Tʔ}). In Vietnamese the tone "Ngã" is phonetically accompanied by the rasping voice quality occasioned by tense glottal stricture. In careful speech such syllables are sometimes interrupted completely by a glottal stop (Thompson 1965 cited in Edmonson 1998:1) but it is also regarded as a part of tone. By this method of analysis, a syllable with glottal stop ending (CVVʔ and CViʔ) in Kuay can be phonologically determined as an open syllable CVV^{Tʔ} and CVj^{Tʔ} respectively.

An h-final consonant in many dialects is not prominent, causing the syllable to become open with a very slight [-h] final (CVVh >CVV(h)). Phonetically an open syllable in Thai also has a slight [-h] final. For this reason , an [-h] final syllable which tends to become a complete open syllable in the near future is phonologically regarded as an open syllable

Generally, Kuay is regarded as a register language and pitch is not phonemic. But at present both pitch and phonation type are obviously prominent   (L. Thongkum 1989, Sukkasame 1994). In Uthumporn dialect, breathy voice seems

less prominent or even disappears and the pitches which can be heard clearly are becoming distinctive .

If we consider the definition of tone as "distinctive pitch of a syllable of which the function is to distinguish the meaning of one word from another" (Pike 1948) we can phonologically analyze the 6 pitch patterns as 6 tones as follows:

Tones that contrast in live syllables:
Tone1 Low-Rising Tone /phaa^1/ [ph̩aah$^{25(4)}$ ~ phaa^{25}] 'belly'
Tone2 Low-Rising-Falling Tone /phlaa^2/ [phl̩aa^{121}] 'orphan'
Tone3 High-Falling Tone /paa^3/ [paa^{451}] 'a big turtle'
Tone4 High Level Tone /paa^4/ [paah$^{44(3)}$ ~ paa^{44}] 'break apart'
Tone5 Low Level Tone /phaa^5/ [ph̩aaʔ^{22}~phaa^{22ʔ}] 'to wear'
Tone6 High Rising Tone /paa^6/ [paaʔ^{45}~paa^{45ʔ}] 'shoulder'

Tones that contrast in short dead syllables.
Tone1 Low-Rising Tone /phat^1/ [ph̩at^{13}] 'six'
Tone2 High-Level Tone /phat^4/ [phat^{55}] 'to blow'

Tones that contrast in long dead syllables.
Tone5 Low-Level Tone /phɯɯt^5/ [phɯ̩ɯt^{22}] 'big'
Tone6 High Rising Tone /phɯɯt^6/ [phɯɯt^{45}] 'bright yellow'

The differences of these two villages are that the initial voiced stops (b, d) and palatal semivowel (j) of Samrong dialect (abbreviated as KS) occur only with low pitch patterns 1,2,5 accompanied by breathy voice while in Uthumporn dialect (KU) these mentioned initial consonants conversely occur with high pitch patterns 3,4,6 accompanied by clear voice. This can be seen in Figure 2.

Figure 2: The co-occurrence of pitch and initial consonants

Initial Consonants	Pattern 1 , 2, 5		Pattern 3, 4, 6	
	KS	KU	KS	KU
Vd. Stop b,d Semivowel j	+	-	-	+
Fricative s, h Unasp. stop p, t, c, k Glotal stop ?	-	-	+	+
Asp.stop ph, th, ch, kh Sonorants m n ɲ ŋ w l	+	+	+	+

+ = occur   - = not occur

Adapting the chart of William J. Gedney (1972), the co-occurence among pitch patterns, syllable types and initial consonants in Kuay can be shown as in Figure 3.

Figure 3 Kuay pitch patterns illustrated by using the concept of Gedney's tone box.
_____ = The co-occurrence of pitch and initial consonants in Kuay Samrong (KS).
.... = The co-occurrence of pitch and initial consonants in Kuay Uthumporn (KU)
A,B,C = Live Syllables   DL = Long dead syllables
                         DS = Short dead syllables

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Fricative s, h Unasp. stop p, t, c, k Glotal stop ?	-	-	+	+
Asp.stop ph, th, ch, kh Sonorants m n ɲ ŋ w l	+	+	+	+

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                         DS = Short dead syllables

P = Kuay pitch patterns

Current Initials	A	B	C	DL	DS
Asp. ph th ch kh	P 3 [451]	P 4 [44]	P 6 [45ʔ]	P 6 [45]	P 4 [55]
Sonorant w l					
m n ɲ ŋ					
Fricative s h					
Unasp. p t c k					
Glottal stop ʔ					
Vd. stop b d					
j					
Sonorant w l	P 1 [25(4)]	P 2 [121]	P 5 [22ʔ]	P 5 [22]	P 1 [13]
m n ɲ ŋ					
Asp. ph th ch kh					

From the view point of comparative Mon-khmer, the existence of two registers (phonation) in Kuay is the consequence of a historical process of devoicing of the consonants which has turned old Kuay initial voiced stops into voiceless ones. This phenomena caused this language to have two sets of voiceless stops. To avoid being confused in communication while the older set still co-occurs with clear voice, the original phonation type, the other newer set (former voiced stops) has been transferred to a new phonation type that is breathy voice, causing Kuay phonation to split into two types, clear and breathy voice

*paar	>	paar	'to fly'	*baɑh	>	pɑ̤ɑh 'salt'
*tii	>	tii	' old'	*dii	>	tï̤i̤ 'high'

(Peiros 1996)

The unaspirated stops (p, t, c, k) accompanied with breathy voice tend to become aspirated ones (ph, th, ch, kh).

*bɑ̣a   >   pɑ̣ah~phɑ̣ah   'salt'
*dii   >   tị̣i~thị̣i   'high'

At the time one phonation type split into two, there were two different pitch heights, high pitch accompanied with clear voice and lower pitch with breathy one. While the phonation types caused the pitch height, the different types of final consonants resulted different pitch contours. At first, pitch was not a distinctive feature but gradually, it has become more prominent than phonation type. Thus pitch has become contrastive.   This is how the 6 tones developed in Kuay.

	Proto		First stage		Present		Future
'to fly'	*paar	>	paar	>	[paal^{41}]	>	/paal^3/ [paal^{41}]
'salt'	*baɑh	>	pɑ̣ah	>	[pɑ̣ah^{25} $^{(4)}$~ thɑ̣ah^{25} $^{(4)}$]	>	/phaɑ^1/ [phɑ̣a^{25}]
'old'	*tii	>	tii	>	[tii^{41}]	>	/tii^3/ [tii^{41}]
'high'	*dii	>	tị̣i	>	[tị̣i^{121}~ thị̣i^{121}]	>	/thị̣i^2 / [thị̣i^{121}]

8. Tones in Lao Ubon (LU) and Lao Suai (LS)

The tonal system of Lao Ubon is comprised of 6 tones including: high rising, low rising falling, high falling, high level, low falling and mid falling tones.

Lao Suai has 5 tones of the Lao Ubon tones excluding the low rising falling one.

Using the checklist of William J. Gedney (1972) for determining tones in Tai dialects, the co-occurrence among tones, syllable types and initial consonants can be shown in Figure 4.

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Figure 4 The co-occurrence among tones, syllable types and initial consonants

_____ = Both Lao Ubon (LU) and Lao Suai (LS) Tones

. . . . = Lao Ubon (LU) Tones only

Proto tones / Current Initials	A	B	C	DL	DS
Asp. ph th kh	T 1 [25]	T 4 [44]	T 5 [21?]	T 5 [21]	T 1 [13]
Sonorants w l					
m n ɲ ŋ					
Fricatives s h					
Unasp. p t c k	T 2 121]		T 6 [31?]		
Glottal stop ?					
Vd. b d					
Semivowel j					
Asp. ph th kh	T 3 [451]			T 6 [31]	T 4 [33]
Sonorant w l					
m n ɲ ŋ					
Fricative s h					

Phonetically tones in LU, LS and pitch patterns in Kuay are almost identical. The most interesting characteristics are:

1. The low rising falling tone/pitch pattern [121] in the CVN syllable type occurs in Kuay and LU. In LS, this tone merges with tone /451/.

2. The initial consonants b,d and j with /121/ pitch pattern / tone occur in LU and KS whereas in LS and KU, these consonants occur with /451/ tone/pitch pattern. This evidence causes the pitch pattern in KS to be phonetically similar to LU and KU to LS

9. Conclusion

In comparison with Vietnamese which has voice quality in its tonal system (Edmonson 1998), there seems to be no doubt the Kuay pitch patterns can be regarded as tones. Two voice qualities, clear and breathy may be regarded as the properties of tones. Edmonson pointed out that some Vietnamese speakers used voice quality more than others. In my fieldwork, I noticed that KS young speakers used breathy voice less often than adults and that in KU, the pitch patterns seem more prominent than voice quality or phonation type in both adults and children.

Weinreich, Labov and Herzog (1968:188), with one of the seven principles for the study of language change, say that linguistic and social factors are closely interrelated in the development of language change. According to Campbell (1976) the causes of change are divided into two major categories, i.e., the internal and external causes. The internal factors are physical, and psychological explanation as well as naturalness. The external factors comprise social and stylistic variations, expressive and communicative needs, positive and negative social valuation, linguistic play, literacy and mass communication, political decree, size and complexity of the speech community, remedial innovation and language contact.

Weinreich (1953) defines two languages as being in contact if they are used alternately by the same speakers. McMahon (1994: 200) states that bilingualism necessarily means linguistic contact. In contact situations, elements can be transferred from one language to another. Linguistic borrowings and areal linguistics are examples of language contact phenomena. Lehiste (1988) expresses his idea that the heterogenous life situations of a speech community usually lead to bi and multi-lingualism .

Kuay and Lao have been in continuous contact for a long period of time because of their closely settlement. Kuay people are mostly bilingual, Kuay and Lao.

The evolution of tones in Kuay is due to both internal and external factors. For the internal (linguistic) factor, the devoicing of initial consonants caused the two phonation types to have two different pitch heights, high and low. The different

types of final consonants resulted the six pitch patterns which can be reanalyzed as six tones as mentioned. For the external(social) factor, the contact with Lao Suai and Lao Ubon causes the Kuay pitch patterns to be very phonetically similar to the tones of those two languages. The phonetic characteristics of the pitch patterns in Kuay may be transferred from tones in Lao Ubon and Lao Suai.

This study is an example of contact induced phonological change. Language contact can be a cause of sound change and phonological innovations. My findings reflect some causes of sound change that have happened in Mon-Khmer languages. I hope that they will help predict the areal tendencies towards phonological changes taking place in the future.

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