# PHONOLOGICAL VARIATION IN PHUAN


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## Abstract

*The aim of this paper is to present the phonological variation in Phuan, part of the author's research. The Phuan language studied in this research project is spoken in Fay Mun village, Pa Kha sub-district, Tha Wang Pha district, Nan province. The findings show that phonological variation in Phuan occurs in all age-groups. The initial consonants /$p^h$, $t^h$, $k^h$/ have variants [$p^h$-p, $t^h$-t, $k^h$-k-x] respectively. This variation is found mostly in the middle age and the younger groups. The initial consonant /s/ is pronounced as [s], [$c^h$] and [c] while the initial /h/ is pronounced as [h] and [l] in Phuan. These two cases of variation are mostly found in the younger age-group. Concerning the final consonants in Phuan, only one case of variation is found, that is the final consonant /ʔ/ occurring in dead syllables with long vowels (CV:ʔ). It is pronounced as [ʔ] or [k] by all three age-groups but the younger group use the variant [k] more than the other two groups. As for the vowels, it is found that the diphthong /iə/ has three variants [iə, ɨə, ə:] while /uə/ has two variants [uə, o:]. The vowel /ə:/, uniquely found in Phuan, is also in the process of change, i.e. it has two variants: [ə:] and [ay]. The variation in both consonants and vowels has been influenced by Kam Mueang/Nyuan, Standard Thai, and Lue via Kam Mueang/Nyuan loanwords. The tonal variation is another interesting phenomenon in Phuan. There are six tones in Phuan and the research findings show that Tone 1 /Low-Rising/ is pronounced as [Low-Rising] by both elder and middle-age groups but consistently as [Low-Falling] by the younger-age group. The other two tones which seem to have variation, though not as clearly as in the case of Tone 1, is that the younger-age group tends to pronounce Tone 2 /Mid-Rising/ as [Low-Rising] and all three age-groups pronounce Tone 6 /High-Falling with glottalization/ in some lexical items as [Mid Level with glottalization]. The variation of Tone 1 is hypothesized to be induced by an internal factor, i.e. tonal simplification, and the variation of Tones 2 and 6 are influenced by Kam Mueang/Nyuan.*


## Introduction

Chamberlain (1975) classified the Southwestern Tai (henceforth SWT) dialects into two groups on the basis of the initial consonant development, i.e. P group in which the proto-initial voiced stops developed to be unaspirated voiceless stops (*b, *d, *g > p, t, k) and PH group in which the proto-initial voiced stops developed to be aspirated voiceless stops (*b, *d, *g > $p^h$, $t^h$, $k^h$). For example, in the P group, such as Lue, Khün, and Kam Mueang/Nyuan (henceforth Nyuan), the words 'father,' 'pier,' and 'value' are pronounced as [pɔ:], [ta:], and [ka:], respectively, while in the PH group, such as Phuan and Lao, they are [$p^h$ɔ:], [$t^h$a:], and [$k^h$a:].[2] The classification of the SWT dialects is shown in Figure 1.


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[2] Since the lexical items in the Tai dialects presented as the examples are pronounced with different tones, the tone of each example is excluded.

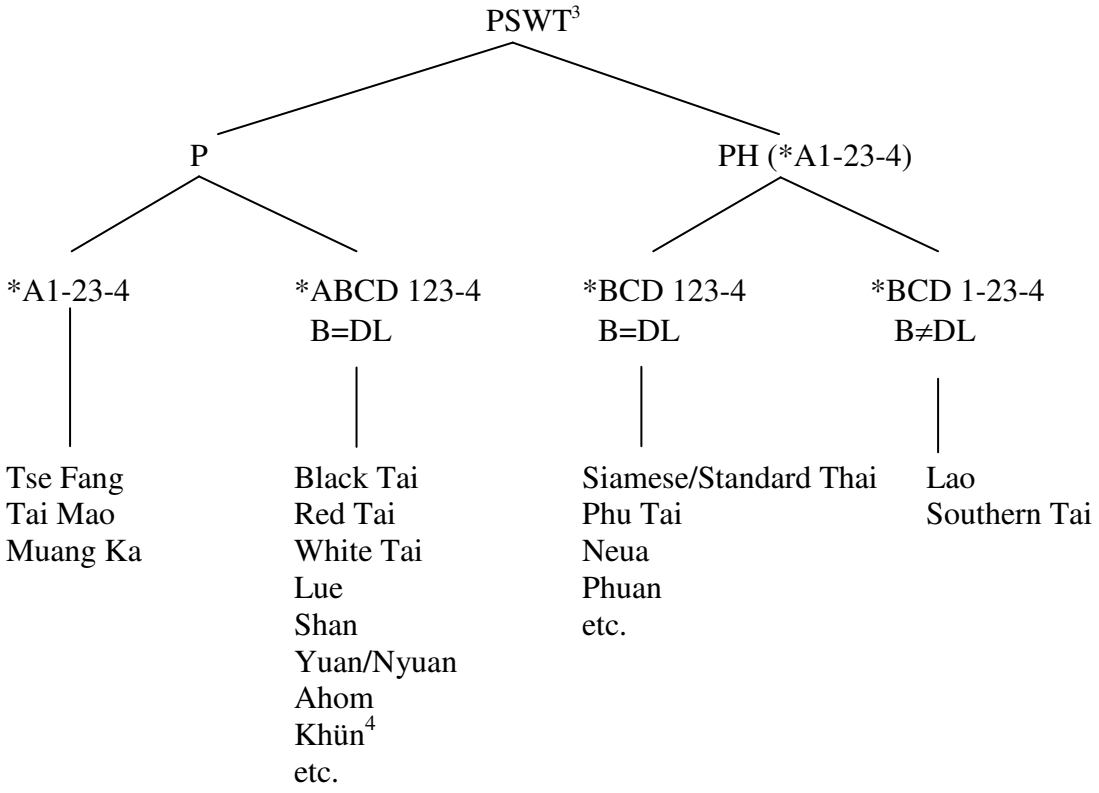



Figure 1: Classification of Southwestern Tai Dialects (adapted from Chamberlain 1975: 50)

[3] PSWT means Proto-Southwestern Tai.

[4] Khün has been classified into the same subgroup as Yuan (or Nyuan in this study) and Lue but it is not included in the figure by Chamberlain (1975: 50). Since Khün is one of the Tai dialects studied in the current research project, the author adds Khün in Figure 1 in order to show the relationship between Khün and the other Tai dialects. A further adjustment is that while Chamberlain uses the language names: *Siamese* and *Yuan* in his figure, the author adds the terms *Standard Thai* and *Nyuan*, respectively.

Figure 1 shows that the SWT dialects in P and PH groups can also be divided into different subgroups based on the pattern of tonal development. Nyuan, Lue, and Khün which are in the P group have the pattern of proto-tone development as *ABCD 123-4[5] and B=DL (i.e. the tones in column *A, *B, *C and *D split into two ways: 123-4 and the tones in Column B merge with the tones in Column DL). Phuan and Lao are in the PH group but they are in different subgroups as they have different patterns of tone development, i.e. Phuan has *BCD 123-4, B=DL pattern but Lao has *BCD 1-23-4, B≠DL. (See details of the tone development in the Tai dialects in Gedney 1972, Chamberlain 1975, and Li 1977).

Considering the relationship between the SWT dialects, Figure 1 shows that Nyuan, Lue, and Khün are closer to each other than to Phuan and Lao. Since Phuan and Lao are in the same PH group, they are closer to each other than to the other three SWT dialects. The relationship between the dialects can be considered as one of the factors which influence language variation and change.

This paper will be focusing on Phuan, spoken in Fay Mun village, Pa Kha sub-district, Tha Wang Pha district in Nan province. There are several ethnonyms of Phuan in the studied area. The people in the area refer to themselves and their language by four different names: *Lao*, *Phuan*, *Lao Phuan*, and *Thai Phuan* while people in other areas, speaking the other SWT dialects (Lue, Khün, and Nyuan), call them *Lao*. Since Nyuan has been used as the lingua franca in the area, Phuan people can, therefore, generally speak Nyuan very fluently. As for Standard Thai, it has been used as the official language. The younger generation of Phuan can speak Standard Thai more fluently than the elder generation since Standard Thai has been used as the medium of instruction at school. In other words, the younger generation has more opportunities to contact with Standard Thai than the elder generation does.

It is generally accepted that language variation and change can be influenced by both internal and external factors. Language contact is an external factor which has an important role for motivating linguistic change. Since Phuan has long been in contact with the other SWT dialects, for example, Lue and Nyuan, as well as Standard Thai, it is interesting to investigate linguistic variation in Phuan. Based on the author's observation while collecting phonological and lexical data of Phuan for the present research project, it is noteworthy that there are a large number of loanwords from Nyuan and Standard Thai and the younger generation seems to use them more frequently than the elder generation. It is plausible to hypothesize that this lexical borrowing might lead to phonological variation and change in Phuan. It is therefore interesting to examine whether or not phonological variation occurs in Phuan and which aspects, i.e. consonants, vowels, or tones, have variation. This paper aims to describe the variation of consonants, vowels, and tones in three generations of Phuan people. In addition, the factors inducing such variation will be discussed and the prediction about a phonological change in Phuan will also be proposed.

[5] The hyphen is normally used to represent the split of the tones, for example, A123-4 means that A1, A2, and A3 share the same tone but different from A4, or B1-234 means that the tone in B1 is different from B2, B3, and B4.

## Linguistic Data

The author's research project aims to investigate the lexical and phonological variation and change in five SWT dialects, Lue, Khün, Phuan, Nyuan, and Lao, spoken in Nan province, an area of language diversity in northern Thailand. The word lists used in this project are divided into three categories, (1) an 800-word list for checking lexical variation and change, (2) a 1,024-word list for checking consonant and vowel variation and change, and (3) a 240-word list for checking tonal variation and change. The data have been collected from language resource persons (henceforth, LRPs) in three different age-groups: elder (60 years old and above), middle (35–50 years old), and younger (15–25 years old). There are a total of 75 LRPs in this project (5 in each age-group X 3 age-groups X 5 SWT dialects). Besides the age-group, the domains of language use are also investigated as factors which induce variation and change. The phonological data are analyzed both auditorily and instrumentally.

The findings presented in this paper are largely from the data analysis of the second and the third word lists as aforementioned. There are also a number of additional data given by each of the 15 Phuan LRPs. The number of each set of initial consonants and vowels analyzed for this paper are listed in Figure 2. Note that some sets of data designed for investigating the variation and change of consonants and vowels in the other SWT dialects in the current research project are not included in Figure 2 because they are not in the scope of this paper. There are a total of 955 lexical items of each LRP which are analyzed for this paper. Besides these, the lexical items which have long dead syllables are selected from the 800-word list of the current research project in order to analyze the variation of final glottal stop /ʔ/.

| **Set 1** | | **Initial Consonants and Vowels** | **Numbers (Total 715)** |
|---|---|---|---|
| 1.1 | | **[$p^h$, $t^h$, $c^h$, $k^h$] : [p, t, c, k] and [s] : [$c^h$]** | Total (361) |
| | 1.1.1 | [$p^h$] : [p] | 52 |
| | 1.1.2 | [$t^h$] : [t] | 72 |
| | 1.1.3 | [$c^h$] : [c], [s] : [$c^h$] | 73 |
| | 1.1.4 | [$k^h$] : [k] | 75 |
| 1.2 | | [h] : [r] : [l] | 89 |
| 1.3 | | **[ɨə, iə, uə] : [əː, eː, oː] and [ɨə] : [iə]** | Total (354) |
| | 1.3.1 | [ɨə] : [əː] and [ɨə] : [iə] | 100 |
| | 1.3.2 | [iə] : [eː] | 106 |
| | 1.3.3 | [uə] : [oː] | 120 |
| 1.4 | | [ay] : [aə] | 28 |
| **Set 2** | | **Tones** | **Numbers (Total 240)** |
| 2.1 | | Tone checklist (adapted from Gedney 1972), designed for auditory analysis | 140 |
| 2.2 | | Tone checklist (analogous set), designed for instrumental analysis | 100 |
| | | **Total** | **955** |

Figure 2: The list of initial consonants, vowels, and tones analyzed for the present paper

In order to get the most accurate data, the lexical items in the two word lists were elicited in random order so that the LRPs were unable to predict which linguistic aspects were being investigated. This methodology was designed to gain the most natural data in each SWT dialect without any biases from the LRPs. The lexical and phonological data were recorded with a Sony ICD-MX20 IC Digital Recorder. For the purpose of dividing the recorded tone data into separate electronic files for analysis by a computerized program, the recorded tone data were transferred into Audacity (Version 1.2.6), a free digital audio editor.[6]

## Data analysis

There are two main sections of data analysis for this paper: the first one is the analysis of the consonants and vowels; the second is the tone analysis. The methodology used in each section of analysis is described in the following sections.

### Consonant and vowel analysis

In order to determine whether or not there is variation of consonants and vowels, the consonants and vowels used by the three age-groups of Phuan LRPs were compared

[6] Audacity is a free program written by a team of volunteer developers around the world. It is an open source software for recording and editing sounds. The version 1.2.6 used in this current research project was downloaded from the website: http://audacity.sourceforge.net/.

to one another and they were also compared to the ones in Standard Thai and the other SWT dialects, i.e. Nyuan, Lue, and Khün. The development of consonants and vowels from Proto-SWT to Phuan and earlier descriptions of Phuan phonology were also taken into account for determining variation. Differences in consonant and vowel use among the three age-groups, and differences from expected consonant and vowel based on the development of Proto-SWT to Phuan, and differences from the earlier studies would constitute evidence of consonant and vowel variation in Phuan. If any consonants and vowels used in any age-group were different from the other age-groups and they were identical to the ones in the other SWT dialects and Standard Thai, it would be concluded that the variation was due to language contact. On the other hand, if contact-induced variation could not be detected, then variation due to internal factors would be hypothesized. Also influencing factors considered were the distances between the Fay Mun village and the village of each SWT dialect, and the opportunities of the Phuan LRPs in this study for exposure to Standard Thai and the other SWT dialects.

An example of consonant analysis for this paper is that if the lexical item for 'elder sibling' is pronounced as both [phi:$^{31}$] and [pi:$^{31}$] by the middle and the elder groups, but only as [pi:$^{31}$] by the younger group, it can be assumed that there is a variation of the initial consonant in Phuan. Based on the classification of SWT dialects as previously mentioned, Phuan is in the PH group (see Figure 1) and the initial consonant expected for this lexical item is an aspirated bilabial stop [p$^{h}$] which is developed from the Proto-SWT consonant *b (see Figure 4). When compared to Standard Thai, Nyuan, Lue, and Khün in each of which the lexical item for 'elder sibling' is respectively pronounced as [phi:$^{42ʔ}$], [pi:$^{31}$], [pi:$^{33}$], and [pi:$^{31}$], it can be hypothesized that the initial variant [p] in Phuan is borrowed from either Nyuan, Lue, or Khün. Furthermore, based on geographical criteria and the opportunities of Phuan LRPs for contacting with each SWT dialect, it may be assumed that the variant [p] in Phuan is borrowed from Nyuan rather than from Lue and Khün. This is because the Fay Mun village is closer to the areas where Nyuan is spoken than to the villages of Lue and Khün. In addition, since Phuan people can speak Nyuan very fluently, it is therefore plausible to conclude that this case of consonant variation is induced by language contact and the donor language is Nyuan.

## Tone analysis

For the tone analysis, two tone checklists were separately analyzed. The total 140 test words adapted from Gedney (1972) were auditorily analyzed so as to observe the pattern of tonal merger and split. The other total 100 test words from the analogous set were also auditorily analyzed to confirm the exact pattern of tonal merger and split, and they were finally analyzed by PRAAT (Version 4.4.19)[7], a computer program, in order to clarify the results of tonal characteristics and to confirm the results of auditory analysis. If necessary, some test words from the first tone checklist were also instrumentally analyzed for any cases

[7] PRAAT (Version 4.4.19) is designed by Paul Boersma and David Weenink, Institute of Phonetic Sciences, University of Amsterdam, The Netherlands (1992–2006).

where some particular tones needed clearer interpretation and/or explanation. The criteria for determining tone variation in this study were the same as those used for determining the variation of consonants and vowels as previously mentioned. The earlier studies on tones in Phuan, the geographical criteria, and the opportunities for coming into contact with Standard Thai and the other SWT dialects would also be considered for determining the causes of tone variation in Phuan.

## Results

## The Phonology of Phuan

To arrive at a clear explanation of initial consonant and vowel variation, it is important to first present the sound system of Phuan. Based on the phonological analysis, it is found that there are 20 single consonants, 2 consonant clusters, 18 monophthongs (i.e. 9 short vowels and their long counterparts), and 2 diphthongs in Phuan, as shown in Figure 3.

| **Single consonants:** | Bilabial | Labio-dental | Alveolar | Palatal | Velar | Glottal |
|---|---|---|---|---|---|---|
| Stop | p | | t [ʈ][8] | c | k | ʔ |
| | $p^h$ | | $t^h$ | | $k^h$ | |
| | b | | d | | | |
| Nasal | m | | n | ɲ | ŋ | |
| Fricative | | f | s | | | h |
| Lateral | | | l | | | |
| Approximant | | w | | y | | |
| **Clusters:** | kw-, $k^h$w- | | | | | |

| **Monophthongs:** | Front | Central | Back |
|---|---|---|---|
| High | i, iː | ɨ, ɨː | u, uː |
| Mid | e, eː | ə, əː | o, oː |
| Low | ɛ, ɛː | a, aː | ɔ, ɔː |
| **Diphthongs:** [9] | iə, uə | | |

Figure 3: The consonant and vowel systems of Phuan

[8] The voiceless alveolar stop /t/ in Phuan is phonetically voiceless retroflex stop [ʈ]. The [t] and [ʈ] pronunciations occur in free variation for some Phuan LRPs, i.e. they can be pronounced interchangeably without changing the meanings of the lexical items.

[9] In some Phuan dialects, spoken in central Thailand, for example, Mueang and Ban Mi districts, Lopburi province and Bang Namchiaw village, Phromburi district, Singburi province studied in Tanyong (1983), there is also the diphthong /ɨə/ (i.e. /ɯa/ in Tanyong 1983).

## Comparison of consonants and vowels in Proto-Tai, Standard Thai, Phuan, and the other SWT dialects

Before describing and discussing the variation of consonants and vowels in Phuan, it is interesting to note that some initial consonants and vowels in Phuan are different from the other SWT dialects. The development of initial consonants and vowels from Proto-Tai, as reconstructed by Li (1977), to Phuan and the other SWT dialects in similar or different ways can be used as the basis for interpreting each case of consonant and vowel variation. Thus, it is important to present the comparison between the initial consonants and vowels in Proto-Tai, Standard Thai, Phuan and the other SWT dialects. Only the consonants and vowels analyzed for this paper are presented in Figure 4. [10]

[10] The Thai alphabet for each consonant phoneme in Standard Thai is also included in order to show the different classes of consonants: ข [$k^h$] which is *ʔàk sɔ̌ːn sŭːŋ* or high class consonant and พ [$p^h$], ท [$t^h$], ค [$k^h$], ช [$c^h$] which are *ʔàk sɔ̌ːn tàm* or low class consonants. Note that *ʔàk sɔ̌ːn klaːŋ* or middle class consonants, for example, ก [k], จ [c], ต [t], ป [p], are not included in Figure 4 since Phuan and the other SWT dialects have no variation in this class of consonants. In other words, these consonants are identically used in Phuan and the other SWT dialects.

| | **Proto-Tai** | **Standard Thai** | **Phuan** | **Lao** | **Nyuan** | **Lue** | **Khün** |
|---|---|---|---|---|---|---|---|
| **Initial Consonants:** | *b- | $p^h$- (พ) | $p^h$- | $p^h$- | p- | p- | p- |
| | *d- | $t^h$- (ท) | $t^h$- | $t^h$- | t- | t- | t- |
| | *g- | $k^h$- (ค) | $k^h$- | $k^h$- | k- | k- | k- |
| | *x- | $k^h$- (ข) | h- | $k^h$- | $k^h$, x- | $k^h$-, x- | $k^h$-, x- |
| | *ɟ- | $c^h$- (ช) | s- | s- | c- | c- | c- |
| | *r- | r- (ร) | h- | h- | h- | h- | h- |
| **Vowels:** | *ue | uə (ัว) | uə | uə | uə | oː | oː |
| | *ɨe | ɨə (เ-ือ) | iə | ɨə | ɨə, iə | əː | əː |
| | *ie | iə (เ-ีย) | iə | iə | iə | eː | eː |
| | *əɨ[11] | ay (ไ-) | əː | aə | ay | ay | ay |

Figure 4: The development of initial consonants and vowels from Proto-Tai to Standard Thai, Phuan and the other SWT dialects

[11] The proto-vowel *əɨ develops into /ay/ in Standard Thai and merged with /ay/ developed from Proto-Tai vowel *ɛi. This is reflected in the present Standard Thai orthography, i.e. there are two different vowel symbols, 'ไ' *(máːy múən)* and 'ใ' *(máːy ma-laːy)* which are pronounced identically as [ay]. Comparative studies of the Tai dialects show that 'ไ' and 'ใ' once represented two separate sounds, *əɨ and *ɛi, respectively. An evidence used for supporting this assumption is that the Standard Thai lexical items spelled with 'ไ' are pronounced as [aɯ] or [aɨ] in some SWT dialects and as [əː] in Phuan while the ones spelled with 'ใ' are pronounced as [ay] in Phuan and in some other SWT dialects.

## The initial consonant variation

All of the single consonants in Phuan presented in Figure 3 can occur in the initial position of a syllable. From investigating the initial consonant variation, it is found that some initial consonants in Phuan are pronounced with different variants. Each case of initial consonant variation and the examples of consonant variation in each age-group are presented in Table 1.

Table 1: Examples of initial consonant variation in Phuan

| **Ref. No.** | **Glosses** | **Age-Groups** | | |
|---|---|---|---|---|
| | | **60 yrs old and above** | **35-50 yrs old** | **15-25 yrs old** |
| **1. /$p^h$/ → [$p^h$], [p]** | | | | |
| (250) | 'to carry on the shoulder' | (sa-)$p^h$aːy$^{35}$ | (sa-)$p^h$aːy$^{35}$ | (sa-)$p^h$aːy$^{35}$ |
| (41) | 'elder sibling' | $p^h$iː$^{31}$, piː$^{31}$ | $p^h$iː$^{31}$, piː$^{31}$ | piː$^{31}$ |
| (962) | 'to lean against' | $p^h$iŋ$^{35}$, piŋ$^{35}$ | $p^h$iŋ$^{35}$ | $p^h$iŋ$^{35}$ |
| (1012) | 'goat' | $p^h$ɛʔ$^{22}$, pɛʔ$^{22}$ | $p^h$ɛʔ$^{22}$, pɛʔ$^{22}$ | $p^h$ɛʔ$^{22}$, pɛʔ$^{22}$ |
| (548) | 'a province name (Phrae)' | pɛː$^{31}$ | pɛː$^{31}$ | pɛː$^{31}$ |
| (950) | 'to wind' | pat$^{22}$ | pat$^{22}$ | pat$^{22}$ |
| **2. /$t^h$/ → [$t^h$], [t]** | | | | |
| (19) | 'to trample' | $t^h$ɨːp$^{31}$ | $t^h$ɨːp$^{31}$ | $t^h$ɨːp$^{31}$, tɨːp$^{31}$ |
| (645) | 'pitch-dark' | $t^h$ɨp$^{22}$, tɨp$^{22}$, tɨk$^{22}$ | $t^h$ɨp$^{22}$, tɨp$^{22}$ | $t^h$ɨp$^{22}$, tɨp$^{22}$ |
| (772) | 'to challenge' | taː$^{41ʔ}$ | $t^h$aː$^{41ʔ}$, taː$^{41ʔ}$ | $t^h$aː$^{41ʔ}$, taː$^{41ʔ}$ |
| (802) | 'to pound' | $t^h$up$^{22}$, tup$^{22}$ | $t^h$up$^{22}$, tup$^{22}$ | $t^h$up$^{22}$, tup$^{22}$ |
| (822) | 'noon' | $t^h$iəŋ$^{31}$, tiəŋ$^{31}$ | tiəŋ$^{31}$ | $t^h$iəŋ$^{31}$, tiəŋ$^{31}$ |
| **3. /$k^h$/ → [$k^h$], [k], [x]** | | | | |

| Ref. No. | Glosses | Age-Groups | | |
|---|---|---|---|---|
| | | **60 yrs old and above** | **35-50 yrs old** | **15-25 yrs old** |
| (125) | 'a kind of fish' | kaŋ$^{35}$ | kaŋ$^{35}$, xaŋ$^{35}$ | kaŋ$^{35}$ |
| (148) | 'curve' | koːŋ$^{41ʔ}$ | koːŋ$^{41ʔ}$ | koːŋ$^{41ʔ}$ |
| (194) | 'be stuck in the throat' | k$^{h}$ɛːn$^{41ʔ}$, xɛːn$^{41ʔ}$ | k$^{h}$ɛːn$^{41ʔ}$, xɛːn$^{41ʔ}$ | k$^{h}$ɛːn$^{41ʔ}$, xɛːn$^{41ʔ}$, kɛːn$^{41ʔ}$ |
| (373) | 'to crawl' | k$^{h}$aːn$^{35}$, xaːn$^{35}$ | k$^{h}$aːn$^{35}$, xaːn$^{35}$ | k$^{h}$aːn$^{35}$, xaːn$^{35}$ |
| (471) | 'word' | k$^{h}$am$^{35}$, xam$^{35}$, kam$^{35}$ | k$^{h}$am$^{35}$, kam$^{35}$ | k$^{h}$am$^{35}$, xam$^{35}$, kam$^{35}$ |
| **4. /s/ → [s], [c$^{h}$], [c]** | | | | |
| (3) | 'finger root' | ka-saːy$^{35}$ | ka-saːy$^{35}$, ka-c$^{h}$aːy$^{35}$ | ka-saːy$^{35}$, ka-c$^{h}$aːy$^{35}$ |
| (175) | 'spoon' | sɔːn$^{41ʔ}$, cɔːn$^{41ʔ}$ | cɔːn$^{41ʔ}$ | cɔːn$^{41ʔ}$, c$^{h}$ɔːn$^{41ʔ}$ |
| (246) | 'tea' | saː$^{35}$ | saː$^{35}$, c$^{h}$aː$^{35}$ | saː$^{35}$, c$^{h}$aː$^{35}$ |
| (322) | 'hole' | sɔŋ$^{31}$, cɔŋ$^{31}$ | sɔŋ$^{31}$, cɔŋ$^{31}$ | sɔŋ$^{31}$, cɔŋ$^{31}$, c$^{h}$ɔŋ$^{31}$ |
| (613) | 'elephant' | saːŋ$^{41ʔ}$ | saːŋ$^{41ʔ}$, c$^{h}$aːŋ$^{41ʔ}$ | saːŋ$^{41ʔ}$, c$^{h}$aːŋ$^{41ʔ}$, caːŋ$^{41ʔ}$ |
| **5. /h/ → [h], [l]** | | | | |
| (190) | 'abandoned' | haːŋ$^{41ʔ}$ | haːŋ$^{41ʔ}$ | haːŋ$^{41ʔ}$, laːŋ$^{41ʔ}$ |
| (306) | 'rainbow' | huŋ$^{41ʔ}$, luŋ$^{41ʔ}$ (kin$^{35}$ nam$^{41ʔ}$) | huŋ$^{41ʔ}$, luŋ$^{41ʔ}$ (kin$^{35}$ nam$^{41ʔ}$) | luŋ$^{41ʔ}$ (kin$^{35}$ nam$^{41ʔ}$) |
| (435) | 'rhino' | hɛːt$^{31}$, lɛːt$^{31}$ | hɛːt$^{31}$, lɛːt$^{31}$ | lɛːt$^{31}$ |
| (647) | 'vulture' | hɛːŋ$^{41ʔ}$ | hɛːŋ$^{41ʔ}$, lɛːŋ$^{41ʔ}$ | hɛːŋ$^{41ʔ}$, lɛːŋ$^{41ʔ}$ |
| (704) | 'wanning moon' | diən$^{35}$ hɛːm$^{35}$ | diən$^{35}$ hɛːm$^{35}$ | diən$^{35}$ hɛːm$^{35}$, diən$^{35}$ lɛːm$^{35}$ |

The examples presented in Table 1 show that the variation of initial consonants /$p^h$, $t^h$, $k^h$, s, h/ occurs not only in the younger age-group but also in the middle and the elder age-groups. The voiceless aspirated bilabial stop /$p^h$/ occurring in some lexical items is pronounced as [$p^h$], the original sound, but as [p] in some lexical items. However, there are also examples showing that both [$p^h$] and [p] are used in some lexical items. The latter case is found even in the elder generation. Similarly, the voiceless aspirated alveolar stop /$t^h$/ is pronounced as [$t^h$] in some lexical items but as [t] in others. There are also examples showing that Phuan speakers in the three age-groups pronounce some lexical items with both [$t^h$] and [t]. On the other hand, the voiceless aspirated velar stop /$k^h$/ has three variants: [$k^h$], [k], and [x]. In some lexical items, all three variants are used. A similar case is found in the voiceless alveolar fricative /s/ which also has three variants: [s], [$c^h$], and [c], and all three variants are used in some lexical items. The other interesting case of initial consonant variation is the voiceless glottal fricative /h/ which is pronounced as [h] and [l]. This case of variation is found in all three age-groups but mostly in the younger generation.

Considering the factors which induce the initial consonant variation in Phuan, it can be plausibly said that language contact, which is an external factor, plays an important role. It is possible that the variants [p, t, c, k] of the initials /$p^h$, $t^h$, $c^h$, $k^h$/, respectively, are influenced by Nyuan and Lue, since most Phuan people in Fay Mun village are bilinguals who can speak Nyuan very fluently due to the fact that Nyuan has been used as the lingua franca among the people speaking different mother-tongues. Furthermore, the Lue village Nong Bua is about 10 kilometers from Fay Mun village while the Nyuan village Don Chai is closer to it, only about 2 kilometers. In addition, Fay Mun village is not far from the central area of the district where Nyuan has largely been spoken. According to the information that the author obtained from the people in Fay Mun village, they normally have less contact with the Lue people than with Nyuan people who have inhabited the nearby village and the central area of the district. The geographical criteria and the communication opportunities among people can thus lead to an assumption that the unaspirated stop variants [p, t, c, k] in Phuan might be borrowed from Nyuan, not from Lue.

One interesting issue seems to be the voiceless velar fricative [x] which is a variant of /$k^h$/. It might be said that the consonant variant [x] is borrowed from Nyuan and it is mostly used among the younger age-group. In several lexical items, the consonant variants [x] and [$k^h$] occur in free variation. This issue needs further research. As for the aspirated palatal stop [$c^h$] and the voiced alveolar lateral [l], which are respectively the variants of /s/ and /h/, they are definitely influenced by Standard Thai and they are undoubtedly used among the younger group more than the other two groups due to the fact that the younger group has more contact with Standard Thai, as previously mentioned.

The usage percentage of each initial consonant variant in each age-group of Phuan speakers can be shown in Figure 5.

As demonstrated in Figure 5, it can be clearly seen that even though there is variation of some initial consonants in Phuan, all three age-groups have used the original consonants: [$p^h$, $t^h$, $k^h$, s, h] in higher percentage than their variants. Comparing the usage of consonant sounds [p], [t], [c], [k-x], and [l], which are the variants of /$p^h$/, /$t^h$/, /s/, /$k^h$/ and /h/, respectively, it can be said that the usage of [c] is in the highest percentage in all three age-groups while the usage of [k], [x], [p], [t], [l], and [$c^h$] is respectively lower. Normally, it would be expected that people in the younger generation tend to use the borrowed variants more frequently than elder people. However, it is surprising that the younger group of Phuan speakers uses [c] less frequently than the elder and the middle age-groups, but it is unsurprising that they use [$c^h$], a borrowed variant from Standard Thai, in higher percentage.

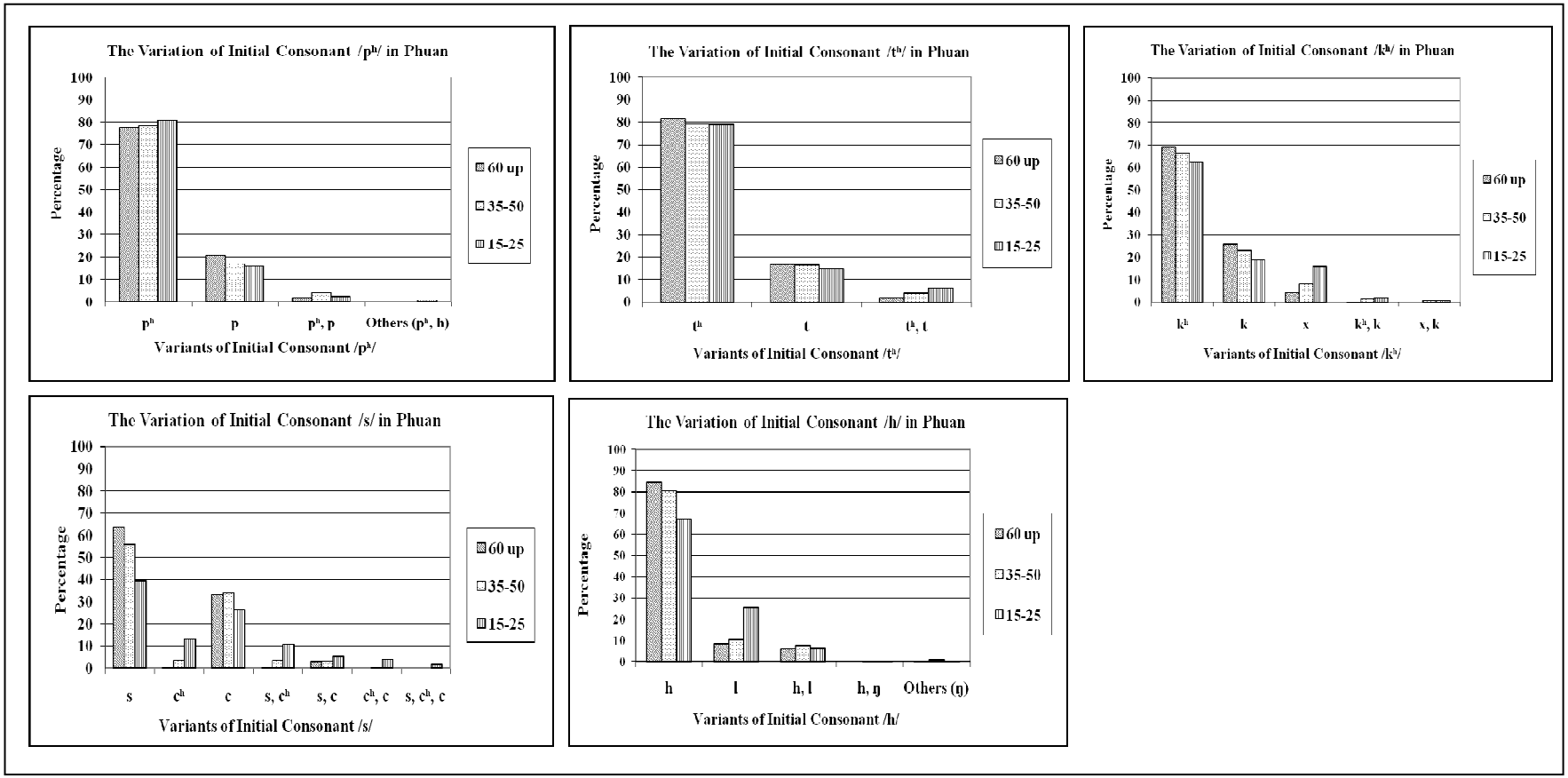



Figure 5: The usage percentage of initial consonant variants in each Phuan age-group

## The final glottal stop /ʔ/ variation

There are nine consonants: /p, t, k, ʔ, m, n, ŋ, w, y/ which can occur in the final position of a syllable in Phuan. Variation is only found for the voiceless glottal stop /ʔ/. In Phuan, the final /ʔ/ occurs in dead syllables with either short or long vowels (CVʔ, CVːʔ). The short vowel followed by final /ʔ/ is commonly found in Phuan and the other SWT dialects but the long vowel with final /ʔ/ is uniquely found in Phuan. In the other SWT dialects spoken in the same area, however, the final voiceless velar stop /k/ is used (CVːk). Some examples of the lexical items ending with /ʔ/ in Phuan and with /k/ in the other SWT dialects in comparison to Standard Thai are shown in Table 2.

Table 2: Examples of the usage of final consonant /ʔ/ and /k/ in Standard Thai, Phuan, and the other SWT dialects

| Ref. No. | Glosses | Standard Thai | Nyuan | Lue | Khün | Lao | Phuan[12] |
|---|---|---|---|---|---|---|---|
| (1/8) | 'bone' | kra-duːk$^{21}$ | duːk$^{22}$ | duːk$^{24}$ | duːk$^{22}$ | duːk$^{44}$ | duːʔ$^{22}$ |
| (1/110) | 'cheap' | tʰuːk$^{21}$ | tʰuːk$^{22}$ | tʰuːk$^{24}$ | tʰuːk$^{22}$ | tʰɨːk$^{44}$ | tʰɨːʔ$^{22}$ |
| (1/139) | 'gray-hair' | pʰom$^{24}$<br>ŋɔːk$^{21}$ | pʰom$^{23}$/<br>huə$^{23}$<br>ŋɔːk$^{22}$ | hoː$^{35}$<br>hɔːk$^{24}$ | hoː$^{23}$<br>ŋɔːk$^{22}$ | huə$^{434}$<br>ŋɔːk$^{44}$ | pʰom$^{23}$<br>hɔːʔ$^{22}$ |
| (1/240) | 'gum' | ŋɨək$^{21}$ | ŋɨək$^{22}$ | həːk$^{24}$ | ŋəːk$^{22}$ | hɨək$^{44}$ | hiəʔ$^{22}$ |
| (2/320) | 'to peel' | pɔːk$^{21}$ | pɔːk$^{22}$ | pɔːk$^{24}$ | pɔːk$^{22}$ | pɔːk$^{44}$ | pɔːʔ$^{22}$ |
| (2/435) | 'stepchild' | luːk$^{42}$<br>liəŋ$^{453ʔ}$ | luːk$^{31}$<br>liəŋ$^{41ʔ}$ | luːk$^{33}$<br>kep$^{35}$,<br>luːk$^{33}$<br>leːŋ$^{22ʔ}$ | luːk$^{31}$<br>kep$^{35}$,<br>luːk$^{31}$<br>leːŋ$^{41ʔ}$ | luːk$^{35}$<br>liəŋ$^{35ʔ}$ | luːʔ$^{31}$<br>kep$^{35}$,<br>luːʔ$^{31}$<br>liəŋ$^{41ʔ}$ |

[12] The lexical items which can be proven as loanwords in Phuan are not included in Table 2.

After analyzing the variation of final /ʔ/ in Phuan, it is noticeable that in some lexical items the final /ʔ/ is pronounced as [ʔ] but in some items it is pronounced as [k]. Furthermore, it is also found that the Phuan LRPs in all three age-groups pronounced some lexical items with both final [ʔ] and [k] as if these two consonant variants were in free variation. Some examples of the final /ʔ/ variation in Phuan are presented in Table 3.

Table 3: Examples of the final /ʔ/ variation in Phuan

| **Ref. No.** | **Glosses** | **Age-Groups** | | |
|---|---|---|---|---|
| | | **60 yrs old and above** | **35-50 yrs old** | **15-25 yrs old** |
| (1/95) | 'seam' | duːʔ$^{22}$ | duːʔ$^{22}$, duʔ$^{22}$ | ta-k$^{h}$ep$^{35}$ |
| (1/8) | 'bone' | (ka-)duːʔ$^{22}$, (ka-)duʔ$^{22}$, ka-duːk$^{22}$ | (ka-)duːʔ$^{22}$, (ka-)duʔ$^{22}$ | (ka-)duːʔ$^{22}$, (ka-)duʔ$^{22}$, ka-duːk$^{22}$ |
| (1/19) | 'squirrel' | hɔːk$^{31}$ | hɔːk$^{31}$, ka-lɔːk$^{31}$ | hɔːk$^{31}$, ka-lɔːk$^{31}$ |
| (1/102) | 'parasite' | kan$^{22}$ tɨːʔ$^{22}$, ka-tɨːʔ$^{22}$ | ka-tɨːʔ$^{22}$, ka-tɨʔ$^{22}$, k$^{h}$iː$^{33ʔ}$ tɨʔ$^{22}$ | ka-tɨʔ$^{22}$, ka-tɨːk$^{22}$, k$^{h}$iː$^{33ʔ}$ tɨʔ$^{22}$ |
| (1/128) | 'pickled fish' | paː$^{35}$ dɛːʔ$^{22}$, paː$^{35}$ dɛʔ$^{22}$, (paː$^{35}$) haː$^{41ʔ}$ | paː$^{35}$ dɛːʔ$^{22}$, paː$^{35}$ dɛʔ$^{22}$, (paː$^{35}$) haː$^{41ʔ}$ | paː$^{35}$ dɛʔ$^{22}$, (paː$^{35}$) haː$^{41ʔ}$ |
| (1/204) | 'daughter-in-law' | luːʔ$^{31}$ p$^{h}$əː$^{41ʔ}$, luʔ$^{33}$ p$^{h}$əː$^{41ʔ}$ | luʔ$^{33}$ p$^{h}$əː$^{41ʔ}$ | luʔ$^{33}$ p$^{h}$əː$^{41ʔ}$, luːk$^{31}$ p$^{h}$əː$^{41ʔ}$ |
| (1/206) | 'tadpole' | ca-huək$^{31}$, ʔi-huək$^{31}$ | ʔi-huək$^{31}$ | luʔ$^{33}$ ʔɔːt$^{35}$, luːk$^{31}$ ʔɔːt$^{35}$ |
| (2/188) | 'chain' | siəʔ$^{33}$ lek$^{35}$, soː$^{33ʔ}$ | siəʔ$^{33}$ lek$^{35}$, soː$^{33ʔ}$ | siəʔ$^{33}$ lek$^{35}$, soː$^{33ʔ}$ |

As presented in Table 3, the final /ʔ/ is still maintained in some lexical items in all three age-groups but in some items it is pronounced as [k]. Some interesting phenomena of final /ʔ/ variation are found in Phuan, i.e. the long vowels in dead syllables ending with [ʔ] appear to be shortened, for example, 'seam' /duːʔ$^{22}$/ is pronounced as [duʔ$^{22}$] by the middle age-group, and 'parasite' /kan$^{22}$ tɨːʔ$^{22}$/ or /khiː$^{33ʔ}$ tɨːʔ$^{22}$/ is pronounced as [ka-tɨʔ$^{22}$] by the middle and the younger groups. The vowel shortening can also affect the tone as it can be obviously seen that the mid-falling tone [31] becomes mid level tone [33] when the vowel is shortened, for example, 'daughter-in-law' /luːʔ$^{31}$ phəː$^{41ʔ}$/ is pronounced as [luʔ$^{33}$ phəː$^{41ʔ}$], and 'chain' /siəʔ$^{31}$ lek$^{35}$/[13] is pronounced as [siəʔ$^{33}$ lek$^{35}$] by all three age-groups. For the latter case, no original pronunciation, /siəʔ$^{31}$ lek$^{35}$/, is found in the data collected in this study. Furthermore, the final /ʔ/ in some particular lexical items may also be affected by the Standard Thai loanwords, for example, /hɔːʔ$^{31}$/ which is expected to be used for 'squirrel' in Phuan but all three age-groups use only /hɔːk$^{31}$/ and the middle as well as the younger groups also use /ka-lɔːk$^{31}$/ which is borrowed from Standard Thai. In this case, it might be plausibly said that the final [k] in some long dead syllables in Phuan might be adopted together with the Standard Thai loanwords.

Comparing the usage of the final consonant variants [ʔ] and [k] in the long dead syllables in the three age-groups of Phuan LRPs, it is undoubtedly found that the younger group use the variant [k] more than the other two groups. However, the percentage of [ʔ] and [k] usage in the younger group are not distinctively different, as can be seen in Figure 6.

[13] The diphthong /iə/ in the lexical item /siəʔ$^{31}$ lek$^{35}$/ is phonetically long vowel [siəːʔ$^{31}$ lek$^{35}$] but in this study, the transcription is simplified by not marking the length of the diphthongs.

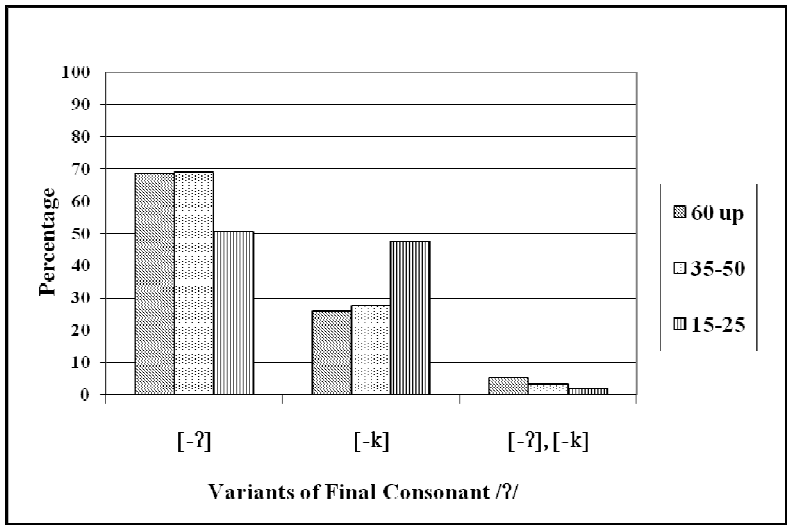



Figure 6: The final consonant variation /ʔ/ in Phuan

Similar to the variation of initial consonants previously discussed, even though there is variation of the final glottal stop /ʔ/ occurring in Phuan, the original final consonant [ʔ] is still used with greater frequency than the borrowed variant [k]. However, when comparing the usage percentage of the final variant [k] to the initial variants among the three age-groups, it can be said that the final variant [k] is used more frequently, as can be seen in Figure 7.

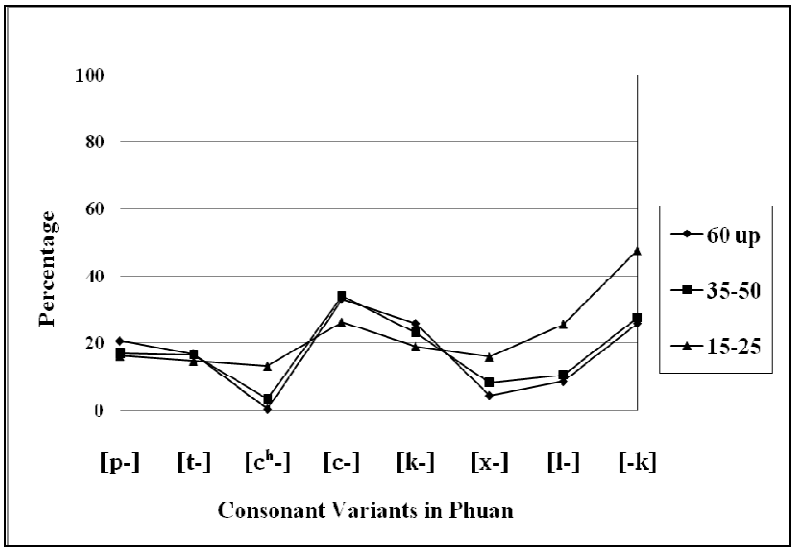



Figure 7: The usage percentage of initial variants and a final variant in Phuan

Considering the usage of the final glottal stop /ʔ/ and its variant [k] which are almost equal in the younger group, a hypothesis on sound change competition may be drawn. The usage frequency of the final glottal stop /ʔ/ and its variant [k] may show a possibility of competing sound change in Phuan in the future. If this hypothesis is valid, then it will correspond with the concept of sound change competition, proposed by Wang in 1969. Wang (1969: 15) states, "The observation that sound changes are few in kind suggests that, given any two sound changes, there is a significant possibility that they are formally in competition with each other. This line of reasoning gives indirect support to the conjecture that residue may be caused by two competing sound changes that intersect in time…The longer sound changes take, the more likely it is that they will intersect, compete, and leave a residue." It may be said that the final glottal stop /ʔ/ and its variant [k], are in competition and in the long term if the variant [k] is more and more frequently used, it may completely replace the use of the final glottal stop /ʔ/ in the syllable structure (CVːʔ).

## The vowel variation

In order to give a clear picture of the vowel variation in Phuan, a comparison of some particular vowels in Phuan and the other SWT dialects needs to be considered, as presented in Table 4. The vowels in Proto-Tai reconstructed by Sarawit (1973) and Li (1977) as well as the vowels used in Standard Thai are also included.

Table 4: The development of some particular vowels from Proto-Tai to Standard Thai, Phuan, and the other SWT dialects[14]

| **Proto-Tai** (Sarawit 1973, Li 1977) | **Standard Thai** | **Phuan** | **Lao** | **Nyuan** | **Lue** | **Khün** |
|---|---|---|---|---|---|---|
| *ia or *ie | iə | iə | iə | iə | eː | eː |
| *ɨa or *ɨe | ɨə | iə | ɨə | iə, ɨə | əː | əː |
| *ua or *ue | uə | uə | uə | uə | oː | oː |
| *əɨ | ay | əː | aə | ay | ay | ay |

[14] The diphthongs /iə, ɨə, uə/ in this research are transcribed by using /ə/ as the second element while they are reconstructed as *ia, *ɨa, *ua in Sarawit (1973) and *ie, *ɨe, *ue in Li (1977). For analyzing the vowel variation in Phuan in the present study, the distinction of such second elements in the Proto-Tai vowels will not be considered.

Table 4 shows that Phuan has the diphthong /iə/ which is developed from the Proto-Tai vowel *ie and which is also used in Standard Thai, Nyuan and Lao, while Lue and Khün use /eː/. Li (1977) reconstructed the Proto-Tai *ie (i.e. *ia in Sarawit 1973) and stated that the diphthong *ie with the emphasis on /i/ has the following vowel lowered and relaxed, giving /iə/ or /ia/, which are the pronunciations of certain dialects. In some SWT dialects, such as Shan, Lue, White Tai, etc., it is monophthongized to /e/.

As for the case of the diphthong /ɨə/, Li (1977) reconstructed Proto-Tai *ɨe (i.e. *ɨa in Sarawit 1973) and stated that this diphthong with the emphasis on /ɨ/ has the following vowel lowered and relaxed, giving /iə/ or /ia/ in some dialects. In some SWT dialects, such as Shan, Lue, White Tai, etc., it is monophthongized to /ə/, a mid central unrounded vowel. Based on the data in the current research, the Proto-Tai vowel *ɨe developed into /iə/ in Phuan and Nyuan but /ɨə/ in Standard Thai and Lao. In some dialects of Nyuan, the vowel /ɨə/ is used. While Phuan and the other SWT dialects use the dipththongs /iə/ or /ɨə/, Lue and Khün use /əː/. As for the diphthong /uə/ in Standard Thai, Phuan, Lao, and Nyuan, it is developed from the Proto-Tai *ue (or *ua) which developed into /oː/ in Lue and Khün. The other interesting development is that the Proto-Tai vowel *əɨ developed into /əː/ in Phuan and /aə/ in Lao but /ay/ in Standard Thai, Nyuan, Lue, and Khün.

An interesting case of the vowel variation in Phuan in the present study is the diphthong /uə/. Li (1977) reconstructed Proto-Tai *ue and stated that this diphthong has the emphasis on the first element and the vowel /u/ is retained. The second element, being less emphasized, is relaxed to /ə/ or /a/, becoming Siamese (i.e. Standard Thai) and Lao /ua/. In some SWT dialects, it is monophthongized to /o/, as in Shan, Lue, White Tai, etc. The Proto-Tai vowel *ue is developed to /uə/ in Phuan, Standard Thai and Lao and /oː/ in Lue and Khün in the author's present research.

The similarities and the differences of the vowels used in Phuan and the other SWT dialects will be considered in order to discuss the vowel variation in Phuan. Some examples of the vowel variation in Phuan are demonstrated in Table 5.

Table 5: Examples of the vowel variation in Phuan

| Ref. No. | Glosses | Age-Groups | | |
|---|---|---|---|---|
| | | **60 yrs old and above** | **35-50 yrs old** | **15-25 yrs old** |
| **1. /iə/ → [iə], [ɨə], [əː]** | | | | |
| (147) | 'saw (n.)' | liə$^{31}$ | liə$^{31}$, ləːy$^{31}$ | liə$^{31}$, lɨəy$^{31}$ |
| (467) | 'yellow' | liəŋ$^{23}$ | liəŋ$^{23}$, lɨəŋ$^{23}$ | liəŋ$^{23}$, lɨəŋ$^{23}$ |
| (703) | 'month' | diən$^{35}$ | diən$^{35}$, dɨən$^{35}$ | diən$^{35}$, dɨən$^{35}$ |
| (805) | 'undressed' | pəːy$^{35}$ | pəːy$^{35}$, pɨəy$^{35}$ | pəːy$^{35}$, pɨəy$^{35}$ |
| (869) | 'tender (beef)' | pəːy$^{22}$ | pəːy$^{22}$, pɨəy$^{22}$ | pəːy$^{22}$, pɨəy$^{22}$ |
| **2. /uə/ → [uə], [oː]** | | | | |
| (33) | 'banana' | koːy$^{41ʔ}$ | koːy$^{41ʔ}$ | kuəy$^{41ʔ}$, koːy$^{41ʔ}$ |
| (114) | 'bridge' | k$^{h}$oː$^{23/21}$ | k$^{h}$oː$^{23/21}$ | k$^{h}$oː$^{22/21}$, sa-pha:n$^{35}$, xoː$^{21}$ |
| (472) | 'gable' | naː$^{33ʔ}$ coː$^{22}$ | naː$^{33ʔ}$ cuə$^{22}$, naː$^{33ʔ}$ coː$^{22}$ | naː$^{33ʔ}$ cuə$^{22}$, naː$^{33ʔ}$ coː$^{22}$ |
| (593) | 'bowl' | t$^{h}$oːy$^{33ʔ}$ | t$^{h}$oːy$^{33ʔ}$ | t$^{h}$uəy$^{33ʔ}$, t$^{h}$oːy$^{33ʔ}$ |
| (921) | 'boxing' | muəy$^{35}$, moːy$^{35}$ | moːy$^{35}$ | muəy$^{35}$, moːy$^{35}$ |
| **3. /əː/ → [əː], [ay]** | | | | |
| (371) | 'to put into' | səː$^{22}$ | səː$^{22}$ | səː$^{22}$ |
| (592) | 'to give' | həː$^{33ʔ}$ | həː$^{33ʔ}$ | həː$^{33ʔ}$ |
| (366) | 'be clear' | səː$^{23}$ | səː$^{23/21}$ | səː$^{22}$, say$^{21}$ |
| (553) | 'heart' | cəː$^{35}$, cay$^{35}$ | cəː$^{35}$, cay$^{35}$ | cay$^{35}$ |
| (725) | 'under' | təː$^{41ʔ}$, tay$^{33ʔ}$ | təː$^{41ʔ}$, tay$^{33ʔ}$ | təː$^{41ʔ}$, tay$^{33ʔ}$ |
| (801) | 'in' | nay$^{35}$ | nəː$^{35}$ , nay$^{35}$ | nay$^{35}$ |

As shown in Table 5 the diphthong /iə/ has three variants [iə, ɨə, əː]. The variant [ɨə] is pronounced only by the middle and the younger groups while the variant [əː] is used in all three age-groups. As for the case of the diphthong /uə/, it has two variants [uə] and [oː]. Both of these two variants are used in all three age-groups. The other vowel which also has variation is the monophthong /əː/. It has two variants [əː] and [ay] and they are both used in all three age-groups. The comparison of each variant usage among the three age-groups of Phuan speakers is presented in Figure 8.

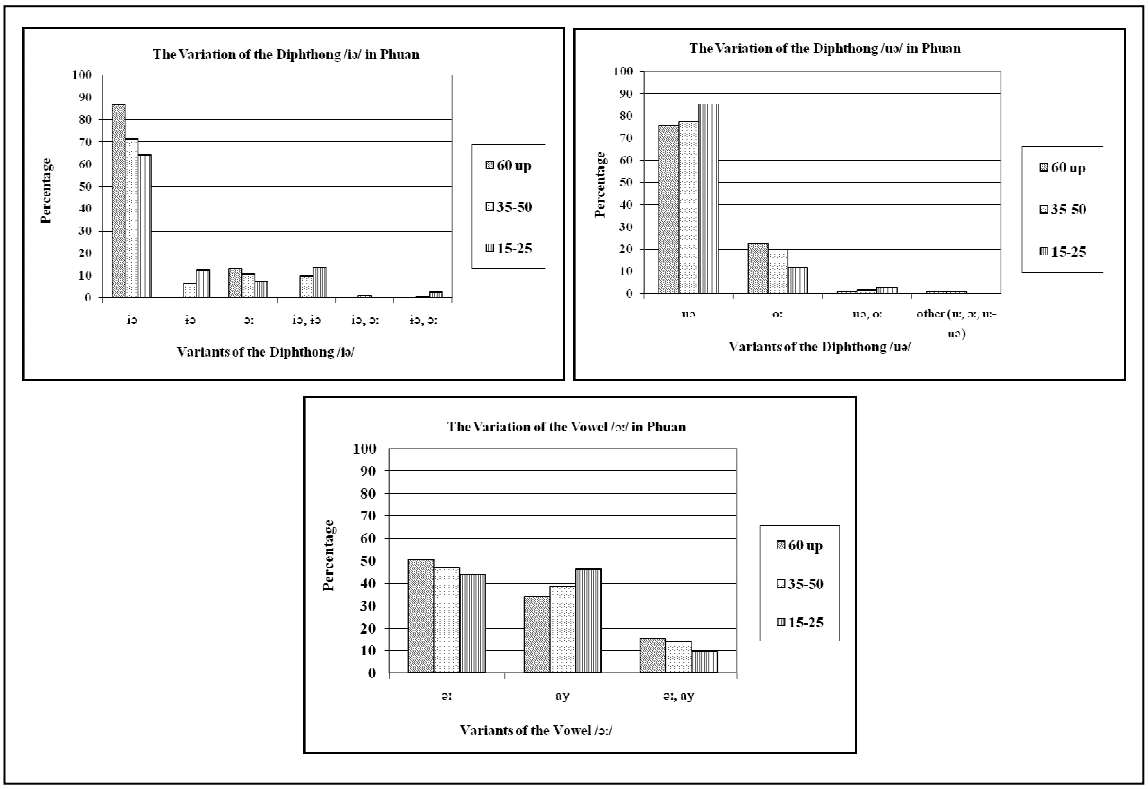



Figure 8: The usage percentage of vowel variants in Phuan

Similar to the case of consonant variation, even though the aforementioned particular vowels in Phuan have variation, the original variants are still used in high percentages in all three age-groups. Comparing the usage percentage of the vowels [ɨə-əː], [oː], and [ay] which are respectively the variants of the vowels /iə/, /uə/, and /əː/, it can be said that the variant [ay] is used in all three age-groups in higher frequency than the other variants, as presented in Figure 9.

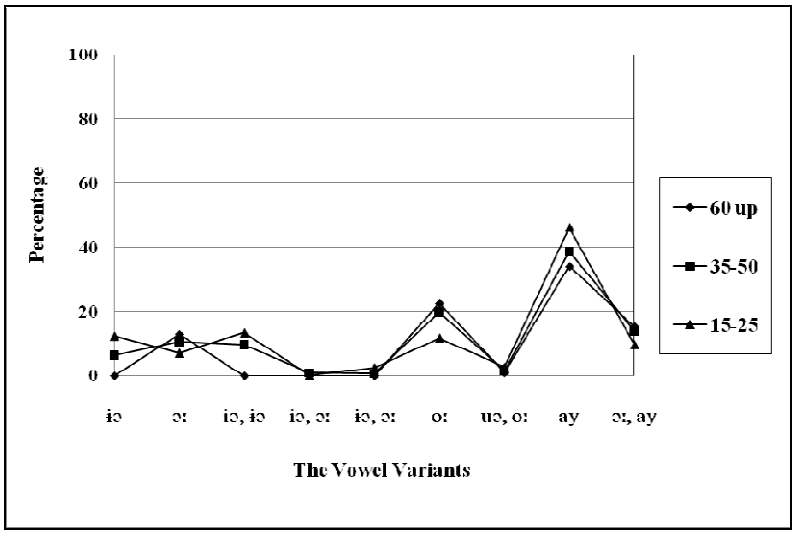



Figure 9: The usage percentage of vowel variants in Phuan

It is interesting to note that the vowel /əː/ seems to vary to a higher degree than the diphthongs /iə/ and /uə/. It is not surprising that the younger group uses the variant [ay], which is probably borrowed from Standard Thai or Nyuan, to a greater degree than the other two groups. This case of variation can show that the contrast between the two vowels /ay/ (used in the lexical items spelled with 'ไ') and /əː/ (used in the lexical items spelled with 'ใ'), from the Proto-Tai vowels *ɛi and *əi, respectively, is still maintained in Phuan and the vowel /əː/ is uniquely used only in Phuan. However, the vowel /əː/ cannot avoid being influenced by Standard Thai or Nyuan. The usage frequency of the vowel /əː/ and its variant [ay] can also be evidence of sound change competition as proposed in Wang (1969), similar to the case of the final glottal /ʔ/ and its variant [k] as previously described.

The other variant of the vowel which is used less than [ay] but more than the others is [oː]. This variant [oː] is surprisingly used in the elder and the middle groups more frequently than the younger group. It might be plausibly said that the variant [oː] is borrowed into Phuan from Lue via Nyuan loanwords, since the variant [oː] is found only in some particular lexical items. For example, 'coconut shell ladle', which is expected to be pronounced as [nam$^{41ʔ}$ buəy$^{35}$] in Phuan, is pronounced by most of the Phuan LRPs as [nam$^{41ʔ}$ boːy$^{35}$] and only three LRPs pronounced it as [nam$^{41ʔ}$ buəy$^{35}$]. Also, 'shuttle (for weaving)' is pronounced as [ma-soːy$^{23}$] instead of [ma-suəy$^{23}$] by some LRPs, or 'banana' is pronounced as [koːy$^{41ʔ}$] instead of [kuəy$^{41ʔ}$], and so on. It is also noticeable that some Phuan LRPs, especially the ones in the younger group always show confusion whether to use [uə] or [oː] in some lexical items, particularly, the Standard Thai loanwords. It might, therefore, be hypothesized

that the variant [oː] is adopted from Lue into Phuan via Nyuan, and it is then influenced by Standard Thai. Therefore the direction of the vowel variation [uə > oː > uə] might be hypothesized as in Figure 10.

| | **Lue** → | **Nyuan** → | **Phuan, then Standard Thai** → | **Phuan** |
|---|---|---|---|---|
| | [oː] | [uə > oː] | [uə > oː] | [uə] | [uə] |
| 'banana' /kuəy$^{41ʔ}$/ | [koːy$^{213ʔ}$] | [koːy$^{44ʔ}$] | [koːy$^{41ʔ}$] | [kluəy$^{42ʔ}$] | [kuəy$^{41ʔ}$] |
| 'triangular end of a roof' /naː$^{33ʔ}$ cuə$^{22}$/ | [naː$^{213ʔ}$ coː$^{24}$] | [naː$^{44ʔ}$ coː$^{22}$] | [naː$^{33ʔ}$ coː$^{22}$] | [naː$^{42ʔ}$ cuə$^{21}$] | [naː$^{33ʔ}$ cuə$^{22}$] |
| 'bowl' /t$^{h}$uəy$^{33ʔ}$/ | [t$^{h}$oːy$^{213ʔ}$] | [t$^{h}$oːy$^{44ʔ}$] | [t$^{h}$oːy$^{33ʔ}$] | [t$^{h}$uəy$^{42ʔ}$] | [t$^{h}$uəy$^{33ʔ}$] |
| 'boxing' /muəy$^{35}$/ | [moːy$^{31}$] | [moːy$^{31}$] | [moːy$^{35}$] | [muəy$^{33}$] | [muəy$^{35}$] |

Figure 10: The hypothesized direction of the vowel variation [uə > oː > uə] in Phuan

However, in some cases the phonological variation does not seem to correspond to the hypothesized direction. For example the lexical item 'fence', is pronounced by the Phuan LRPs as [huə$^{41ʔ}$] or [hoː$^{41ʔ}$] while in Nyuan it is pronounced as [huə$^{41ʔ}$]. Smilarly, 'smile, laugh' is pronounced as [hoː$^{23}$] instead of [huə$^{23}$] in Phuan but in Nyuan it is pronounced [khay$^{31}$ huə$^{23}$]. It might be possible that the variant [oː] in such lexical items is adopted directly from Lue into Phuan, not via Nyuan. Furthermore, there are some cases in which the vowel /uə/ in Phuan is definitely pronounced as [oː] in some lexical items, for example, 'bridge' is pronounced as [khoː$^{23}$] instead of [khuə$^{23}$] and 'smile, laugh' is pronounced as [hoː$^{23}$] instead of [huə$^{23}$] by Phuan LRPs in all three age-groups.

The vowel variant [ɨə], presumably borrowed from Standard Thai, is the least frequently used. It is found to be used only by the middle and the younger groups. The other interesting case of vowel variant is [əː]. Even though the variant [əː] is used infrequently, it is found that the elder group uses it more frequently than the other two groups and the usage of the vowel [əː] is only found in some particular lexical items, similar to the case of variant [oː] previously discussed.

Similar to the variation of the diphthong /uə/, the importation step of this vowel variant into Phuan might be through lexical borrowing from Lue via Nyuan. Some particular lexical items in Nyuan are pronounced with the vowel [əː] as in Lue, for example, 'naked' /pəːy$^{23}$/, 'tender (beef)' /pəːy$^{22}$/, and 'feel stiff' /məːy$^{31}$/ which might have been influenced by Lue a long time ago and gradually adopted into Phuan. However, some young speakers pronounce some of these particular lexical items with the vowel [ɨə] which is adopted from Standard Thai, the other language that the young Phuan speakers can speak very fluently. Therefore the direction of the vowel variation [iə > əː > ɨə] might be hypothesized as demonstrated in Figure 11.

| | **Lue** → | **Nyuan** → | **Phuan,** | **then Standard Thai** → | **Phuan** |
|---|---|---|---|---|---|
| | [əː] | [ɨə > əː] | [iə > əː] | [ɨə] | [ɨə] |
| 'tender (beef)' /piəy$^{22}$/ | [pəːy$^{24}$] | [pəːy$^{22}$] | [pəːy$^{22}$] | [pɨəy$^{22}$] | [pɨəy$^{22}$] |
| 'feel stiff' /mɨəy$^{31}$/ | [məːy$^{33}$] | [məːy$^{31}$] | [məːy$^{31}$] | [mɨəy$^{42ʔ}$] | [mɨəy$^{31}$] |

Figure 11: The hypothesized direction of the variation [iə > əː > ɨə] in Phuan

When asked about some particular lexical items which are expected to be pronounced with the diphthong [iə] in Phuan, some LRPs, especially the younger groups, sometimes are uncertain whether they would use the vowel [ɨə] or [əː], similar to the case of [uə] and [oː], but they do not even mention the original variant [iə]. Therefore, the vowel /ɨə/ in some Standard Thai loanwords is pronounced sometimes as [əː] but sometimes as [ɨə] by some young Phuan LRPs. For example, 'continually' /rɨəy$^{42ʔ}$ rɨəy$^{42ʔ}$/ is pronounced as [lɨəy$^{31}$ lɨəy$^{31}$] or [ləːy$^{31}$ ləːy$^{31}$], 'Job's tears' /luːk$^{42}$ dɨəy$^{33}$/ is pronounced as [luʔ$^{33}$ dɨəy$^{35}$], [ma-dɨəy$^{35}$] or [(ma-)dəːy$^{35}$], and 'tired' /nɨəy$^{21}$/ is definitely pronounced as [nəːy$^{22}$] by most of the Phuan LRPs in this study, with only one young LRP pronouncing it as [nɨəy$^{22}$]. Although the vowel /iə/ in Phuan is in the process of change, it is still used with greater frequency, compared to the other vowel variants.

## The tone variation

The historical linguistic concept of tone development in Tai languages is adapted for investigating the tones and tone variation in Phuan and the other SWT dialects in the current research project. It has been generally

known that the tones can be used as one of the important criteria to distinguish the Tai dialects into different groups. On the basis of the relationship between the initial consonants, the syllable types, and the tones, Li (1977) reconstructed the Proto-Tai tones: A, B, and C in the live syllables and D in the dead syllable which can be further divided into two categories on the basis of the vowel length distinction: long dead syllable (DL) and short dead syllable (DS). Based on the Proto-Tai tone reconstruction by Li (1977) and the different patterns of tone development in modern Tai dialects, Gedney (1972) proposed the 'tone box', a useful tool for collecting the tone data in Tai dialects as shown in Figure 12.

**Proto-Tai Tones**

| | | **A** | **B** | **C** | **DL (D-long)** | **DS (D-short)** |
|---|---|---|---|---|---|---|
| **1.** | **Voiceless friction sounds: *s-, *h-, *hm-, *hn-, *$p^h$-, *$t^h$-, *$k^h$-** | ขา [$k^hǎ$ː] 'leg' | ไข่ [$k^hày$] 'egg' | ห้า [hâː] 'five' | ขวด [$k^hùət$] 'bottle' | หก [hòk] 'six' |
| **2.** | **Voiceless unaspirated stops: *p-, *t-, *k-** | ปี [piː] 'year' | ปี่ [pìː] 'flute' | ป้า [pâː] 'aunt' | ปีก [pìːk] 'wing' | กบ [kòp] 'frog' |
| **3.** | **Glottal sounds: *ʔ-, *ʔb-, *ʔd-** | บิน [bin] 'to fly' | ด่า [dàː] 'to scold' | อ้า [ʔâː] 'to open mouth' | ดีด [dìːt] 'to flick' | ดิบ [dìp] 'raw, uncooked' |
| **4.** | **Voiced sounds: *b-, *d-, *g-, *m-, *n-, *l-, *r-** | นา [naː] 'rice field' | ไร่ [rây] 'farm' | น้ำ [náːm] 'water' | มีด [mîːt] 'knife' | มด [mót] 'ant' |
| | | | **Smooth Syllable (Live Syllable)** | | **Checked Syllable (Dead Syllable)** | |

Figure 12: The tone box (adapted from Gedney 1972: 434)

The tone box can be used to show not only the patterns of tonal mergers and splits but also the characteristics of the tones. The examples of lexical items presented in Figure 12 are taken from Standard Thai. The current research project adapted the tone box as a tool for collecting the tone data in the SWT dialects, including Phuan. The findings of tone variation in Phuan are based on the auditory and instrumental analyses from the 240-word list designed for checking tone variation. The pattern of tonal merger and split based on the concept of Tai tone development is presented in Figure 13.

The tone sticks adapted from the fundamental frequency ($F_0$) curves analyzed in PRAAT (Version 4.4.19) are included to present the characteristics of each tone.

**Voiceless friction sounds:**
***s-, *h-, *hm-, *hn-, *p$^h$-, *t$^h$-, *k$^h$-**
**Voiceless unaspirated stops:**
***p-, *t-, *k-**
**Glottal sounds:**
***ʔ-, *ʔb-, *ʔd-**
**Voiced sounds:**
***b-, *d-, *g-, *m-, *n-, *l-, *r-**

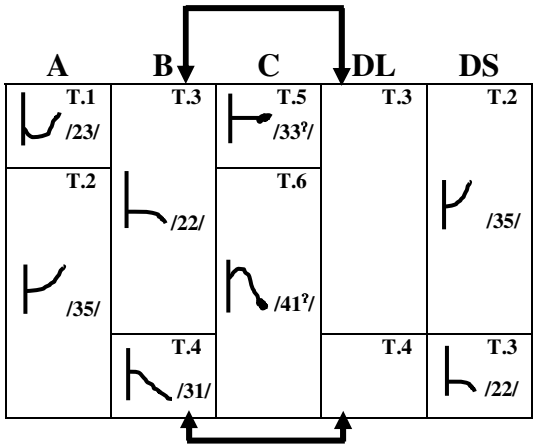



Figure 13: The tone system in Phuan

As can be seen in Figure 13, there are 6 tones in Phuan and the tonal characteristics of each tone are as follows: Tone 1 Low-Rising /23/, Tone 2 Mid-Rising /35/ or /34/, Tone 3 Low Level /22/, Tone 4 Mid-Falling /31/, Tone 5 Mid Level with glottalization /33ʔ/, and Tone 6 High-Falling with glottalization /41ʔ/. The distinctive patterns of tonal merger and split in Phuan can be concluded as follows: A 1-234, B 123-4, C 1-234, DL123-4, DS123-4, B123 = DL123, and B4 = DL4. From investigating the tone variation in Phuan, it is found that some particular tones are in the process of change. The examples of the lexical items showing the tone variation in Phuan are presented in Table 6.

Table 6: Some examples of lexical items showing the variation of Tone 1 and Tone 2 in Phuan

| Ref. No. | Glosses | Age-Groups | | |
|---|---|---|---|---|
| | | **60 yrs old and above** | **35-50 yrs old** | **15-25 yrs old** |
| **Tone 1. /23/ → [23], [21/22]** | | | | |
| (4/1) | 'ear' | huː$^{23}$ | huː$^{23/21}$ | huː$^{21}$ |
| (4/2) | 'leg' | k$^h$aː$^{23}$, xaː$^{23}$ | k$^h$aː$^{23/21}$ | k$^h$aː$^{21}$ |
| (4/4) | 'two' | sɔːŋ$^{23}$ | sɔːŋ$^{23/21}$ | sɔːŋ$^{21}$ |
| (4/6) | 'hair' | p$^h$om$^{23}$ | p$^h$om$^{23/21}$ | p$^h$om$^{21}$ |

| Ref. No. | Glosses | Age-Groups | | |
|---|---|---|---|---|
| | | **60 yrs old and above** | **35-50 yrs old** | **15-25 yrs old** |
| **Tone 2. /35/ or /34/ → [35] or [34], [23]** | | | | |
| (4/8) | 'crab' | puː$^{35/23}$ | puː$^{35/23}$ | puː$^{35/23}$ |
| (4/9) | 'eye' | taː$^{35/23}$ | taː$^{35/23}$ | taː$^{35/23}$ |
| (4/15) | 'to fly' | bin$^{35/23}$ | bin$^{35/23}$ | bin$^{35/23}$ |
| (4/16) | 'red' | dɛːŋ$^{35/23}$ | dɛːŋ$^{35/23}$ | dɛːŋ$^{35/23}$ |
| (4/22) | 'hand' | mɨː$^{35/23}$ | mɨː$^{35/23}$ | mɨː$^{35}$ |
| (4/23) | 'buffalo' | kʰwaːy$^{35/23}$ | kʰwaːy$^{35/23}$ | kʰwaːy$^{35}$, xwaːy$^{35}$ |

The examples presented in Table 6 show that the variation of Tone 1 occurs in both the middle and the younger groups, but not in the elder group while the variation of Tone 2 occurs in all three age-groups. Some of the LRPs in the middle age-group pronounce the lexical items which are expected to have the Low-Rising tone /23/ sometimes with the Low-Rising tone [23] and sometimes with Low-Falling [21] or Low Level tone [22]. Concerning the tone variation in the younger group, it is interesting to find that Tone 1 /23/ is completely pronounced as Low-Falling [21] tone and none of the young Phuan LRP in this study pronounce Tone 1 as [23]. As for Tone 2, the younger group pronounce it as both Mid-Rising [35] and Low-Rising [23] tones.

The tonal characteristics of Tone 1 and Tone 2 from one representative LRP of each age-group are presented as examples of tone variation in Figure 14.

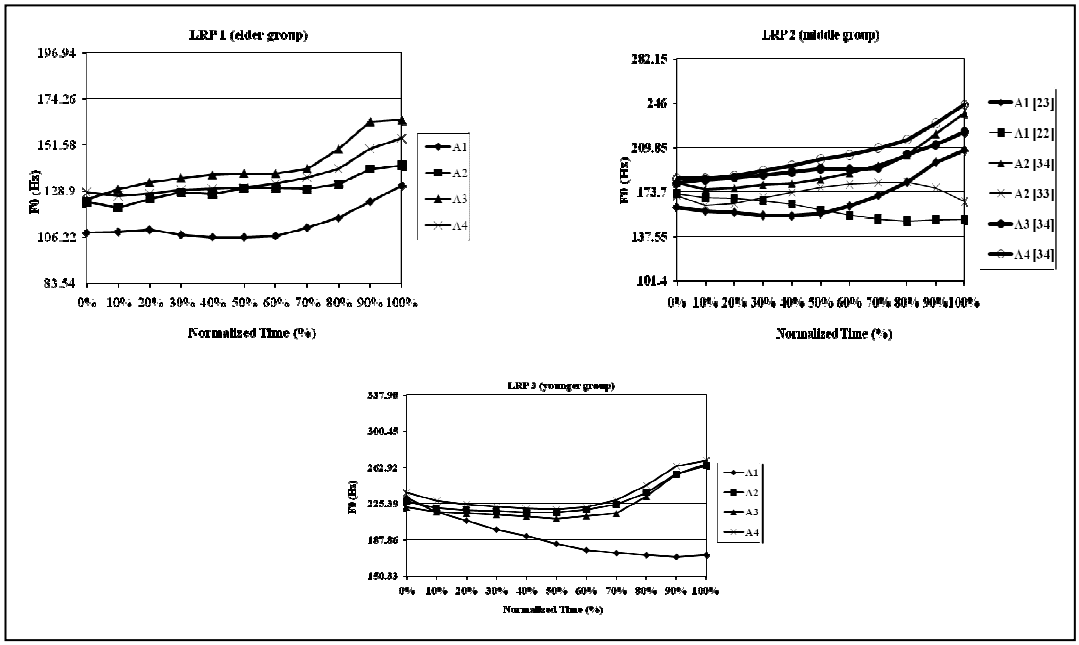



Figure 14: Examples of tonal characteristics of Tone 1 and Tone 2

As shown in Figure 14, Tone 1 (A1) pronounced by LRP 1 (elder group) is Low-Rising [23] and Tone 2 (A2, A3, A4) is Mid-Rising [34]. As for LRP 2, a representative of the middle age-group, Tone 1 (A1) has two variants, Low-Rising [23] and Low Level [22], while Tone 2 (A2, A3, A4) also has two variants, Mid-Rising [34] (A2, A3, A4) and Mid Level [33] (A2) [15]. The latter tone variant is borrowed from Standard Thai. The example of tone variants in the middle age-group can, therefore, lead to the conclusion that the tone variation is also influenced by an external factor, i.e. language contact. Concerning the younger LRP, Figure 14 shows that LRP 3, a representative of the younger age-group, pronounces Tone 1 (A1) as Low-Falling [21] while Tone 2 (A2, A3, A4) is pronounced as Low-Rising [23]. Since there is no Low-Falling tone [21] used in the A1 box in the other SWT dialects spoken in the same area, it is plausibly assumed that this tone variation is caused by tonal simplification, an internal factor, i.e. the Low-Rising tone becomes Low-Falling or Low Level tone, in a similar way to the tone variation and change due to internal factors in different Lao dialects presented in the author's earlier studies (e.g. Akharawatthanakun 2004).

Besides the variation of Tone 1 and Tone 2, it is also found that Tone 6, the glottalized High-Falling tone /41ˀ/ of some lexical items in Phuan is pronounced as the glottalized Mid Level tone [33ˀ], as shown in Table 7.

[15] In Figure 14, the curve of the second tone variant in A2 [33] pronounced by LRP 2 (middle age-group) can be specifically described as Low-Rising-Falling [232]. However, comparing to the middle part of the curve which is mostly sustained in tone level 3, the beginning and the last part of the curve which is in the range of tone level 2 is quite small. Thus, this tone is simply interpreted as the Mid Level tone [33] instead of the Low-Rising-Falling tone [232].

Table 7: Examples of some lexical items showing the variation of Tone 6 in Phuan

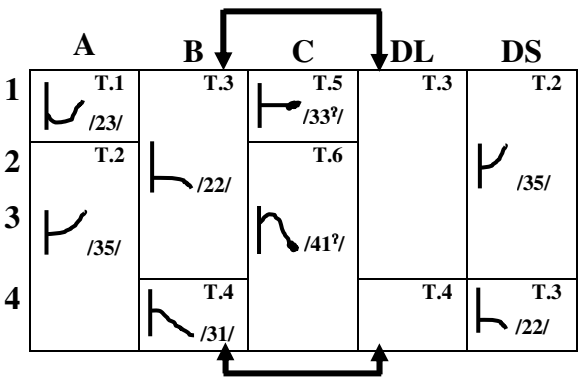
| Ref. No. | Glosses | Age-Groups | | |
|---|---|---|---|---|
| | | **60 yrs old and above** | **35-50 yrs old** | **15-25 yrs old** |
| **Tone 6. /41ˀ/ → [33ˀ]** | | | | |
| (4/64) | 'nine' | kaw$^{33ʔ}$ | kaw$^{33ʔ}$ | kaw$^{33ʔ}$ |
| (4/65) | 'to feed' | pɔːn$^{41ʔ}$ | pɔːn$^{41ʔ}$ | pɔːn$^{41ʔ/33ʔ}$ |
| (4/66) | 'fish bone' | kaːŋ$^{41ʔ}$ | kaːŋ$^{41ʔ}$ | kaːŋ$^{41ʔ}$ |
| (4/67) | 'cabinet' | tuː$^{33ʔ}$ | tuː$^{33ʔ}$ | tuː$^{33ʔ}$ |
| (4/68) | 'cheek' | kɛːm$^{41ʔ}$ | kɛːm$^{41ʔ}$ | kɛːm$^{41ʔ}$ |
| (4/69) | 'to hire' | caːŋ$^{41ʔ/33ʔ}$ | caːŋ$^{41ʔ}$ | caːŋ$^{41ʔ}$ |
| (4/70) | 'to boil' | tom$^{41ʔ}$ | tom$^{41ʔ}$ | tom$^{41ʔ}$ |
| (3/17) | 'orchid' | ʔiəŋ$^{33ʔ}$ (dɔːʔ$^{22}$/dɔʔ$^{22}$~) | ʔiəŋ$^{33ʔ}$ (dɔːʔ$^{22}$/dɔʔ$^{22}$~) | ʔiəŋ$^{33ʔ}$ (dɔːʔ$^{22}$/dɔʔ$^{22}$~) |
| (3/43) | 'wide' | kwaːŋ$^{41ʔ/33ʔ}$ | kwaːŋ$^{33ʔ}$ | kwaːŋ$^{41ʔ/33ʔ}$ |
| (3/495) | 'to dance' | ten$^{41ʔ/33ʔ}$ | ten$^{41ʔ/33ʔ}$ | ten$^{41ʔ/33ʔ}$ |
| (3/725) | 'south' | təː$^{41ʔ}$, tay$^{33ʔ}$ | təː$^{41ʔ}$, tay$^{33ʔ}$ | təː$^{41ʔ}$, tay$^{41ʔ/33ʔ}$ |
| (3/833) | 'cowrie shell' | (ma-)biə$^{41ʔ/33ʔ}$ | (ma-)biə$^{41ʔ/33ʔ}$ | (ma-)biə$^{41ʔ/33ʔ}$ |

Some examples presented in Table 7 are taken from the tone checklists and some additional examples are from the third word list in order to clearly show the variation of Tone 6. It is evident that some lexical items which are expected to have glottalized High-Falling tone [41ˀ] are pronounced with the glottalized Mid Level tone [33ˀ] while some are pronounced with both variants. This kind of variation is found in all three age-groups of Phuan LRPs and it is the result of the influence of Nyuan in which the tone in C2 is glottalized High Level tone [44ˀ]. In contrast to the variation of Tone 1 discussed above, the variation of Tone 6 occurs only in some particular lexical items and other items which seem to be

loanwords from both Standard Thai and Nyuan. It can then be assumed that the glottalized Mid Level tone [33ˀ] is borrowed and adapted from the glottalized High Level tone [44ˀ] in Nyuan.

It is important to note that some patterns of tonal merger and split in this variety of Phuan (Fay Mun village) are similar to those reported in earlier studies of other Phuan dialects found in some areas of Thailand and the Lao PDR (e.g. Brown 1965; Chamberlain 1971, 1975; Khanittanan 1973; Aromsuk 1978; Senisrisant 1982; Tanyong 1983; Watthanaprasoet and Liamprawat 1986; Decha 1987; Sukpiti 1989; and Tanprasert 2003), but some are different (see the Appendix). Interestingly, the finding about tones in Phuan in the present study is even different from other research of tones in Phuan spoken in the same area (i.e. Fay Mun village). Figure 15 shows the comparison between the pattern of tonal merger and split in Phuan in the present study and in Tanprasert (2003).

**Phuan**: Fay Mun, Nan province (present study)




**Phuan**: Fay Mun[16], Nan province (adapted from Tanprasert 2003)

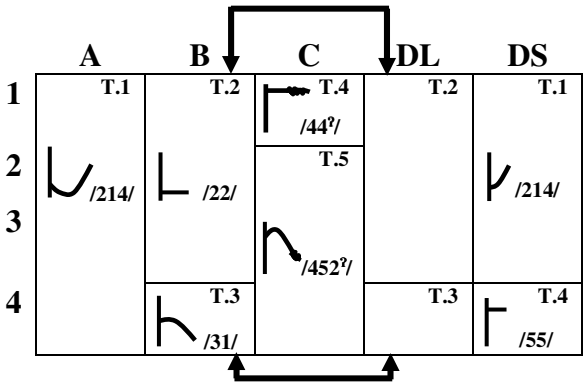



Figure 15: The tonal system in Phuan (Fay Mun) in the present study and in Tanprasert (2003)

[16] In Tanprasert (2003), the village name is spelled as *Faimun*.

Figure 15 shows that most of the patterns of merger and split in Phuan (Fay Mun) presented in Tanprasert (2003) are identical to the ones in the present study. However, it can be clearly seen that the pattern of merger and split in Column A presented in Tanprasert is A1234, while in the present study it is A1-234. This different finding may be because there is one lexical item collected for each box of tone in Tanprasert, for example, 'dog' [maː] is elicited for A1, 'eye' [taː] for A2, 'star' [daːw] for A3, and 'chin' [$k^h$aːŋ] for A4. Each of the lexical items is pronounced five times and they are in random order in the word list. It is possible that some particular lexical items in Column A collected in Tanprasert might also have tone variation, especially the ones in A2, A3, and A4. Besides, the tone data in Tanprasert were collected from one LRP, a 48-year old female. Possibly, A1234 might be a pattern of an idiolect, i.e. it is used only by a particular speaker. In addition to the pattern of merger and split in Column A, it can also be seen in Figure 15 that in Tanprasert, the tone in DS123 is Tone 1 (= A1234) and DS4 is Tone 4 (= C1) while in the present study they are Tone 2 (= A234) and Tone 3 (= B123), respectively. However, there are several factors which can lead to different findings, for example, the lexical items used and the methodology designed for collecting the data, the number and the qualification of the LRPs (e.g. age, gender, education, occupation, etc.), the computerized tool for doing tone analysis, the criteria for interpreting the tones, and so on. Besides these technical factors, these differences may also be the result of tone variation and change. This issue needs further study.

## Conclusion and Discussion

According to Thomason and Kaufman (1988: 38), the incorporation of phonological features that enter the borrowing language with loanwords may seem the first and most obvious kind of structural borrowing. The phenomenon of phonological variation in Phuan spoken in Fay Mun village seems consistent with this assumption. The variation occurs in all phonological aspects of Phuan: consonants, vowels, and tones. The variation of initial consonants appears to be greater than final consonants and vowels. The mechanism of language contact which induces variation in Phuan is phonological borrowing, for example, the initial consonant borrowing [p, t, c, k] from Nyuan and [$c^h$, l] from Standard Thai, and the final consonant [k] which might be borrowed from Nyuan or Standard Thai. Furthermore, it can be said that the vowels [oː] and [əː] are borrowed from Lue via Nyuan and the vowel [ɨə] is borrowed from Standard Thai.

Tone variation in Phuan is also induced by external factors, i.e. the influence of Nyuan and Standard Thai. Furthermore, the internal factor, i.e. tonal simplification, is also found to play an important role in inducing tone variation in Phuan. The term 'simplicity' is difficult to define in terms of linguistic criteria. Crowley (1994: 197) notes that "…[It] is extremely difficult, perhaps even impossible, to define explicitly what we mean by 'simplicity' in language. Simplicity is clearly a relative term. What is simple for speakers of one language may well be difficult for speakers of another." But in the case of tone simplification, it is reasonable to assume that the contour tones are more complex than the level tones. Indeed, Hyman (2007: 1)

asserts that "rising-falling and falling-rising tones are more complex than rising and falling tones, rising tones are more complex than falling tones, and both rising and falling tones are more complex than level tones." Based on this assumption, it can be said that tone variation in Phuan might be a case of tonal simplification, i.e. the low-rising tone /23/ which is a complex tone becomes low-falling tone [21] or low level tone [22], both of which are less complex.

Based on the findings in this study, it may plausibly be predicted that sound change competition will occur in Phuan and it will affect the phonology of Phuan in the future. For example, the initial voiceless alveolar fricative /s/, a reflex of the Proto-SWT *ɟ, may be lost from the consonant system of Phuan and the voiceless aspirated palatal stop /c$^{h}$/ may be used in place of it. However, the loss of the initial consonant /s/ may take longer time because it is still used frequently by the three age-groups of Phuan speakers. On the other hand, a change which may happen sooner is the replacing of the final glottal stop /ʔ/ which normally occurs in the syllable structure (CVːʔ) by the voiceless velar stop [k], which is used in place of it in a high percentage of cases, especially by the younger generation. As for the vowels, the diphthong [ay], a variant of the vowel /əː/ (< *əɨ) is used in a high percentage by all three age-groups of Phuan, especially the younger group. It may also be possible that in the future the vowel /ay/ may be used in place of the vowel /əː/ (< *əɨ).

The other obvious case of variation which may lead to a phonological change in Phuan in the future is that of Tone 1 Low-Rising /23/. Since all of the young Phuan LRPs in this study pronounce this tone as Low-Falling [21] tone, it is plausible to predict that Tone 1 Low-Rising /23/ in Phuan may be lost in the near future and the tone variant [21] may be used in place of it. If this change actually occurs, then Tone 1 can be considered as an allotone of Tone 3 Low Level /22/ which is phonetically similar to Low-Falling [21] tone. This change will also affect the pattern of tonal merger and split which means that a new pattern, i.e. A1=B123=DL123, will be created and the number of tones in Phuan will be five tones instead of six tones. In conclusion, the variation of consonants, vowels, and tones in this study is evidence of change in progress which can lead to the prediction of how the phonology of Phuan might be different in the future.

Another issue which still needs to be investigated is the Phuan speakers' attitudes towards particular consonant variants. Even though an exploration of speakers' attitudes test is not an objective of this study, some discussion of this issue can be raised based on the author's observation during data collection from the LRPs and from conversations with other people while conducting field work in the village during each site visit. From investigating the consonant variation in Phuan, it was noticed that younger speakers had a negative attitude towards the original initial voiceless alveolar fricative [s] but a positive attitude towards the initial aspirated palatal stop [c$^{h}$] which is borrowed from Standard Thai. Based on the information from all of the younger LRPs in this study, whenever they pronounce the initial [s] occurring in some lexical items, their friends always

laugh at them and tease them, saying that they speak with an 'unfashionable accent' like the elder generation. The younger Phuan generation seems to agree that the initial [s] has normally been used only among the elder generation. Thus, they appear more confident of using the initial consonant [$c^h$] than [s] as they consider that the initial consonant [$c^h$] is a more prestigious and fashionable variant while [s] is not. The case of Phuan speakers' positive attitude towards a consonant variant borrowed from Standard Thai seems consistent with the 'prestige' hypothesis stated by Matras, who observed that

> the "prestige" hypothesis assumes that speakers imitate elements of the speech of a socially more powerful, dominant community in order to gain approval and social status. What this means in practice is that bilingual speakers associate certain elements within their repertoire with a particular set of contexts in which these elements are normally used. By using those elements in other settings, speakers seek to activate those associations (Matras 2009: 150-151).

Though this hypothesis focused on lexical borrowing, it can also be applicable for the phonological borrowing in Phuan in this study as previously discussed that some consonants and vowels from Standard Thai are undoubtedly imported into Phuan via the usage of the young Phuan generation.

It might also be predicted that if the aforementioned original consonant in Phuan becomes stigmatized and its prestigious variant becomes stereotyped, i.e. it is widely accepted and used among the young Phuan generation and it is gradually acquired by their descendants, the original consonant may be lost and only the variant is maintained in the future. It would therefore correspond with Sankoff's assumption about phonological interference in language contact situations, namely that

> …[It] would appear likely, then, that farther along in the contact history, in the process of acquiring bilingual competence, the version of the second language spoken by such people would still contain many phonological features derivable from their native language, i.e. substratum phonological influence. However, such a development constitutes a long-term linguistic influence only insofar as the descendants of these people have acquired and carried forward the substratum-influenced version of their parents, perhaps even transmitting it, or some of its features, to descendants of the native speakers (Sankoff 2001: 643).

The stigmatization and prestige in Phuan phonological variables is an issue which needs further research.

Another issue which needs to be considered in the long term is that language revitalization may need to be promoted among the younger generation of Phuan people. Even though the younger generation of Phuan people can still speak their own mother-tongue fluently since they still use it in their daily conversations in the village, many young Phuan speakers seem to use Standard Thai more frequently in some domains, for example, when they speak to their friends or to some people with whom they are not familiar. The fact that some young Phuan people do not know several

Phuan old words may be evidence showing that language revitalization of Phuan is another issue which needs further study.

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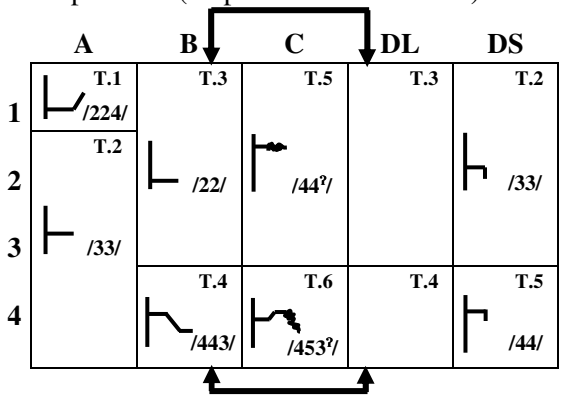
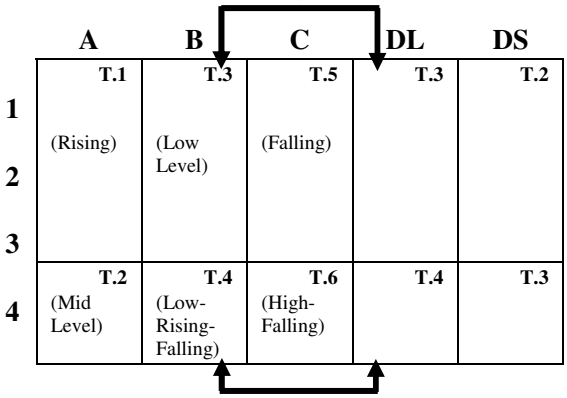
## Appendix: The tonal systems of Phuan dialects from the earlier literature

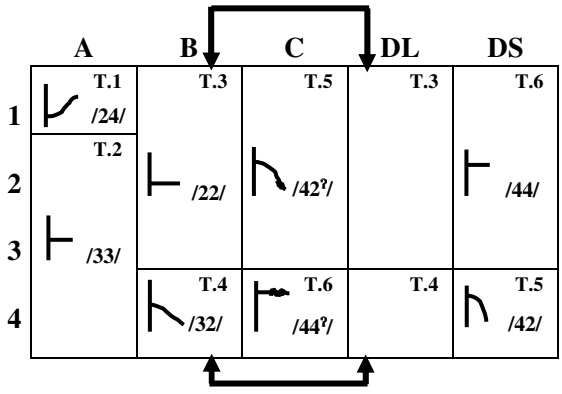
**1. Phuan:** Ban Mi district, Lopburi province (adapted from Brown 1965)



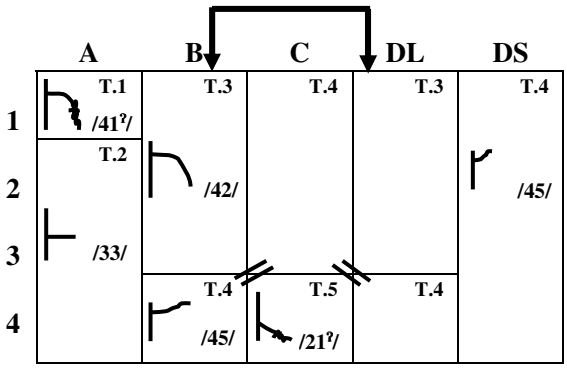

**2. Phuan:** Chiang Khwang (adapted from Chamberlain 1971)[17]




**3. Phuan:** Saraburi, Singburi, Lopburi provinces (adapted from Khanittanan 1973)

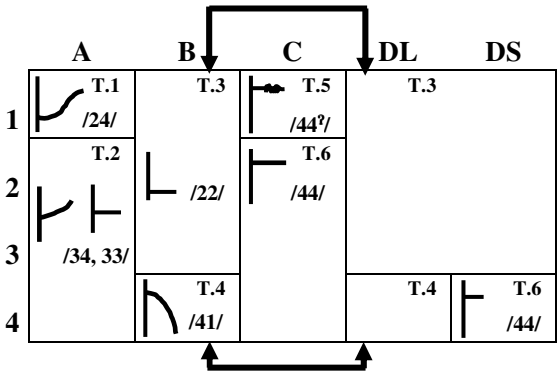



**4. Phuan:** Pak Seng (adapted from Chamberlain 1975)

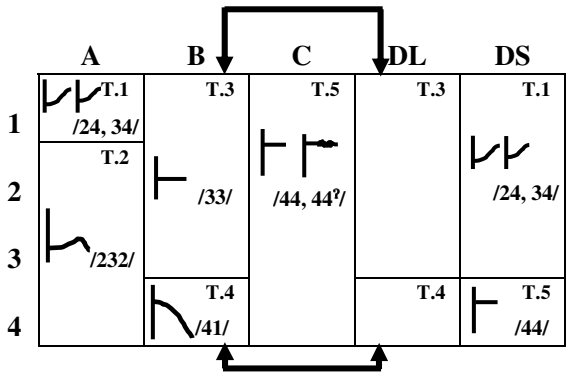



[17] No tone stick representing the tonal characteristics is included in Phuan (Chiang Khwang) studied in Chamberlain (1971).

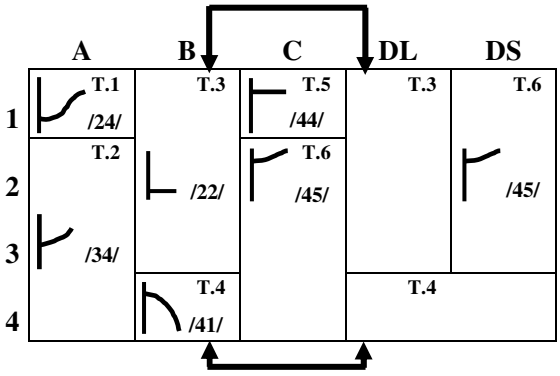
**5. Phuan:** T. Nongsaeng, A. Pakphlee, Nakhonnayok province (adapted from Aromsuk 1978)



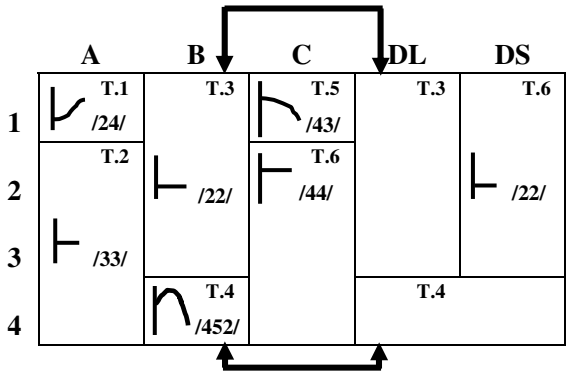

**6. Phuan:** T.Maapplakhaw, A. Thayang, Phetchaburi province (adapted from Senisrisant 1982)



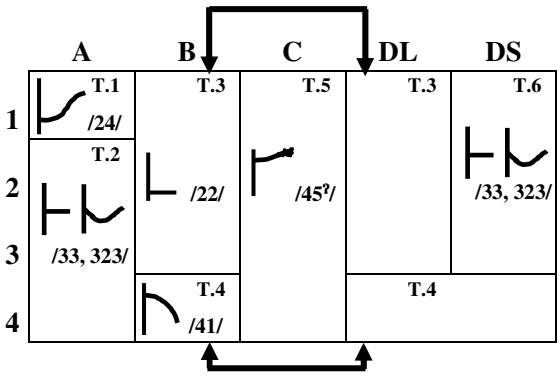

**7. Phuan:** T. Bangnamchiaw, A. Phromburi, Singburi province (adapted from Tanyong 1983)




**8. Phuan:** Suphanburi province (adapted from Watthanaprasoet and Liamprawat 1986)




**9. Phuan:** A. Tha Tako, Nakhon Sawan province (adapted from Decha 1987)




**10. Phuan:** T. Huawa, A. Srimahapho, Prachinburi province (adapted from Sukpiti 1989)