

Tonal Geography of the Provinces of Central Thailand: Part I¹

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Thai is a tonal language in which each syllable has a distinctive lexical tone. Central Thai not only consists of Bangkok Thai but also other varieties spoken in various provinces in the central region of Thailand. This study investigates four varieties of Central Thai spoken in Kanchanaburi, Ratchaburi, Phetchaburi, and Prachuap Khiri Khan. The focus is on tone variation. The following are the locations of the study: Amphoe Bo Ploy in Kanchanaburi province; Amphoe Damnoen Saduak in Ratchaburi province; Amphoe Cha-am in Phetchaburi province; and Amphoe Bang Saphan in Prachuap Khiri Khan province. To obtain reliable results, three native informants who were over 40 years of age were selected from each Amphoe (District) to be interviewed on general subjects for at least one and a half hours. One informant was then chosen concerning his/her clear native accent and/or voice to represent each Amphoe. The data include spontaneous running speech recorded during conversation, stressed monosyllabic words cut from the running speech, and monosyllabic words of an analogous set proposed by Akharawatthanakun (2003). The wordlist used in the study is adapted from Gedney's (1972) tone box checklist for determining tones in various Tai languages and dialects. The data analysis was carried out with auditory stimuli and speech analysis instruments (Computer software programs: Cool Edit Pro, PRAAT 4.5.08, and Microsoft Excel Version 2003). "Cool Edit Pro" was used for dividing a word from running speech, whereas "PRAAT" was employed to identify the distinctive phonetic characteristics of each tone presented by line graphs processed by Microsoft Excel. Based on data from an auditory and acoustic phonetic analysis, two significant patterns of lexical tones, linked to Gedney's (1972) tone box, were shown. The first pattern of tonal splits and mergers is divided along the lines of A1-23-4, B/C/D-long (DL)/D-short (DS) 123-4, B4=C123, which represents Kanchanaburi Thai. The second one splits along the lines of A1-234, B/C/D-long (DL)/D-short (DS) 123-4, B4=C123, which identifies Ratchaburi Thai, Phetchaburi Thai, and Prachuap Khiri Khan Thai. According to the apparent tone splits in the A column and their potential tone characteristics, Kanchanaburi Thai and Prachuap Khiri Khan Thai appears to be markedly different from the others; it represents a hybrid of the tone patterns of Central Thai and Southern Thai. Likewise, the acoustic of tones: low, rising, and falling plays the important role to distinguish one variety from another. Eventually, the pitch level can be changed in the case of unstressed syllable or word.

Key words: linguistic geography, tone, tone variation, Central Thai dialect, Central Thailand

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1. Introduction

Dialect differences and linguistic diversity have been in place for as long as groups of people have been talking to one another. "Dialects of a language tend to differ more from one another the more remote they are from one another geographically" (Romaine, 2000: 2). By the eighteenth century, dialect geography/dialectology seemed to be restricted to a certain area. Dialect dictionaries were, according to Petyt (1980) and Bloomfield (1984), created at first to provide information on the lexical peculiarities of local speech. Later, during the nineteenth century, grammatical and/or phonological structures of the whole areas were scrutinized comparatively and historically. As a result, linguistic changes, relations, family trees and geographic distribution among different or related languages/dialects were established.

The study of dialect geography has developed incrementally since the first survey of Georg Wenker (1876) in Germany. During these early studies, postal questionnaires were distributed in the target areas of research prior to being followed up by conducting fieldwork to observe the linguistic characteristics of the sites. Thai dialectology, according to Tingsabadh (1985) and Tingsabadh and Deeprasert (1997), was initiated around fifty years ago with the study of variation between Bangkok dialect of Central Thailand and Songkhla dialect of Southern Thailand (Panupong, 1956) and of phonology of the Thai dialects of Nakhon Sithammarat (Miller, 1956). Tone geography, according to Tingsabadh (2001), is a part of dialect geography. As long as different linguistic varieties have appeared to

some extent, not only among dialects of the different Thai regions, but also ones in the same province, district, sub-district, and/or village (Panupong, 1976), Thai tone geography can be studied at the level of dialects, sub-dialects, and accents/varieties. In Thailand, both lexical items and tone systems have been used as criteria to divide linguistic boundaries among languages and/or the main Thai dialects (Central Thai, Northern Thai, Northeastern Thai, and Southern Thai) and sub-dialects and/or varieties respectively, much in keeping with the classification procedures developed by the pioneering Tai comparativist, F.K Li (1959, 1960, and 1977).

The tonal geography of the provinces of Central Thailand has interested a number of linguists for some time. Standard Thai, the official language of Thailand, was analyzed by Abramson (1962 and 1976) and Brown (1965 or 1985) as having five phonemic tones: mid, low, falling, high, and rising. Among the Central Thai varieties studied by Thai linguists, four to six numbers of tones are observed and tone split, mergers, and complementary distribution are $A1-234/ A1-23-4$, $B4=C123$, and $B=DL$. According to Tingsabadh (1980), Central Thai dialects are composed of three groups of sub-dialects: western, central, and eastern groups. Interestingly, a great number of them are generalized linguistically; tone studies of each group have already been explored individually. Research on the western part includes Suphanburi: Brown 1965, Tingsabadh (1980); Pracuap Khiri Khan: Debavalya (1983), Banditkul (1993); Ratchaburi: Ratanadilok Na Phuket (1983); Phetchaburi: Pornsib (1994), and Krisanapan (1995); Kanchanaburi:

Worawong (2000). Studies of the central group focused on Nakhon Pathom: Nualjansaeng (1991); Ang Thong and Phra Nakhon Si Ayutthaya: Malaichalern (1988). Lastly, an investigation of eastern dialects comprises those of Prachin Buri and Sa Kaeo: Sakdanuwatwong (1994); Rayong: Bunapa (1969) and Witayasakpan (1979). Likewise, most of the earlier studies analyze tone patterns and features from isolated words only.

Thai is a tone language in which each syllable has a distinctive tone. The system of tone contrasts in any particular language or dialect is unique, both as to the phonetic characteristics of tones and as to the pattern and number of tone contrasts. The most effective criterion for dialect boundary identification is possibly that of tone systems (Gedney, 1972).

Inspired by Brown's (1985) outstanding work *From Ancient Thai to Modern Dialects*, which outlines tone development of his *Sukhothai-Southern Thai branch* and *Ayuthaya-Central Thai branch* using traditional Thai High-Mid-Low syllable initial categories and comparative tones of the fifty-nine ancient-modern dialects, this empirical study explores synchronic phonetic and phonological variations in tone systems in four provinces² of Central Thailand. This challenging work on Central Thai spontaneous speech may greatly provide actual contemporary tone systems of Central Thai dialects, of which patterns (split, mergers, and complementary distribution) and characteristics (tone graphs) may not be *ideal* as ones of Standard Thai, especially in contour tones.

The tones of a given dialect differ from one another in pitch height and

in contour. Several Thai linguists use the contrastive characteristics of tones to divide one region from another, such as the division between Central Thai and Southern Thai (Hartmann, 1980b, Debavalya, 1983) and to draw differences and/or similarities among varieties of speech.

Despite the close resemblance of Standard Thai, Bangkok Thai, and Central Thai, each of them represents a distinctive variety in this study. Standard Thai is a desired or idealized variation of Thai dialects; it is, according to Gething (1972), cited in Beebe (1974), spoken and written as the first language by educated or cultivated natives of central plains of Thailand. In addition, this variety is used as a lingua franca in most newspapers, radio, and television broadcasts, as well as in the schools, universities, and government offices throughout the country. Bangkok Thai, as far as I am concerned, is an accommodation attempted by a wide variety of people in metropolitan Bangkok in formal settings.

² The overall picture of this tonal geography includes all together ten provinces: Chainat, Singburi, Ang Thong, Ayutthaya, Suphanburi, Kanchanaburi, Ratchaburi, Phetchaburi, Samut Songkhram, and Prachuap Khiri Khan.

Likewise, Central Thai is one of four major regional dialects of Thailand, together with Northern Thai, Northeastern Thai, and Southern Thai. It includes, despite sharing a majority of lexical items and grammatical structures, a number of spoken variations. Central Thai, in both Part I and Part II research, accommodates all authentic speech varieties belonging to native speakers of the central region of Thailand excluding Bangkok and its suburban provinces: Nonthaburi, Pathumthani, Samut Prakan, Samut Sakorn, and Nakhon Pathom, and also the provinces in Central Thai area where people speak Northeastern Thai and Khorat Thai more than Central Thai: Saraburi and Lopburi. Standard Thai, which is the official or national language, is based on the written medium in Thailand, is itself a variety of Central Thai. According to Smalley (1994), even though Standard Thai takes on a different level in the language hierarchy, it is mutually intelligible with other Central Thai varieties. Speakers of different dialects usually have different accents; at the same time speakers of the same dialect may have distinguishing varieties or idiolects as well.

Among the varieties of Central Thai, various distinctive pronunciations may be observed not only in traveling from town to town but also between one village and another. I, myself, used to have a Kanchanaburi Thai accent, a variety of Central Thai. However during my childhood using the local tones, I had never listened to my unique speech; I thought that it was Standard Thai or Bangkok Thai as used by people living in Bangkok. I owe my primary school friends in Chiang Mai a special thank you for showing me the

differences between Kanchanaburi Thai and Standard Thai. Their perfect imitation of my local accent proves that in the central region of Thailand there is not only Standard Thai variety but also local dialects in many areas of Central Thailand. Up until now, whenever I travel in provincial communities in Central Thailand or stay with the residents of other areas, I do notice some significant distinctions in linguistic varieties. Nevertheless, to define the specific varieties of speech or to describe how different they are has become problematic; unlike English accents that do not involve tones, it is not easy to tell where someone is from in Thailand except by studying a sample of speech that identifies someone's areal and social background that is first most readily identified by tone differences.

Central Thai, as Burusphat (2005: personal communication) points out is comprised of distinctive varieties based on geographic distribution. The variety of differences and similarities of tone systems in the provinces of Central Thailand can be described in one piece in order to give a clearer linguistic picture or map of Central Thai dialects. It may eventually be used, to a certain extent, to identify relationships among Thai inhabitants, their varieties of speech, geographic distribution or origins in cases where migration may be involved. In regard to the linguistic evidence of two major historical kingdoms of Thai, namely Sukhothai and Ayutthaya, Brown (1965), cited in Comrie (2000) by Hudak, claims that Southern Thai is related to Sukhothai dialects, whereas Central Thai is derived from an earlier Ayutthaya dialect. This present work on tones hopefully can reflect, more or less, traces of Thai language ancestry.

1. The tones of Thai

Standard Thai displays a system of five contrastive tone levels and contours: mid, low, falling, high, and rising. The principal characteristics of a tone pattern, according to Abramson (1976/1978), are found in voice pitch as measured by fundamental-frequency (F_0) states and movements. In respect of standardization, Standard Thai should have the hallmark of a systematic and uniform pronunciation

with written characters. Furthermore, each written sign, from the point of view of phonological principle, should correspond to an accurate single phoneme and/or tone. In the same time, its tone shape and/or channel, in terms of the medium variety of the whole country, should remain static over time.

Central Thai tone shapes and some examples of phonetic transliteration systems are illuminated as follows:

Table 1. *Thai tonal patterns and some examples of phonetic transliteration systems [adapted from Lauriston et al (1956: 132)]*

Tone	Mid	Low	Falling	High	Rising
Thai spelling	ก	ง	ล	ฮ	ข
Handbook system	kha	kha	kha	kha	kha
Hass system	khaa	khaa [^]	kha□a	kha□a	kha [·]
Cornell system	(1) khaa	(2) khaa	(3) khaa	(4) khaa	(5) khaa
English Translation	a kind of grass	a kind of spice	value	trade	leg

The five phonologically contrasting ones of Standard Thai or Siamese, according to Hudak (2008: 6), had their origin in an earlier system of three tones solely in open/live syllables; there was no tone contrast in checked/dead syllables. Those tones of the three categories of open syllables have been conventionally represented by *A-B-C*, whereas of the fourth category of checked syllables, *D* is designated. Following Gedney (1972) and the tone box, the tones in each category have undergone phonemic splits, conditioned by the phonetic nature of the initial consonant of each syllable. With the *D* category, tone splits or changes depend on vowel length and are therefore not phonemic contrasts; they are conditioned variants of tones on open syllables.

3. Theoretical orientation

The theoretical framework of the study is based on the dialectology approach of Chambers and Trudgill (1998) and the checklist for determining tones in Tai dialects of Gedney (1972).

4. Objective

The aim of this auditory and acoustic study is to find out how many lexical tones there are based on the four Central Thai provinces, what the tone patterns reveal, and whether and/or how those tones shown in this study significantly vary in shape or form.

5. Methodology

5.1 Study sites

According to adjacent boundaries and hypothetical identical group of tone systems, four Central Thai provinces were primarily explored:

Kanchanaburi, Ratchaburi, Phetchaburi, and Prachuap Khiri Khan; one Amphoe (District) in each province was selected, following the dark green areas of the *Ethnolinguistic maps of Thailand* (Premsrirat et al., 2004) in which Central Thai dialect is primarily used. Likewise, the provinces chosen in the study are located in the western part of Central Thailand close to but not including Bangkok, as shown below in Figure 1.



Figure 1. Tone study sites in Central Thailand

5.2 Instruments

Eighty Thai monosyllabic words adapted from Gedney's (1972) wordlist were used. Moreover, an analogous 'khaa' set taken from Akharawatthanakun (2003) and adapted from the one by Tingsabadh (1990) was similarly used to investigate or recheck tone characteristics derived from running speech analyzed by the speech computer software. This set comprises five subsets of mixed-random test monosyllabic words. One word would be pronounced in this study three times. The same initial consonants belonging to distinctive tone categories are provided and rearranged.

5.3 Subject selection

Each of three native male/female speakers of Kanchanaburi, Ratchaburi, Phetchaburi, and Prachuap Khiri Khan, who were over 40 years old, was selected following the methods of Chambers and Trudgill (1998) for traditional informant selection³. Nevertheless, owing to the best quality of speaker's voice and native accent, only one from each village or Amphoe was promoted as a representative of a particular speech variety. Furthermore, the native informants chosen in this study had no defects in hearing and speaking.

Linguistic data of spontaneous speech and monosyllabic words were collected by means of observation and interview and recorded on an Integrated Circuit (IC) recorder before transferring to a portable personal computer. The speakers would have been engaged in topics of conversation in which they are interested and/or comfortable to share. General information and linguistic background of informants were collected through a questionnaire. Likewise, two types of monosyllabic words used in this study include words cut from recorded running speech and the ones adapted from Akharawatthanakun's (2003) wordlist.

³ According to Chambers and Trudgill (1998), the speakers are mostly composed of *nonmobile, older, and rural males (NORMs)*. They should have been nonmobile in order to guarantee that their speech represents the original features of their region; speakers should be older to reflect the speech of an older period; they should be rural and have traveled little or changed residence.

5.4 Data collection and analysis

The data analysis was carried out with auditory stimuli to investigate the tone mergers and split checked by Gedney's (1972) tone box filled with a number of test words. In addition, to work on acoustic analysis, speech software programs, namely Cool Edit Pro, PRAAT 4.5.08, and Microsoft Excel Version 2003 were used. "Cool Edit Pro" was used for dividing a word from running speech, whereas "PRAAT" was taken to identify the distinctive characteristics of each tone, presented by five-level line graphs processed by Microsoft Excel. All tokens then were extracted for the fundamental frequency (F_0) values.

Besides the scientific study, socio-historical background information on the people and provinces of Central Thailand might be taken into account together with the tone systems analyzed in the study as well.

6. Tone systems

The geographical distribution of Central Thai tonal patterns of the provinces of Central Thailand is

related closely to Standard Thai and is, beyond doubt, connected in some ways to the tones of Bangkok Thai. On the other hand, the many puzzling splits and mergers of tones and numbers of tonal contrasts are worth discussing. While Brown's (1985) masterpiece of work "ancient" Thai tones first inspired this exhaustive study, the legacy of Gedney's (1972) tone box proved to be the most fruitful instrument for determining tones in Tai dialects and has proven to be a powerful instrument and an accurate compass paving the way for recognizing the tonal patterns of Central Thailand. Concerning this Central Thai tone study, besides the states and movement of tones the end point of each tone is greatly used to identify their primary tone patterns investigated by auditory judgment. Comparing Standard Thai tonal pattern, the splits and mergers of Central Thai tones can be explained in terms of traditional High-Mid-Low syllable-initial categories as shown in the following tone boxes.

Standard Thai tone numbers and patterns

		Proto-Tai Tones				
		A	B	C	D-long	D-short
Initial Consonant at time of splits	Class 1 <i>Vl.friction</i>	5. Rising	2. Low	Falling	Low	Low
	Class 2 <i>Vl.unasp.stops</i>	1. Mid	Low	Falling	Low	Low
	Class 3 <i>Glottal sounds</i>	Mid	Low	Falling	Low	Low
	Class 4 <i>Vd.sounds</i>	Mid	3. Falling	4. High	Falling	High
		Smooth Syllables			Checked Syllables	

Figure 2. Standard Thai tone patterns: A1-234, B4=C123, and B=DL [taken from the oral presentation (Athapanyawanit, 2006)]

Table 2. Tone patterns and characteristics of Kanchanaburi Thai (Amphoe Bo Ploy)

		Proto-Tai Tones				
		A	B	C	D-long	D-short
Initial Consonant at time of splits	Class 1 <i>Vl.friction</i>	5. Rising ┌				
	Class 2 <i>Vl.unasp.stops</i>	1. Mid └	2. Low └	3. Falling └		2. Low └
	Class 3 <i>Glottal sounds</i>					
	Class 4 <i>Vd.sounds</i>	1/2. Mid/Low └└	3. Falling └	1/4. Mid/High └└	3. Falling └	4. High └
		Open Syllables			Checked Syllables	

Table 3. *Tone patterns and characteristics of Ratchaburi Thai (Amphoe Damnoen Saduak)*

		Proto-Tai Tones			
		A	B	C	D-long D-short
Initial Consonant at time of splits	<i>Class 1 Vl.friction</i>	5. Rising ┌			
	<i>Class 2 Vl.unasp.stops</i>	1. Mid ┌	2. Low (Mid-Rising-Falling) ┌	3. Falling (Low-Rising-Falling) ┌	2. Low (Mid-Rising-Falling) ┌
	<i>Class 3 Glottal sounds</i>	┌	┌	┌	┌
	<i>Class 4 Vd.sounds</i>		3. Falling ┌	4. High ┌	3. Falling ┌
		Open Syllables		Checked Syllables	

Table 4. *Tone patterns and characteristics of Phetchaburi Thai (Amphoe Cha-am)*

		Proto-Tai Tones			
		A	B	C	D-long D-short
Initial Consonant at time of splits	<i>Class 1 Vl.friction</i>	5. Rising ┌			
	<i>Class 2 Vl.unasp.stops</i>	1. Mid ┌	2. Low (Rising-Falling) ┌	3. Falling ┌	2. Low (Rising-Falling) ┌
	<i>Class 3 Glottal sounds</i>	┌	┌	┌	┌
	<i>Class 4 Vd.sounds</i>		3. Falling ┌	4. High ┌	3. Falling ┌
		Open Syllables		Checked Syllables	

Table 5. *Tone patterns and characteristics of Prachuap Khiri Khan Thai (Amphoe Bang Saphan)*

		Proto-Tai Tones			
		A	B	C	D-long D-short
Initial Consonant at time of splits	<i>Class 1 Vl.friction</i>	3. Rising ┌			
	<i>Class 2 Vl.unasp.stops</i>	1. Mid ┌	2. Falling ┌↘	3. Rising ┌	2. Falling ┌↘
	<i>Class 3 Glottal sounds</i>				
	<i>Class 4 Vd.sounds</i>		3. Rising ┌	4. Low ┌	3. Rising ┌
		Open Syllables		Checked Syllables	

It is illuminating to note that, based on the Tables above, all four of the selected varieties spoken in Central Thai region under the study belong to Central Thai dialect. Their tone patterns are all divided along identical splits of $A1-23 (-) 4$, $B4=C123$, $B=DL$, regardless of tone shapes themselves and thus reflect an identical dialectal group and unity. That is to say, almost all of the people displaying these varieties mutually comprehend one another during communication. According to the splits and coalescence of tones illustrated above, two patterns of tones among four varieties, owing to the two-way and three-way tone splits of A column, are drawn. Kanchanaburi Thai belongs to three-way tonal division whereas Ratchaburi Thai, Phetchaburi Thai, and Prachuap Khiri Khan Thai comprise two-way splits as Standard Thai. Regarding the alternative tones in the Kanchanaburi tone pattern of the $A4$, it seems that the tonal splits can be viewed in two ways, between $A1-A2$ and $A3-A4$, conditioned by the classes of initials: aspiration and voicing respectively. That is to say, the variety of Kanchanaburi tones may be related, in some particular ways, to ancient Thai and/or Southern Thai, which have a two-way-split system. In other words, low tone of ancient Thai has possibly been adopted before mid one of modern Thai. The Bang Saphan variety of Prachuap Khiri Khan, has been claimed to encompass Southern Thai by some or Central Thai by others; a great number of non-local inhabitants assume it is part of Southern Thai. Nevertheless, most of the local people perceive the variety they use as Central Thai “with a Southern accent.” Whichever way this variety is categorized, it becomes

rather apparent, concerning its contemporary tone splits and mergers elucidated above, that Bang Saphan variety is related more to Central Thai dialects. (See more claims proposing in *Tone Characteristics*). At the same time, this speech variety could represent Southern Thai. According to Tingsabadh (2001), if and only if three-way split in column A is shown: $A1 \neq A2$ and $A3 \neq A4$, $A1$ should be equated to $B1$ as illustrated in the following tone box.

A	B	C	DL	DS

Figure 4. Tone pattern of Southern Thai

According to the number of Central Thai dialects: four and five distinctive tones, two Central Thai varieties are grouped: Kanchanaburi Thai, Ratchaburi Thai, and Phetchaburi Thai are composed of five phonemic tones: rising, mid, low, falling, and high; whereas Prachuap Khiri Khan Thai consists solely of four: rising, mid, low, and falling of which high is not likely to be produced. Although the patterns and numbers of tones are somewhat remarkably similar among Central Thai varieties, their tonal features, conversely, need to be considerably described.

Physical data on these phonemes are made available by the techniques of acoustic analysis. These experiments were performed by means

of speech synthesis and the manipulation of natural speech. Tone study is, beyond any doubt, related to pitch and fundamental frequency (F_0). Pitch, with regard to Sands (1997:167), and fundamental frequency (F_0) are, though related, in different concepts. Pitch is sensed perceptually, which refers to the auditory sensation of ranging sound from high to low. On the other hand, fundamental frequency (F_0) is measured acoustically, which is associated with the physical reality underlying the range or the number of complete variations in air pressure per second conducted by the opening and closing of vocal folds. Linguistically, both of pitch and fundamental frequency (F_0) primarily carry out in

distinguishing between the distinctive tones of a language.

With regard to Morèn and Zsiga (2006), a further complication for Thai tones is the fact that the actual phonetic shapes of the individual tones, even in citation form, do not match the phonological labels: rising, mid, low, falling, and high. Tone shapes are, thus, hardly as labeled. The following are tone characteristics of four and five contrastive tones of the Central Thai varieties. Kanchanaburi Thai, Ratchaburi Thai, Phetchaburi Thai, and Prachuap Khiri Khan Thai are described respectively by the tone shapes of the five-level line graphs.

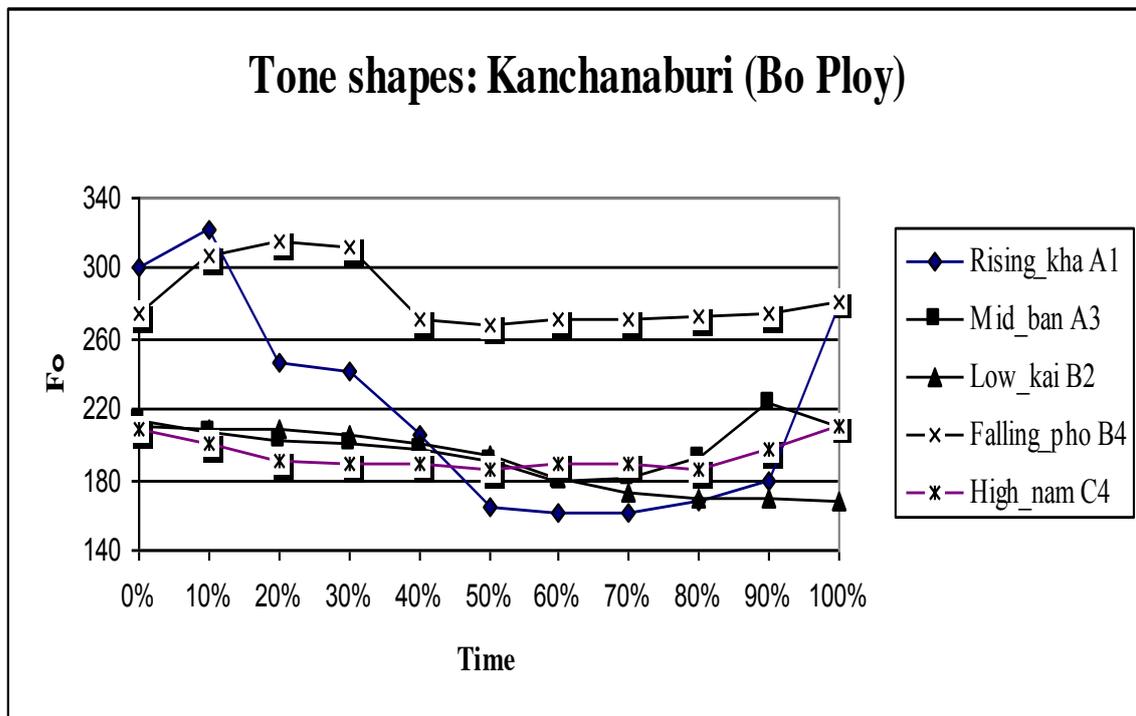


Figure 5. Tonal characteristics of Kanchanaburi Thai (Amphoe Bo Ploy)

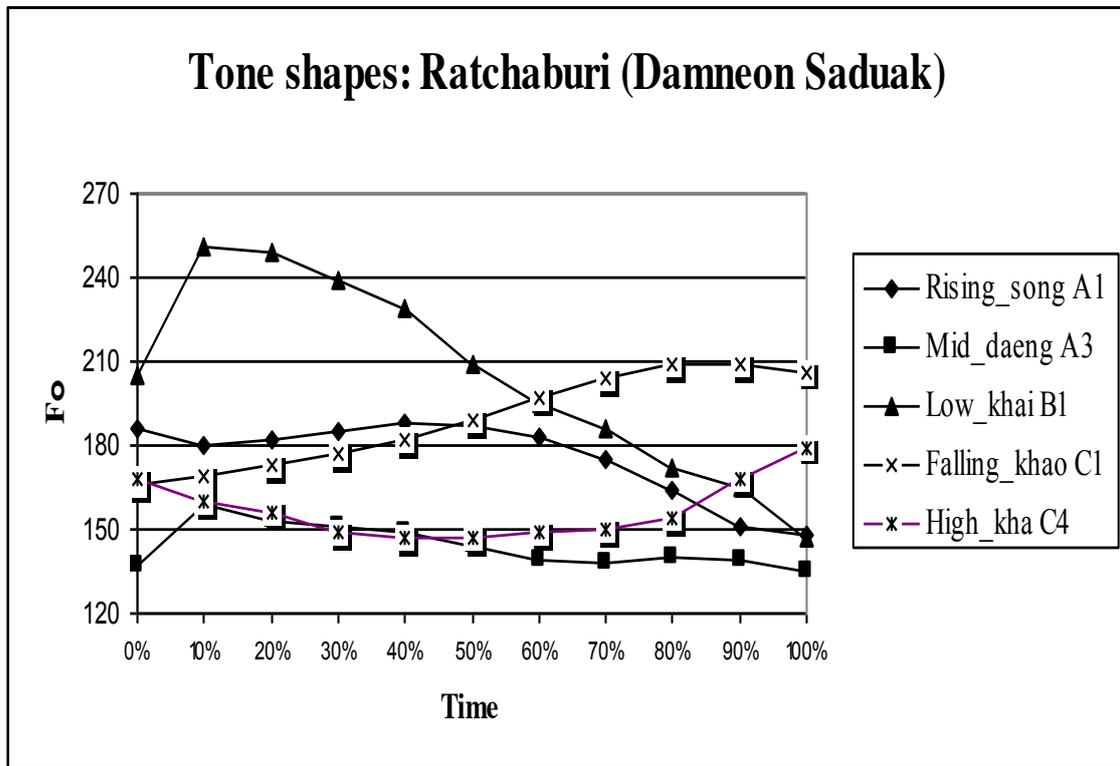


Figure 6. Tonal characteristics of Ratchaburi Thai (Amphoe Damneon Saduak)

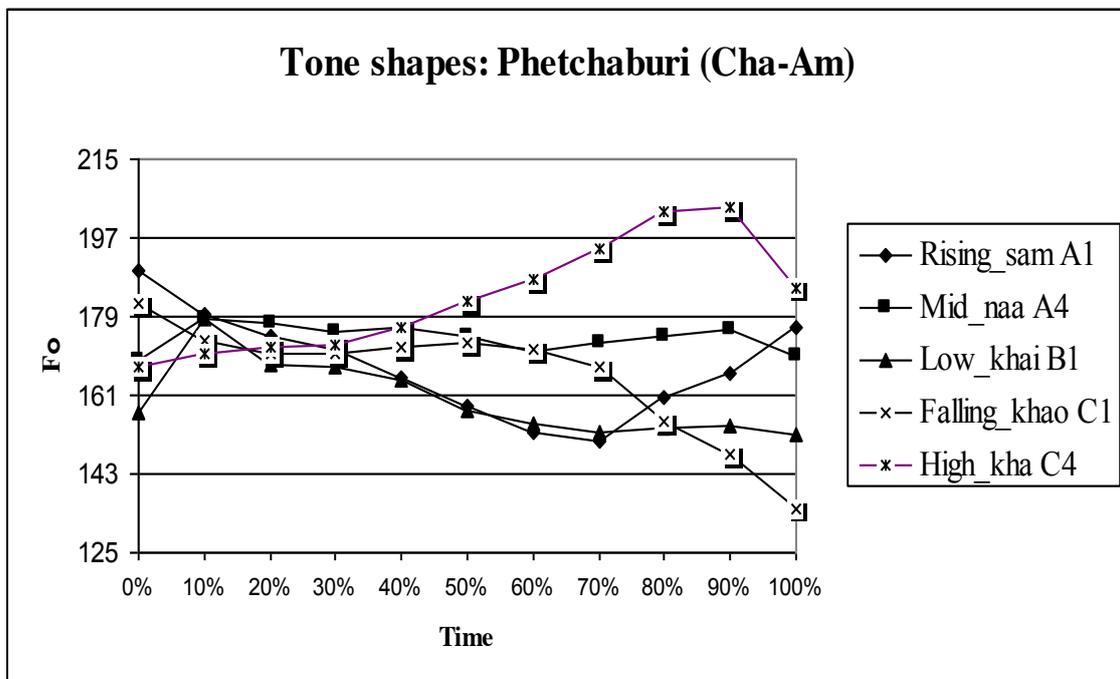


Figure 7. Tonal characteristics of Phetchaburi Thai Khan Thai (Amphoe Cha-am)

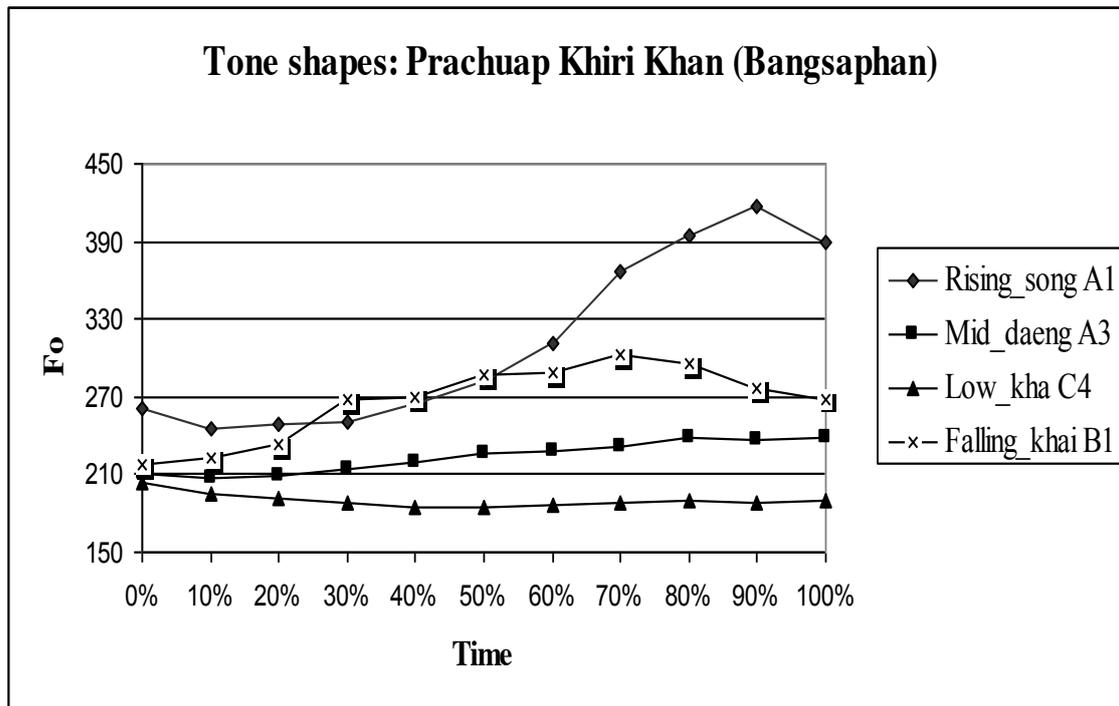


Figure 8. Tonal characteristics of Prachuap Khiri (Amphoe Bang Saphan)

The tone features of Kanchanaburi Thai, regarding the contemporary synthesis, are markedly inconsistent comparing to Abramson's (1962) Standard Thai tone shapes and ones of the other varieties. Concerning the auditory sensibility, all of five phonemic tones differ very slightly to ones of Standard Thai, especially among rising, falling, and low tones. It is possible to note, according to the line graphs, that the static/level tones, namely, mid and high can occur surprisingly in the same range [22]⁴ during the conversation. This may, however, not tend to appear in case of the monosyllabic words spoken in isolation. In addition, it is somewhat clearly that rising and falling tones

⁴The numbers encoded in a bracket show the range of tones as the musical numeral notes pointed in a musical scale.

starting and ending with high rate [514] and [454] of frequency and their sudden changes between the lines show considerably more dynamic or unexpected movement than the others. Likewise, low tone of Kanchanaburi Thai is primarily inconsistent between low and falling tones. Concerning the line graph, this tone accommodates falling before staying low statically.

In Ratchaburi Thai, low tone apparently corresponds to mid-rising-falling one [351]. High tone with its non-high realizations in running speech [212], again, on the other hand, seems to have very little different frequency to mid one [21]. Interestingly, rising and falling tones appear conversely in the uncommon direction; rising tone moves down as falling [31] while falling is raised to accommodate rising [23].

The tone features of Phetchaburi Thai reflect, though untidy bound curves, the typical Central Thai tones: high-falling-rising [423], mid [33], low [31], high-falling [41], and high [35].

Their tone shapes move up and down in the usual ways as most of Central Thai tones do.

The tone shapes of Prachuap Khiri Khan Thai, comparing to the ones of other varieties, are clearer, smoother, and lesser complex. Conversely, as highlighted in the Tone box, the phonemic tones given, contrasting with ones of other Central Thai varieties, are moved conventionally up and down between the high-low and rising-falling contrastive range of frequency, i.e., whenever low and falling tones occur in other Central Thai tone boxes, ones taking part in Prachuap Khiri Khan Thai would consistently and systematically become high and rising tones respectively. The following are its tone ranges encoded by numeral notes: low-rising [25], mid [22], low-rising falling [232], and low [21].

It is interesting to note that, concerning the acoustic tone shapes of four Central Thai varieties, confusion of tone realization is likely to happen between the level tones and contour tones. High and low tones, for some time, are produced as rising-falling contour or vice versa.

7. Conclusion and discussion

Since everybody has, regarding Bauer (2002:2), a pronunciation of their language, everybody has, definitely, an accent. Accents or pronunciations of every language have gradually been changing from time through time whereas spellings have not. The tone patterns and characteristics scrutinized

in this study merely represented the varieties contemporarily spoken in the targeted areas of Central Thailand. It is likely certain that each village or site has its own accent which may be slightly or sharply different to one of other areas of a regional boundary. According to Noss (1983), language variety is characterized as inevitable, essential, and disquieting. In the same time, the variation of accent or tone, for example, is possibly derived from individuals/speakers themselves together with their social contexts or backgrounds: age, areal features they live, education background, social status, and so on.

It now seems reasonable to claim, even though we are still far indeed from being able to explain why Central Thai varieties are exactly as they are, that the phonological patterns of tones, numbers of tone contrasts, and tone phonetic characteristics recently lighted in this study are the crucial linguistic evidence reflecting/interweaving Central Thai inhabitants with their geographic distribution. All of Central Thai varieties spoken in Kanchanaburi, Ratchaburi, Phetchaburi, and Prachuap Khiri Khan, concerning their tone patterns, soundly belong, despite the possibility of mutual incomprehensibility, to Central Thai dialect. Kanchanaburi Thai, however, needs, beyond time, to be highlighted due to the tone splits on A column. It is possible that in a particular time, Kanchanaburi Thai includes three phonemic tones in A column: rising, mid, and low. Likewise, regarding the tone comparison of Kanchanaburi Thai dialects of Amphoe Thamuang and Amphoe Thamaka (Athapanyawanit, 2006), only three distinctive tones were found: rising-

falling, mid, and high-rising, together with three-way splits of tones in A column (A1-23-4): rising-falling, mid, and rising-falling.

According to Allen and Linn (1986), “no understanding of the present is complete without understanding the past.” To claim this, some historical backgrounds should, therefore, have been taken, together with the tone systems, into consideration. Two of seven kingdoms or empires of powerful political and administrative significance in Central Thailand, concerning the historical records, are namely Sukhothai (1238-1378) and Tai Ayutthaya (1351-1767). Sukhothai, established in Central Thailand in the early and mid-thirteenth century, represents the first major kingdom of the Thai (Comrie, 2000). The beginning of the written record using the Thai script appeared in this period. The language spoken in Sukhothai, in the same time, resembled Proto-Tai in tone structure; its tone system was composed of three tones on open syllable ending in a long vowel, a semi-vowel, or a nasal. These three tones each, according to Brown (1985), included high allophones in words with aspirated initials, mid allophones in words with glottal initials, and low allophones in words with voiced initials. These consonants are exactly the ones whose letters are termed as ‘high’, ‘mid’, and ‘low’ consonants respectively in present-day Thai.

Owing to the Thai linguistic evidence raised by Brown (1985), Kanchanaburi Thai tones are likely to encompass either Central or Southern Thai. Due to the three-way tone splits of A column (A1-23-4) and the match of the High-Mid-Low tone system: voiced initials lead to low tones in A

column, it seems to be categorized into Southern Thai (Sukhothai Tones).

As for Ratchaburi Thai and Phetchaburi Thai, their two-way splits of tones (A1-234) and the mismatch of the High-Mid-Low system of tones: voiced initials lead to high tones can, without any doubt, prove they accommodate Ayutthaya Thai. On the other hand, Prachuap Khiri Khan Thai hypothesized as one of Southern Thai dialect encompasses two-ways tone splits in A column (A1-234) as other varieties of Ayutthaya dialect, however, its match of the High-Mid-Low tone system: voiced initials lead to low tones, can show the belongings of Sukhothai dialect. As far as I am concerned, I claim here that Prachuap Khiri Khan Thai of Bang Saphan is one of Sukhothai varieties, owing to the very consistency of tone system: voiced initials caused low tones and aspirate initials raised high. Nevertheless, since it has been gradually standardized by Central Thai tone system, possibly, its pattern of tones shown looks like one of Central Thai dialects. That is to say, this contemporary variety takes part in the Central Thai tone pattern with the Southern Thai accent as perceived by the local inhabitants.

Variety is the spice of life. The diversity of the speech used in a region can color society or community we live. People have, according to Romaine (2000), strong views on accents, including the idea that it is always others or outsiders who have accents and never themselves. On the contrary, owing to the dialect or variety people belong to, we do know who we are, where we are from, what groups we are in. One of the bases of life we should be proud of is the

belongings of a language, a dialect, and/or an accent.

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References

- Abramson, A. S. (1962). *The vowels and tones of Standard Thai: Acoustical measurements and experiments*. Indiana University Research Center in Anthropology, Folklore, and Linguistics, 20.
- Abramson, A. S. (1976). Thai tones as reference system. In T. W. Gething, J. G. Harris, and P. Kullavanijaya (Eds.), *Tai linguistics in honor of Fang-Kuei Li* (pp.1-12). Bangkok: Chulalongkorn University Press.
- Abramson, A. S. (1978). Static and dynamic acoustic cues in distinctive tones. *Language and Speech*, 21(4), 319-325.
- Akharawatthanakun, Ph. (2003). การเปลี่ยนแปลงของวรรณยุกต์: กรณีศึกษาภาษากลุ่มลาว [Tone change: a case study of the Lao language]. Unpublished doctoral dissertation. Chulalongkorn University, Bangkok.
- Allen, H. B. & Linn, M. D. (Eds.). (1986). *Dialect and language Variation*. Orlando, Florida: Academic Press.
- Athapanyawanit, K. (2006). *Tonal comparison of Kanchanaburi Thai dialects* [Powerpoint slides]. The Conference on Power of Language, Bangkok.
- Banditkul, P. (1993). วรรณยุกต์ในคำพยางค์เดี่ยวและคำสองพยางค์ในภาษาไทยถิ่นกลางจังหวัดประจวบคีรีขันธ์ [Tones in monosyllabic and disyllabic words in the Central Thai dialect of Prachuap Khiri Khan]. Unpublished master's thesis. Chulalongkorn University, Bangkok.
- Bauer, L. (2002). *An Introduction to International varieties of English*. Edinburgh: Edinburgh University Press.
- Bebee, L. (1974). *Socially Conditioned Variation in Bangkok Thai*. Unpublished doctoral dissertation. University of Michigan, Ann Arbor.
- Bickner, R. J. and Hudak, Th. J. (1992). The Nature of 'Standard' Thai. *Journal of South Asian Literature*, 25.1.
- Bloomfield, L. (1984). *Language*. Chicago and London: The University of Chicago Press.
- Boersma, P. & Weenink, D. (2005). *Praat: Doing phonetics by computer (Version 4.5.08)* [Computer program]. Retrieved from <http://www.praat.org/>
- Brown, J. M. (1965). *From ancient Thai to modern dialects*. Bangkok: Social Science Association Press of Thailand.
- Brown, J. M. (1985). *From ancient Thai to modern dialects: And other writings on historical Thai*

- linguistics*. Bangkok: White Lotus.
- Bunapa, O. (1969). หน่วยเสียงภาษาระยอง [*Rayong Phonology*]. Unpublished master's thesis. Chulalongkorn University, Bangkok.
- Burusphat, S. (2000). ภูมิศาสตร์ภาษาถิ่น [*DIALECT GEOGRAPHY*]. Bangkok: Ekphimthai.
- Chambers, J. K. and Trudgill, P. (1998). *Dialectology* (2nd ed.). Cambridge: Cambridge University Press.
- Chantavibulya, V. (1956). ความแตกต่างระหว่างภาษากรุงเทพฯและภาษาสงขลา [*Variation between the Bangkok dialect and the Songkhla dialect*]. Unpublished master's thesis. Chulalongkorn University, Bangkok.
- Comrie, B. (2000). *The world of major languages*. New York: Routledge.
- Debavalya, K. (1983). แนวแบ่งเขตภาษาไทยถิ่นกลางกับภาษาไทยถิ่นใต้โดยใช้วรรณยุกต์เป็นเกณฑ์ [*A linguistic borderline between Central Thai and Southern Thai: A tonal study*]. Unpublished master's thesis. Chulalongkorn University, Bangkok.
- Esling, J.H. (1998). Everyone has an accent except me. In L. Bauer & P. Trudgill (Ed.), *Language Myths* (pp. 169-175). London: Penguin Books.
- Gedney, W. J. (1972). A Checklist for determining tones in Tai dialects. In M. E. Smith. (Ed.), *Studies in Linguistics in Honor of George L. Trager* (pp.423-37). The Hague: Mouton.
- Gething, T.W. (1972). *Aspects of meaning in Thai nominals: A study in structural semantics*.
- Haas, M. R. (1958). The Tones of Four Tai Dialects. *Academia Sinica, Bulletin of the Institute of History and Philology*, 29, 817-826. .
- Hartmann, J. F. (1980b). A model for the alignment of dialects in Southwestern Tai. *Journal of the Siam Society* 68.1, 72-86.
- Hudak, Th. J. (2008). William J. Gedney's comparative Tai source book. *Oceanic Linguistics Special Publication*, 34. Honolulu: University of Hawai'i Press.
- Krisnapan, D. (1995). แนวการศึกษาวรรณยุกต์จากคำพูดต่อเนื่อง: กรณีศึกษาภาษาไทยถิ่นเพชรบุรี [*A connected-speech approach to tonal study: A case study of Phetchaburi Thai*]. Unpublished doctoral dissertation. Chulalongkorn University, Bangkok.
- Lauriston et al. (1956). *Thailand*. Subcontractor's monograph HRAF 42. New Haven, Conn.: Human Relations Area Files, Inc.
- Li, F. K. (1959). Classification by vocabulary: Tai dialects. *Anthropological Linguistics* 1(2), 15-22.
- Li, F. K. (1960). A tentative classification of Tai dialects. In S. Diamond (Ed.), *Culture in History: Essays in honor of Paul Radin* (pp. 951-59). New York: Columbia University Press.
- Li, F. K. (1977). *A handbook of comparative Tai*. Honolulu: The University Press of Hawai'i.
- Malaichalern, Y. (1988). วรรณยุกต์ในภาษาไทยถิ่นจังหวัดอ่างทอง

- องและพระนครศรีอยุธยา [Tones in the Thai dialects of Changwat Ang Thong and Phra Nakhon Si Ayutthaya]. Unpublished master's thesis. Chulalongkorn University, Bangkok.
- Miller, R. A. (1956). Phonology of the Thai dialect of Nakhon Sithammarat. *Orbis*, 5, 250-258.
- Moren, B. & Zsiga, E. (2006). The lexical and post-lexical phonology of Thai tones. *Natural Languages and Linguistic Theory*, 24(1), 113-178.
- Nitisaroj, R. (2006, May). *Thai tonal contrast under changes in speech rate and stress*. Paper presented at Speech Prosody 2006, Dresden. Retrieved from <http://www.isca-speech.org/archive>
- Noss, R. B. (1983). *Varieties of English in Southeast Asia: Selected papers from the RELC Seminar on "Varieties of English and their Implications for English Language Teaching in Southeast Asia"*, Singapore, April 1981. Singapore: Singapore University Press.
- Nualjansaeng, J. (1991). วรรณยุกต์ในภาษาไทยถิ่นอำเภอเมืองนครปฐม [Tones of the Thai dialect of Amphoe Muang Nakhon Pathom]. Unpublished master's thesis. Chulalongkorn University, Bangkok.
- Panupong, V. (1976). ความแตกต่างระหว่างภาษาถิ่น [Dialectal variation]. In T. W. Gething, J.G. Harris, and P. Kullavanijaya (Eds.), *Tai Linguistics in Honor of Fang-Kuei Li*. Bangkok: Chulalongkorn University Press.
- Petyt, K.M. (1980). *The study of dialect: An introduction to dialectology*. London: Andre Deutsch.
- Pornsib, A. (1994). วรรณยุกต์ภาษาไทยถิ่นเพชรบุรี [Tones in Phetchaburi Thai]. Unpublished master's thesis. Chulalongkorn University, Bangkok.
- Premssirat, S. et al. (2004). แผนที่ภาษาของกลุ่มชาติพันธุ์ต่างๆในประเทศไทย: *Ethnolinguistic maps of Thailand*. Nakhon Pathom: Institute of Language and Culture for Rural Development, Mahidol University.
- Ratanadilok Na Phuket, L. (1983). วรรณยุกต์ของภาษาไทยถิ่นจังหวัดราชบุรี [Tones of Ratchaburi Thai]. Unpublished master's thesis. Chulalongkorn University, Bangkok.
- Romaine, S. (2000). *Language in society: An introduction to sociolinguistics* (2nd edition). New York: Oxford University Press.
- Sands, D. (1997). Improvement theory and its applications. In A. Gordon and A. Pitts (Eds.), *Higher-Order operational techniques in Semantics*. Cambridge: Cambridge University Press.
- Sakdanuwatwong, J. (1994). แผนที่ภาษาจังหวัดปราจีนบุรีและสระแก้ว [Language map of Prachinburi and Sa Kaeo]. Unpublished master's thesis. Chulalongkorn University, Bangkok.
- Smalley, W. A. (1994). *Linguistic diversity and national unity: Language ecology in Thailand*.

- Chicago: The University of Chicago Press.
- Tingsabadh, K. (1980). *A phonological study of the Thai language of Suphanburi Province*. Unpublished doctoral dissertation. University of London.
- Tingsabadh K. (1984, August). *Some accents of Central Thai: A tonal study*. Paper presented at the 18th International Conference on Sino-Tibetan Languages and Linguistics, Bangkok.
- Tingsabadh, K. (1990). วรรณยุกต์ในภาษาไทยถิ่นสุพรรณบุรี : การศึกษาเปรียบเทียบวรรณยุกต์ในคำกั บวรรณยุกต์ในถ้อยคำต่อเนื่อง [*Tones in Suphanburi Thai: A comparative study between tones in citation forms and tones in connected speech*]. Unpublished research report. Department of Linguistics, Faculty of Arts, Chulalongkorn University, Bangkok.
- Tingsabadh, K. & Deeprasert D. (1997). Tones in Standard Thai connected speech. In A. S. Abramson (Ed.), *Southeast Asian linguistic studies in honour of Vichin Panupong* (pp.297-307). Bangkok: Chulalongkorn University Press.
- Tingsabadh, K. (2001). Thai Tone Geography. In M. R. K. Tingsabadh and A. S. Abramson (Eds.), *Essays in Tai Linguistics* (pp. 205-228). Bangkok: Chulalongkorn University Press.
- Wenker, G. (1876). *Linguistic atlas of the German empire (Sprachatlas des Deutschen Reichs)*. Marburg: Forschungszentrum Deutscher Sprachatlas.
- Witayasakpan, S. (1979). การศึกษาภาษาถิ่นย่อยของจังหวัดอ่างทอง [*The study of dialects of AngThong province*]. Unpublished master's thesis. Chulalongkorn University, Bangkok.
- Worawong, N. (2000). วรรณยุกต์ภาษาไทยถิ่นกาญจนบุรี [*Tone in Kanchanaburi Thai*]. Unpublished master's thesis. Chulalongkorn University, Bangkok.