

Phonetic variation of final trill and final palatals in Khmer dialects of Thailand¹

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Outside Cambodia Khmer is spoken by a large population in Thailand and Vietnam. In Thailand it is found mainly in the lower part of Northeast Thailand and the connected area in the East bordering Cambodia. The Khmer spoken in Thailand has been treated by such linguists as Jenner (1974), Smalley (1964, 1976), Thomas (1989) and several other linguists in Thailand as a separate dialect of Khmer. The term Northern Khmer (NK) initiated by Smalley corresponds to the NK word *Khmer Iv*: 'upper Khmer' and has been used to refer to the Khmer people and language in Thailand especially in the Northeast where it is predominantly spoken. However, other linguists, such as Bauer (1989), have claimed that it is not a dialect in the strict technical sense. Even though Thomas (1989) has shown convincingly that NK can be considered a distinct language from a sociolinguistic viewpoint, a study of the variation of Khmer spoken in different places is still needed for more understanding of this language so that historical and applied studies can be successfully carried out.

This paper presents a survey of the phonetic variation of three final consonants (final trill, final nasal palatal, and final stop palatal) in various Khmer dialects of Thailand. The variation of each final consonant is shown in a chart, and the distribution of each consonant variant in various NK communities is shown on a map.

1. The distribution of Khmer speakers in Thailand

The survey of the areas inhabited by the Khmer speakers is part of a larger ethnolinguistic map project of Thailand undertaken by the author and others. The information on the locations and number of Khmer speakers has been provided by people working in the area, such as the village headmen, heads of sub-districts (kamnan), teachers, health personnel, and community development workers through answering a questionnaire designed for collecting data at the village level.

¹The author would like to thank David Thomas for helpful suggestions and comments in presenting the data, and several other friends for help in rechecking the data and the Khmer script and in the writing of this paper.

According to the present stage of the research project (which is not yet finished) Khmer speakers are found in at least 12 provinces in East and Northeast Thailand. The number of speakers is not less than 1.3 million. The number of Khmer speakers in various provinces in Thailand is presented in Table 1.

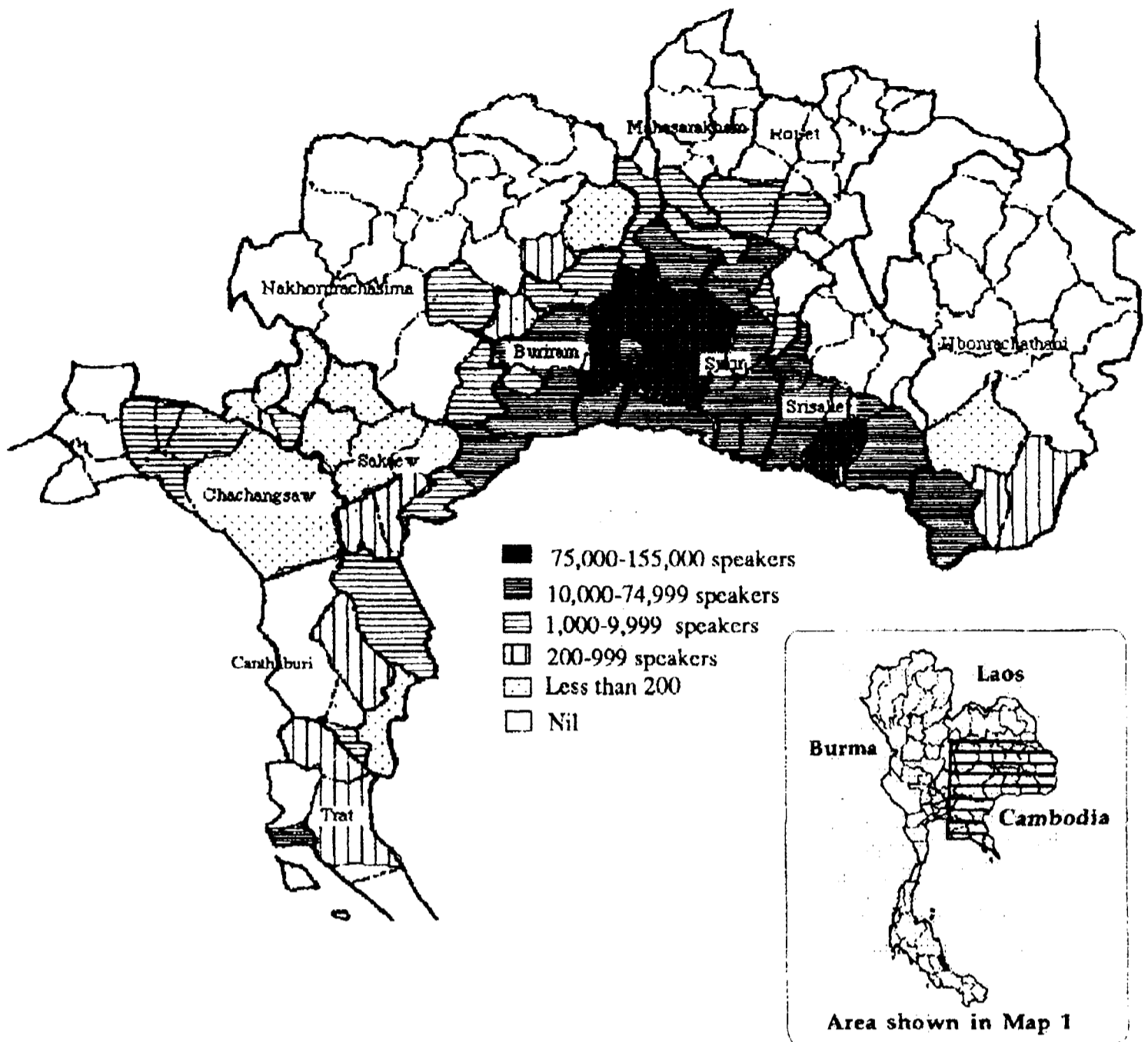
Table 1. Geographical distribution and population numbers of Khmer speakers in eastern and northeastern Thailand

Provinces	Districts	NK Speakers
1. Ubonrachathani	Namyen	23,455
	Buntharik	934
	Najalucy	355
	Others	437
2. Srisaket	Kantharalak	60,501
	Khukhan	118,676
	Khunhan	49,464
	Phraibang	17,106
	Prangku	12,705
	Sriratana	15,427
	Hueythaptan	9,310
	Others	1,293
3. Surin	Buachet	15,683
	Sangkha	52,897
	Kapchoeng	53,786
	Prasat	118,643
	Lamduan	19,992
	Muang	152,526
	Srikhoraphum	39,959
	Comphra	22,348
	Thatum	32,523
	Chumphonburi	7,050
	Others	3,120
4. Buriram	Bankruat	15,649
	Lahansai	31,422
	Pakham	536
	Nangrong	19,593
	Nongki	225
	Phlapphlachai	32,000
	Prakhonchai	85,945
	Nonghong	2,428
	Lamplaimat	5,174
	Muang	81,559
	Krasang	78,403
	Khumuang	7,498
	Satuk	37,095
	Phutthaisong	1,532
	Hueyrat	26,307
Others	238	

Table 1. Continued

5. Nakhornrachasima	Sengsang Hueythalleng Nongbunnak Others	2,036 1,080 644 73
6. Sakaew	Taphraya Aranyaprathet Wangnamyen Others	15,818 994 818 1,321
7. Pracinburi	Srimahaphot Muang Others	1,503 277 669
8. Mahasarakham	Phayakkhaphumphisai Yangsisurat	2,365 1,487
9. Roi-et	Kasctwisai Suwannaphum Phonsai Others	3,719 3,149 161 66
10. Chachoengsaw	Rachasan Thatakiap Bangkhla Plengyaw Others	1,051 2,248 1,826 1,942 1,659
11. Canthaburi	Pongnamron Muang Others	5,651 1,178 1,123
12. Trat	Lam-ngop Muang Bo-rai Klongyai	1,375 656 883 738
13. Other provinces		1,542
	Total	1,311,837

The distribution of Khmer speakers in 12 provinces in East and Northeast Thailand is also shown graphically in Map 1.



Map 1. Number of Northern Khmer speakers in various districts of 12 provinces in the Northeast and East of Thailand in 1994.

Five degrees of shading in Map 1 indicate the number of Khmer speakers in various districts in Thailand (the darker the shading, the higher the number of speakers). It can be seen here that NK is spoken in a large area. The solid core area of NK speakers includes the provinces of Surin, Buriram, and a part of Srisaket in Northeast Thailand. The NK communities extend to the east to some districts of Ubon, to the north to some districts of Mahasarakham, Roi-et, etc., and to the west to some districts of Nakhonrachasima and Sakaew. They are also found in Canthaburi, Trat down the east coast, and in Chachoengsaw which is near Bangkok.

This map presents a picture similar to the survey of NK areas done in 1964 and published in 1988 by Smalley. However, the present survey shows the extension of the NK communities to the west of the core areas that were not included in the 1964 map. These areas include some districts in Sakaew and Pracinburi provinces next to Buriram and the areas in the east coast of Thailand (Canthaburi and Trat), and the area further inland near Bangkok, such as Chachoengsaw where there are a number of NK communities.

2. Characteristics of Khmer final consonants

The final consonant is an outstanding characteristic of Mon-Khmer languages. Among the Khmer consonant inventory (based on Surin Khmer) which consists of 17 consonants, all can occur as initial consonants whereas 14 consonants can occur as final consonants as indicated by the bold characters in Table 2 below.

Table 2. Consonant inventory in Khmer

	Bilabial	Aveolar	Palatal	Velar	Glottal
Stops (vl)	p	t	c	k	ʔ
(vd)	b	d			•
Fricatives		s			h
Nasals	m	n	ɲ	ŋ	
Lateral		l			
Trill		r			
Semi-vowels	w		j		

Among these final consonants, final trill, final nasal palatal and final stop palatal show interesting variation, namely /r ~ ø/, /ɲ ~ ŋ/ and /c - k - ʔ/. The patterns of variation in these final consonants vary with the places. The purpose of this paper is to describe dialectal variation and geographical distribution of these final consonants in 37 locations in Thailand.

3. Research methodology

3.1 Wordlist

A list of 90 lexical items which took Surin Khmer as the base was used for investigation (see appendix). However, only 55 words have been chosen for discussion here. Since the vowels have been observed to play a role in the variation of final consonants, the wordlist of 55 items was organized as follows:

1. Lexical Set 1:

- 15 words with final -r: 10 are words with long vowels or diphthongs and 5 are words with short vowels.

2. Lexical Set 2:

- 12 words with final -ŋ: 8 are words with front vowels and 4 are words with non-front vowels
- 4 words with final -ŋ: all are words with non-front vowels

3. Lexical Set 3:

- 12 words with final -c: 8 are words with front vowels and 4 are words with non-front vowels
- 12 words with final -k or -ʔ: all are words with non-front vowels

List of 55 Words used for discussion

The 55 words used for discussion here are presented by using Surin Khmer pronunciation as the base or as a representative of NK. The modern Khmer orthography and standard Cambodian Khmer pronunciation are also given here for comparative purposes in section 5.

Lexical Set 1: final -r

Gloss	• Surin Khmer	Standard Khmer ²	Khmer Orthography
1. 'two'	piɾ	pi: / pil	ពីរ
2. 'fertilizer'	ciɾ	ci:	ជីវ
3. 'Khmer'	khəməɾ	kmae	ខ្មែរ
4. 'to walk'	dɔɾ	daə	ទៅ
5. 'work'	kaɾ	ka:	ការ
6. 'slow, long time'	juɾ	yu:	យូរ
7. 'to flow'	hoɾ	ho:	ហូរ
8. 'door'	thəwiɾ	tvia	ទ្វារ
9. 'roping plant'	wiɾ	voal / voa	វល្លិ
10. 'to stand'	chuɾ	cho:	ឈរ

² Standard Cambodian Khmer phonetic spelling given here follows the Khmer Dictionary compiled by Headley et al. 1977.

11. 'peppery hot'	hɔɾ	haə/həl	ហ៊ាន
12. 'rat'	kənɔɾ	kandao / kandol	កណ្តុន
13. 'jackfruit'	khənɔɾ	knao/knol	ខ្នុរ
14. 'to take out of the ear'	təbɑɾ	tba:	ត្បូរ
15. 'to saw'	?ɑɾ	?a:	អាន

Lexical Set 2: finals -ɲ, -ŋ

Gloss	Surin Khmer	Standard Khmer	Khmer Orthography
1. 'to buy'	tɲ	tɲ	ទិញ
2. 'bullfrog'	hiŋ	hiŋ	ហ៊ិន
3. 'rain'	phliŋ	pliəŋ	ភ្លៀង
4. 'to know'	dɛŋ	dəŋ	ដឹង
5. 'long'	wɛŋ	vəŋ	វែង
6. 'children'	kameŋ	kmeəŋ	ក្មេង
7. 'to chase'	dɛŋ	dəŋ	ដេញ
8. 'kite'	khleŋ	klaeŋ	ខ្លែង
<hr/>			
9. 'to see'	khəŋ	khəŋ	ឃើញ
10. 'a kind of edible plant'	?aŋkaŋ	?aŋkaŋ	អង្កាញ
11. 'to love'	saləŋ	sraləŋ	ស្រឡាញ់
12. 'to invite'	?iŋcəŋ	?iŋcəŋ	អញ្ជើញ
<hr/>			
13. 'to spread sideways'	kaŋ	kaŋ	កាង
14. 'coconut'	doŋ	doŋ	ដូង
15. 'hole'	ruŋ	ruŋ	រូង
16. 'elder sibling'	boŋ	boŋ	បង

Lexical Set 3: finals -c, -k, -ʔ

Gloss	Surin Khmer	Standard Khmer	Khmer Orthography
1. 'to dig'	ci:c	ci:k	ជីក
2. 'armpit'	kluc	kliək	ភ្លើក
3. 'sky'	mi:c	me:k	មេឃ
4. 'ear'	trəci:c	traciək	ត្រចៀក
5. 'banana'	ce:c	ce:k	ចេក
6. 'eyes'	phəne:c	pnɛ:k	ភ្នែក
7. 'same, similar'	də:c, do:c	do:c	ដូច

8.	'bean'	sneɪc	sandaek	សណ្តែក
9.	'to fear'	khlaɪc	klaɪc	ខ្លាច
10.	'spirit, ghost'	khəmɔɪc	kmaoc	ខ្មោច
11.	'small'	tuɪc	toɪc/tuɪc	តូច
12.	'lemon'	kroɪc	kroɪc	ក្រូច
13.	'water'	tɪk	tɪk	ទឹក
14.	'morning'	prik	prik	ព្រឹក
15.	'to drink'	phʌ?	phək/phak	ផឹក
16.	'boat'	tu:k	tu:k	ទូក
17.	'pig'	cru:k	cru:k	ជ្រូក
18.	'high land'	ku:k	ko:k	គោក
19.	'lotus'	cho:k	chu:k	ឈូក
20.	'to pound'	bɔ?	bok	បុក
21.	'coconut shell'	təlɔ:k	tralaok	ត្រឡក
22.	'village'	sɔ?	srok	ស្រុក
23.	'nail'	krəcɔ:k	kraca:k	ក្រចក
24.	'to fall'	thəliə?	tleak	ធ្លាក់

3.2 Research sites

The data were collected from 37 amphoes (districts) of 10 provinces in the East and Northeast of Thailand which are densely inhabited by populations of Khmer speakers. The writer's purpose was to collect information from as many places as possible so that the variation and distribution of the final consonants being investigated could be revealed.

3.3 Informants

It should be emphasized that this dialect study is a geographical survey and *not* a sociolinguistic survey; therefore such social variables as age, sex, status, education were not strictly taken into consideration in the selection of informants. However, at least two to three people from each amphoe were selected. They include both men and women over 30 years of age; they use Khmer in their daily lives and have lived in the area since they were born. The informants were asked to pronounce each word in the wordlist.

4. The survey

The survey was conducted mainly in 1992 with rechecking in 1993-1994. The results are presented in the charts and maps on pages 10-12.

4.1 *Final trill*

The results of the survey as shown in Chart 1a and Chart 1b reveal that in most Khmer varieties spoken in Thailand the final trill /-r/ is pronounced. However, in some locations it is dropped (\emptyset), especially when it occurs in words with long vowels or diphthongs (words nos. 1 - 10 in Chart 1a). Out of 37 locations, 21 have final /-r/, eight locations do not, and eight are mixed areas. In the mixed area some words are pronounced with final /-r/ and some are not (\emptyset). In some areas final /-r/ in some words has been changed to /-l/, /-n/, or /-j/ (but there are only a few). The following examples illustrate the final /-r/ variants in words with long vowels and diphthongs.

-r		- \emptyset		-n/-l/-j	
pi:r	~	pi:	~	pi:n	'two'
chuər	~	cho:	~	chol/chon	'to stand'
ci:r	~	ci:	~	ci:j/ci:n	'fertilizer'

Words with short vowels (words nos. 11 - 15 in Chart 1b) are generally pronounced with final /-r/. However, in some words and in some locations /-l/, /-n/, or /-t/ can occur as variants of /-r/. Only in a few words in some locations is /-r/ not pronounced (\emptyset). The following examples illustrate final /-r/ variants in words with short vowels.

-r		-l/-t		-n/- \emptyset	
hər	~	həl	~	hən	'peppery hot'
ʔər	~	ʔət	~	ʔa	'to saw'

Since the occurrence of final /-r/ after long vowels and diphthongs shows variation among the Khmer dialects spoken in different places, the distribution of the final /-r/ variants is shown on Map 2.

The geographical distribution of final /-r/ variants is indicated on Map 2 as follows: the dark shaded pattern 1 indicates locations where all example words are pronounced with final /-r/ (or only one word is not so pronounced). Dark shaded pattern 2 indicates locations where most examples (except 2-3 words) are pronounced with final /-r/. These dark shaded areas occur in the central and eastern part of the core area of NK speakers which includes many districts in Surin, Srisaket, Ubon, Mahasarakham, Roi-et, and also a few districts in Buriram and Chachoengsaw in the west. The non-final /-r/ areas are represented by parallel line pattern 1 and parallel line pattern 2; these areas are mainly in Buriram and Sakaew (formerly a part of Pracinburi). The mixed areas are indicated by hatched pattern 5; these are in the districts between the final /-r/ areas and non final /-r/ areas. They include some southern districts of Surin bordering with Buriram and Cambodia and a district in Nakhornrachasima (Sengsang) which borders with final /-r/ and non final /-r/ areas of Buriram.

The distribution of final /-r/ in words with short vowels (nos. 11 - 15) is not represented in the map because it occurs in all locations. Variation only occurs in a few words in some locations as shown in Chart 1b.

Words	1	2	3	4	5	6	7	8	9	10
Locations										
1. Namyen (Ubon.)	r	r	r	r	r	r	r	r	-	r
2. Kantharak (Sri.)	r/ø	r	r	r	-	r	r	r	r	r
3. Khunhan (Sri.)	r	r	r	r	-	r	r	r	r	r
4. Khukhan (Sri.)	r	r	r	r	r	r	r	r	r	r
5. Phraibang (Sri.)	r/n	r/n	r/n	r/n	r/n	r/n	r/n	r/n	r/n	r/n
6. Buachet (Surin)	r	r	r	r	r	r	r	r	r	r
7. Sangkha (Surin)	r/ø	r	r	r	r	r	r	r	r	r
8. Kapchoeng (Surin)	ø	r/ø	r/ø	r/ø	r/ø	r/ø	r/ø	ø	r/ø	ø
9. Prasat (Surin)	r/ø	r/ø	r/ø	r	r/ø	r/ø	r	r/ø	r	r
10. Larduan (Surin)	r	r	r	r	r	r	r	r	r	r
11. Muang Surin (Surin)	r	r	r	r	r	r	r	r	r	r
12. Srikhoraphum (Surin)	r	r	r	r	r	r	r	r	r	r
13. Comphra (Surin)	r	r	r	r	r	r	r	r	r	r
14. Thatum (Surin)	r	r	r	r	r	r	r	r	r	r
15. Chumphonburi (Buri.)	r	r	r	r	r	r	r	r	r	r
16. Bankruat (Buri.)	ø	ø	ø	ø	ø	ø	ø	ø	ø	ø
17. Lahansai (Buri.)	ø	ø	ø	ø	ø	ø	ø	ø	ø	ø
18. Pakham (Buri.)	ø	ø	ø	ø	ø	ø	ø	ø	ø	r/ø
19. Nangrong (Buri.)	r	r	r	r	r	r	r	r	r	r
20. Nongki (Buri.)	r	r	r	r	r	r	r	r	r	r
21. Phlapphlachai (Buri.)	r	r	ø	r	ø	ø	r	ø	r	r
22. Prakhonchai (Buri.)	ø	ø	ø	ø	ø	ø	ø	ø	ø	ø
23. Nonghong (Buri.)	ø	ø	ø	ø	ø	ø	ø	ø	ø	ø
24. Lamplimat (Buri.)	ø	ø	ø	ø	ø	ø	ø	ø	ø	ø
25. Muang Buriram (Buri.)	ø	ø	ø	ø	ø	ø	ø	ø	ø	ø
26. Krasang (Buri.)	ø	r	ø	ø	ø	ø	ø	ø	r	ø
27. Khumuang (Buri.)	r	r	r	r	r	r	r	r	-	r
28. Satuk (Buri.)	ø	r	ø	ø	-	ø	ø	ø	r	ø
29. Phutthaisong (Buri.)	r	r	r	r	r	r	r	r	-	r
30. Sengsang (Nakorn.)	r/ø	r/ø	r/ø	r/ø	r/ø	r/ø	r/ø	ø	-	r
31. Taphraya (Sakaew)	r	ø	ø	ø	ø	ø	ø	ø	ø	ø
32. Aranyapathet (Sakaew)	ø	ø	ø	ø	ø	ø	ø	ø	ø	ø
33. Phayakkhaphum (Maha.)	r	r	r	r	r	r	r	r	-	r
34. Kasetwisay (Roi.)	r	r	r	r	r	r	r	r	r	r
35. Suwannaphum (Roi.)	r	r	r	r	r	r	r	r	r	r
36. Phonsai (Roi.)	r	r	r	r	r	r	r	r	r	r
37. Rachasan (Cha.)	ø	j	ø	ø	ø	ø	ø	ø	l	l

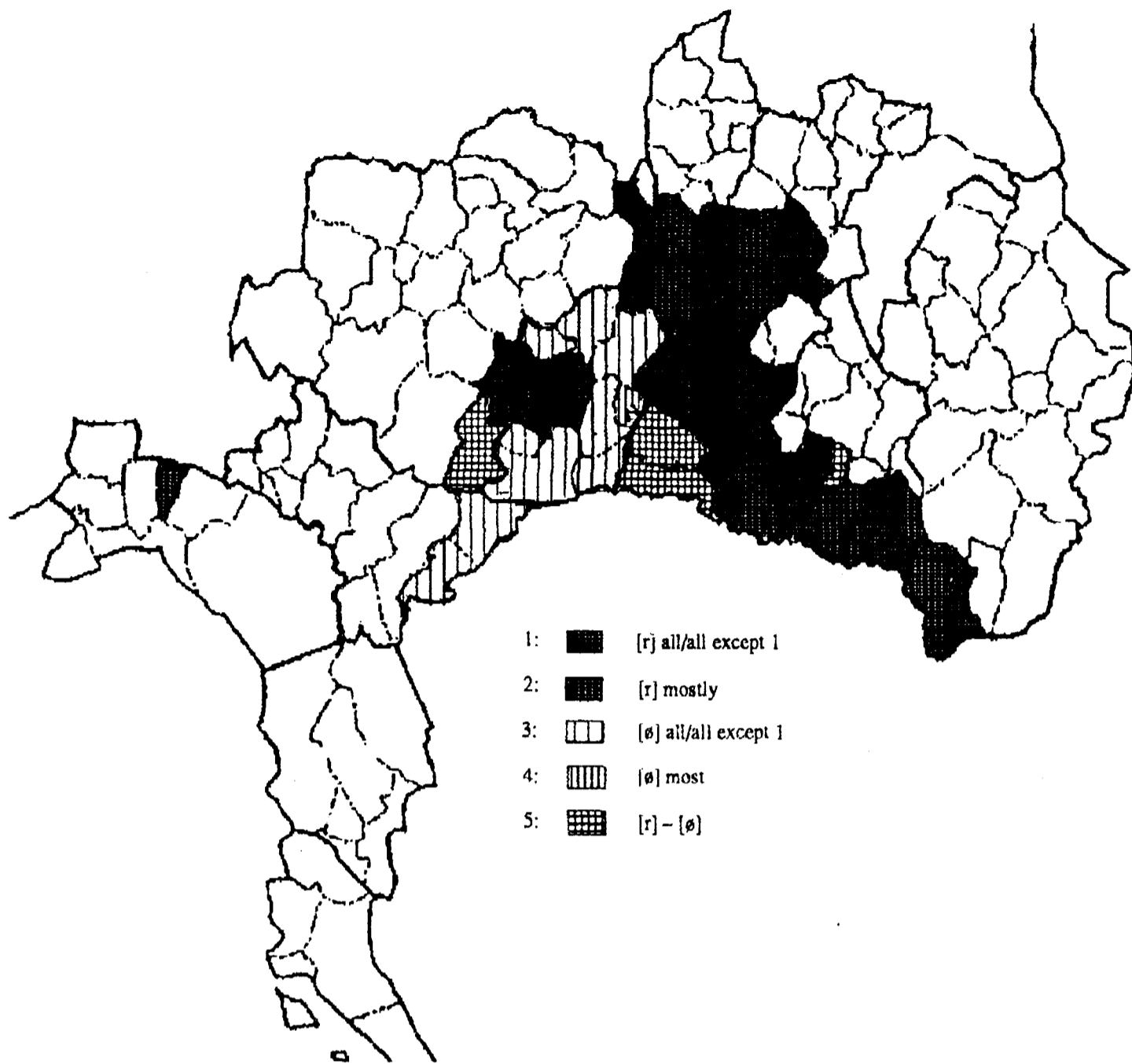
Chart 1a. /-r/ variants after long vowels and diphthongs (Note : /-/ = no word)

Words	11	12	13	14	15
Locations					
1. Namyen (Ubon.)	r	r	r	r	r
2. Kantharak (Sri.)	r	r	r	r	r
3. Khunhan (Sri.)	r	r	r	r	r
4. Khukhan (Sri.)	r	r	r	r	r
5. Phraibang (Sri.)	r/n	r/n	r/n	r/n	r/t
6. Buachet (Surin)	r	r	r	r	r
7. Sangkha (Surin)	r	r	r	r	r
8. Kapchoeng (Surin)	r	r	r	r	r
9. Prasat (Surin)	r	r	r	r	r
10. Lamduan (Surin)	r	r	r	r	r
11. Muang Surin (Surin)	r	r	r	r	r
12. Srikhoraphum (Surin)	r	r	r	r	r
13. Comphra (Surin)	r	r	r	r	r
14. Thatum (Surin)	r	r	r	r	r
15. Chumphonburi (Buri.)	r	r	r	r	r
16. Bankruat (Buri.)	r	r	r	r	-
17. Lahansai (Buri.)	r	r	r	r	-
18. Pakham (Buri.)	l	l	l	l	r/ø
19. Nangrong (Buri.)	r	r	r	r	r
20. Nongki (Buri.)	r	r	r	r	r
21. Phlapphlachai (Buri.)	r	r	r	r	r
22. Prakhonchai (Buri.)	r	r	r	r	-
23. Nonghong (Buri.)	r	r	r	r	-
24. Lamplaimat (Buri.)	r	r	r	l	-
25. Muang Buriram (Buri.)	r	r	r	l	-
26. Krasang (Buri.)	r	r	r	r	r
27. Khumuang (Buri.)	r	r	r	r	r
28. Satuk (Buri.)	r	r	r	r	r
29. Phutthaisong (Buri.)	r	r	r	r	r
30. Sengsang (Nakorn.)	r	r	r	r	ø
31. Taphraya (Sakaew)	r	r	r	r	ø
32. Aranyapathet (Sakaew)	l	l	l	l	ø
33. Phayakkhaphum (Maha.)	r	r	r	r	-
34. Kasetwisay (Roi.)	r	r	r	r	r
35. Suwannaphum (Roi.)	r	r	r	r	r
36. Phonsai (Roi.)	r	r	r	r	r
37. Rachasan (Cha.)	l	l	l	l	ø

Lexical Set 1: -r

- 1. pir 'two'
- 2. cir 'fertilizer'
- 3. khəməɾ 'Khmer'
- 4. dər 'to walk'
- 5. kər 'work'
- 6. juɾ 'slow, long time'
- 7. hoɾ 'to flow'
- 8. thəwɪər 'door'
- 9. wɪər 'roping plant'
- 10. chuər 'to stand'
- 11. hər 'peppery hot'
- 12. kənər • 'rat'
- 13. khənər 'jackfruit'
- 14. təbər 'to take out'
- 15. ʔər 'to saw'

Chart 1b. /r-/ variants after short vowels



Map 2. Distribution of final /-r/ variants after long vowels and diphthongs

4.2 Final palatal nasal

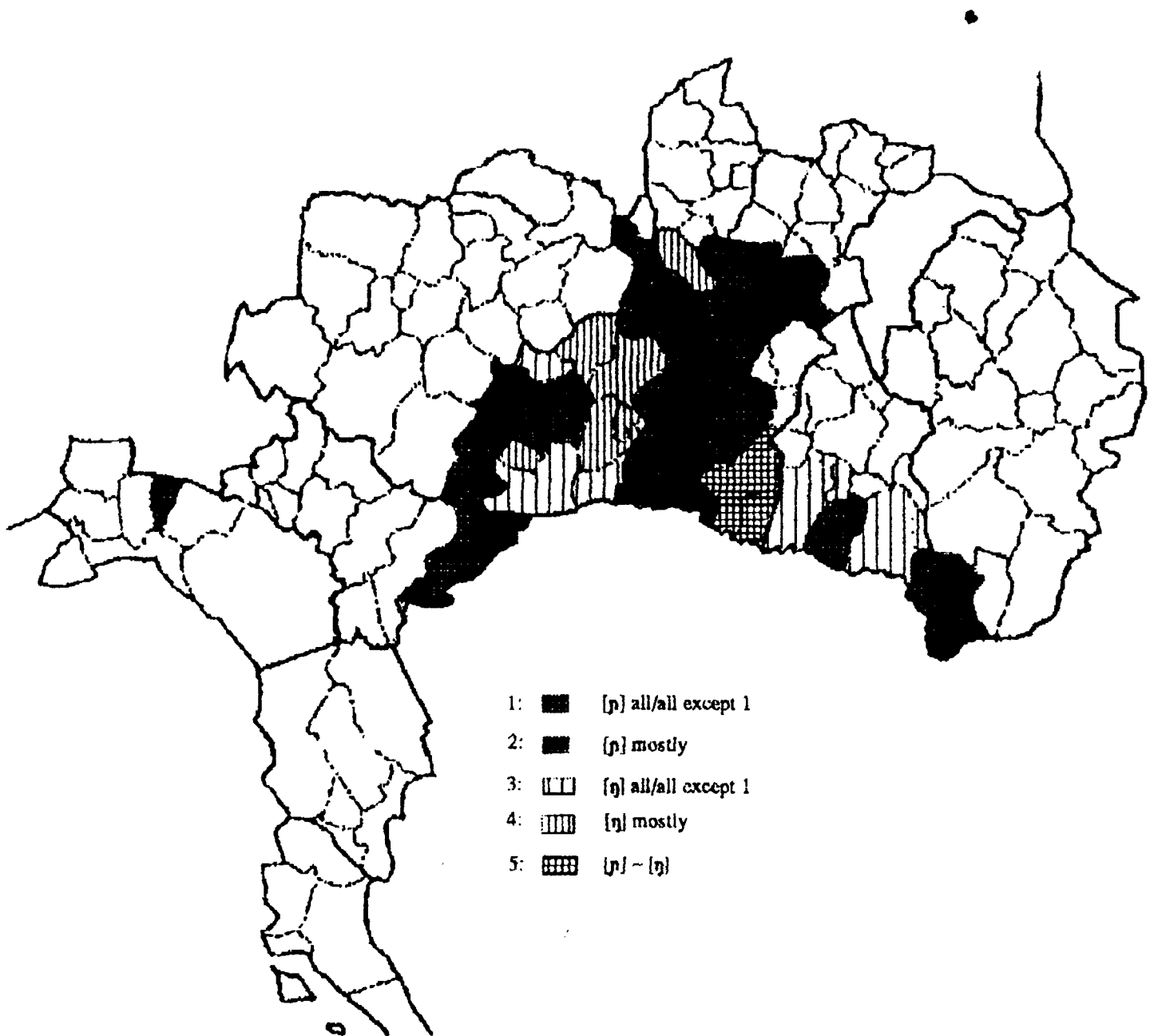
In Khmer palatal nasal /-ɲ/ and velar nasal /-ŋ/ are normally contrasting phonemes. However, when they occur after front vowels, they are not contrastive. In certain areas /-ɲ/ is used but in other areas /-ŋ/ is used as in the following examples.

-ɲ		-ŋ	
tɲ	~	tiŋ	'to buy'
phlɲ	~	phliŋ	'rain'
kameɲ	~	kameŋ	'children'

Chart 2a presents the survey of /-ɲ/ variants in words with front vowels used by Khmer speakers in 37 locations in Thailand. Final /-ɲ/ is used in more than half (or about 65%) of all locations investigated. Chart 2b presents the occurrence of final /-ɲ/ and /-ŋ/ after central and back vowels. Chart 2b confirms that the two phonemes /-ɲ/ and /-ŋ/ are contrastive even though /-j/ occurs as a variant of /-ɲ/ in two words in one location (in Srisaket)

Since there is the variation after front vowels, the geographical distribution of final /-ŋ/ after front vowels is also shown on Map 3.

Final /-ŋ/ occurs primarily in the central part of the core area (mainly in Surin, and some parts of Buriram) and with a scattering to the east (Srisaket and Ubon) and to the west (some parts of Buriram, Nakhornrachasima, Sakaew and Chachoengsaw). It is represented by dark shaded pattern 1 for all example words pronounced with final /-ŋ/ (or only one word is not so pronounced). Pattern 2 indicates the areas where most examples (except 2-3 words) are pronounced with final /-ŋ/. Final /-ŋ/ areas are found mainly in Buriram and Srisaket and are represented by pattern 3 for areas where all example words are pronounced with final /-ŋ/ (or only one word is not so pronounced). Pattern 4 indicates the areas where most examples (except 2-3 words) are pronounced with final /-ŋ/. The mixed areas indicated by pattern 5 where both final /-ŋ/ and /-ŋ/ are pronounced are found in some districts in Surin where they border the /-ŋ/ area of Srisaket.



Map 3. Distribution of final /-ŋ/ variants after front vowels

Words	1	2	3	4	5	6	7	8
Locations								
1. Namyen (Ubon.)	ɲ	ɲ	ɲ	ɲ	ŋ	ɲ	ɲ	ɲ
2. Kantharak (Sri.)	ŋ	ŋ	ŋ	ŋ	ŋ	ŋ	ŋ	ŋ
3. Khunhan (Sri.)	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ
4. Khukhan (Sri.)	ɲ	ŋ	ŋ	ŋ	ŋ	ŋ	ɲ	ŋ
5. Phraibang (Sri.)	ŋ	ŋ	ŋ	ŋ	ŋ	ŋ	ŋ	ŋ
6. Buachet (Surin)	ɲ	ɲ	ɲ/ŋ	ɲ/ŋ	ɲ/ŋ	ɲ	ɲ	ɲ/ŋ
7. Sangkha (Surin)	ɲ/ŋ	ɲ/ŋ	ɲ/ŋ	ɲ/ŋ	ɲ/ŋ	ɲ	ɲ	ɲ/ŋ
8. Kapchoeng (Surin)	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ
9. Prasat (Surin)	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ
10. Lamduan (Surin)	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ
11. Muang Surin (Surin)	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ
12. Srikhoraphum (Surin)	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ
13. Comphra (Surin)	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ
14. Thatum (Surin)	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ
15. Chumphonburi (Buri.)	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ
16. Bankruat (Buri.)	ŋ	ŋ	ŋ	ŋ	ŋ	ŋ	ɲ	ŋ
17. Lahansai (Buri.)	ŋ	ŋ	ŋ	ŋ	ŋ	ŋ	ɲ	ŋ
18. Pakham (Buri.)	ɲ	ɲ	ɲ	ŋ	ŋ	ŋ	ŋ	ŋ
19. Nangrong (Buri.)	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ
20. Nongki (Buri.)	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ
21. Phlapphlachai (Buri.)	ŋ	ŋ	ŋ	ŋ	ŋ	ŋ	ɲ	ɲ/ŋ
22. Prakhonchai (Buri.)	ŋ	ŋ	ŋ	ŋ	ŋ	ŋ	ɲ	ɲ/ŋ
23. Nonghong (Buri.)	ŋ	ŋ	ŋ	ŋ	ŋ	ŋ	ɲ	ŋ
24. Lamplaimat (Buri.)	ŋ	ɲ	ŋ	ŋ	ŋ	ŋ	ɲ	ŋ
25. Muang Buriram (Buri.)	ŋ	ɲ	ŋ	ŋ	ŋ	ŋ	ɲ	ŋ
26. Krasang (Buri.)	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ
27. Khumuang (Buri.)	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ
28. Satuk (Buri.)	ɲ	ŋ	ɲ	ɲ	ɲ	ɲ	ɲ	ŋ
29. Phuthaisong (Buri.)	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ
30. Sengsang (Nakorn.)	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ
31. Taphraya (Sakacw)	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ
32. Aranyapathet (Sakacw)	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ
33. Phayakkhaphum (Maha.)	ɲ	ŋ	ŋ	ŋ	ŋ	ŋ	ɲ	ɲ
34. Kasctwisay (Roi.)	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ
35. Suwannaphum (Roi.)	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ
36. Phonsai (Roi.)	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ
37. Rachasan (Cha.)	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ

Lexical Set 2a: -ɲ, -ŋ

1. tiɲ 'to buy'
2. hiɲ 'bullfrog'
3. phluɲ 'rain'
4. deɲ 'to know'
5. weɲ 'long'
6. kameɲ 'children'
7. deɲ 'to chase'
8. khleɲ 'kite'

Chart 2 a. /-ɲ/ variants after front vowels

Words	9	10	11	12	13	14	15	16
Locations								
1. Namyen (Ubon.)	ɲ	ɲ	ɲ	ɲ	ŋ	ŋ	ŋ	ŋ
2. Kantharak (Sri.)	ɲ	ɲ	ɲ	ɲ	ŋ	ŋ	ŋ	ŋ
3. Khunhan (Sri.)	ɲ	ɲ	ɲ	ɲ	ŋ	ŋ	ŋ	ŋ
4. Khukhan (Sri.)	ɲ	ɲ	ɲ	ɲ	ŋ	ŋ	ŋ	ŋ
5. Phraibang (Sri.)	ɲ/j	ɲ/j	ɲ	ɲ	ŋ	ŋ	ŋ	ŋ
6. Buachet (Surin)	ɲ	ɲ	ɲ	ɲ	ŋ	ŋ	ŋ	ŋ
7. Sangkha (Surin)	ɲ/ŋ	ɲ	ɲ	ɲ	ŋ	ŋ	ŋ	ŋ
8. Kapchoeng (Surin)	ɲ	ɲ	ɲ	ɲ	ŋ	ŋ	ŋ	ŋ
9. Prasat (Surin)	ɲ	ɲ	ɲ	ɲ	ŋ	ŋ	ŋ	ŋ
10. Lamduan (Surin)	ɲ	ɲ	ɲ	ɲ	ŋ	ŋ	ŋ	ŋ
11. Muang Surin (Surin)	ɲ	ɲ	ɲ	ɲ	ŋ	ŋ	ŋ	ŋ
12. Srikhoraphum (Surin)	ɲ	ɲ	ɲ	ɲ	ŋ	ŋ	ŋ	ŋ
13. Comphra (Surin)	ɲ	ɲ	ɲ	ɲ	ŋ	ŋ	ŋ	ŋ
14. Thatum (Surin)	ɲ	ɲ	ɲ	ɲ	ŋ	ŋ	ŋ	ŋ
15. Chumphonburi (Buri.)	ɲ	ɲ	ɲ	ɲ	ŋ	ŋ	ŋ	ŋ
16. Bankruat (Buri.)	ɲ	ɲ	ɲ	ɲ	ŋ	ŋ	ŋ	ŋ
17. Lahansai (Buri.)	ɲ	ɲ	ɲ	ɲ	ŋ	ŋ	ŋ	ŋ
18. Pakham (Buri.)	ɲ	ɲ	ɲ	ɲ	ŋ	ŋ	ŋ	ŋ
19. Nangrong (Buri.)	ɲ	ɲ	ɲ	ɲ	ŋ	ŋ	ŋ	ŋ
20. Nongki (Buri.)	ɲ	ɲ	ɲ	ɲ	ŋ	ŋ	ŋ	ŋ
21. Phlapphlachai (Buri.)	ɲ	ɲ	ɲ	ɲ	ŋ	ŋ	ŋ	ŋ
22. Prakhonchai (Buri.)	ɲ	ɲ	ɲ	ɲ	ŋ	ŋ	ŋ	ŋ
23. Nonghong (Buri.)	ɲ	ɲ	ɲ	ɲ	ŋ	ŋ	ŋ	ŋ
24. Lamplimat (Buri.)	ɲ	ɲ	ɲ	ɲ	ŋ	ŋ	ŋ	ŋ
25. Muang Buriram (Buri.)	ɲ	ɲ	ɲ	ɲ	ŋ	ŋ	ŋ	ŋ
26. Krasang (Buri.)	ɲ	ɲ	ɲ	ɲ	ŋ	ŋ	ŋ	ŋ
27. Khumuang (Buri.)	ɲ	ɲ	ɲ	ɲ	ŋ	ŋ	ŋ	ŋ
28. Satuk (Buri.)	ɲ	ɲ	ɲ	ɲ	ŋ	ŋ	ŋ	ŋ
29. Phutthaisong (Buri.)	ɲ	ɲ	ɲ	ɲ	ŋ	ŋ	ŋ	ŋ
30. Sengsang (Nakom.)	ɲ	ɲ	ɲ	ɲ	ŋ	ŋ	ŋ	ŋ
31. Taphraya (Sakaew)	ɲ	ɲ	ɲ	ɲ	ŋ	ŋ	ŋ	ŋ
32. Aranyaphet (Sakaew)	ɲ	ɲ	ɲ	ɲ	ŋ	ŋ	ŋ	ŋ
33. Phayakkhaphum (Maha.)	ɲ	ɲ	ɲ	ɲ	ŋ	ŋ	ŋ	ŋ
34. Kasetwisay (Roi.)	ɲ	ɲ	ɲ	ɲ	ŋ	ŋ	ŋ	ŋ
35. Suwannaphum (Roi.)	ɲ	ɲ	ɲ	ɲ	ŋ	ŋ	ŋ	ŋ
36. Phonsai (Roi.)	ɲ	ɲ	ɲ	ɲ	ŋ	ŋ	ŋ	ŋ
37. Rachasan (Cha.)	ɲ	ɲ	ɲ	ɲ	ŋ	ŋ	ŋ	ŋ

Lexical Set 2b: -ɲ, -ŋ

- 9. khəɲ 'to see'
- 10. ʔaŋkaɲ 'a kind of edible pla'
- 11. salaɲ 'to love'
- 12. ʔiɲcɔɲ 'to invite'
- 13. kaɲ 'to spread sideways'
- 14. doɲ 'coconut'
- 15. ruɲ 'hole'
- 16. boɲ 'elder sibling'

Chart 2 b. /-ɲ/ and /-ŋ/ after central and back vowels

4.3 Final palatal stop

As with the final *-ŋ*, the palatal stop */-c/* and velar stop */-k/* are normally two separate phonemes. However, after the front vowels, they are in variation. Moreover, glottal stop */-ʔ/* is also found as an additional variant of final */-c/* and */-k/*. The survey of final */-c/* variants after the front vowels is shown in Chart 3a, and final variation of */-c/* and */-k/* occurring after central and back vowels is shown in Chart 3b. While Chart 3b (words nos.9 - 12) confirms that final */-c/* and */-k/* are separate phonemes, Chart 3a (words nos.1 - 8) shows variation among final */-c/*, */-k/*, */-ʔ/*. Final */-c/* represents two thirds of all occurrences, whereas final */-k/* occurs in about one third and final */-ʔ/* only occurs in a few locations.

The following examples illustrate the variation between final */-c/*, */-k/*, and */-ʔ/* after front vowels.

<i>-c</i>		<i>-k</i>		<i>-ʔ</i>	
<i>ci:c</i>	~	<i>ci:k</i>	~	<i>ci:ʔ</i>	'to dig'
<i>phəne:c</i>	~	<i>phəne:k</i>	~	<i>phəne:ʔ</i>	'eyes'
<i>səne:c</i>	~	<i>səne:k</i>	~	<i>səne:ʔ</i>	'bean'

The geographical distribution of */-c/* variants after front vowels is also represented in Map 4.

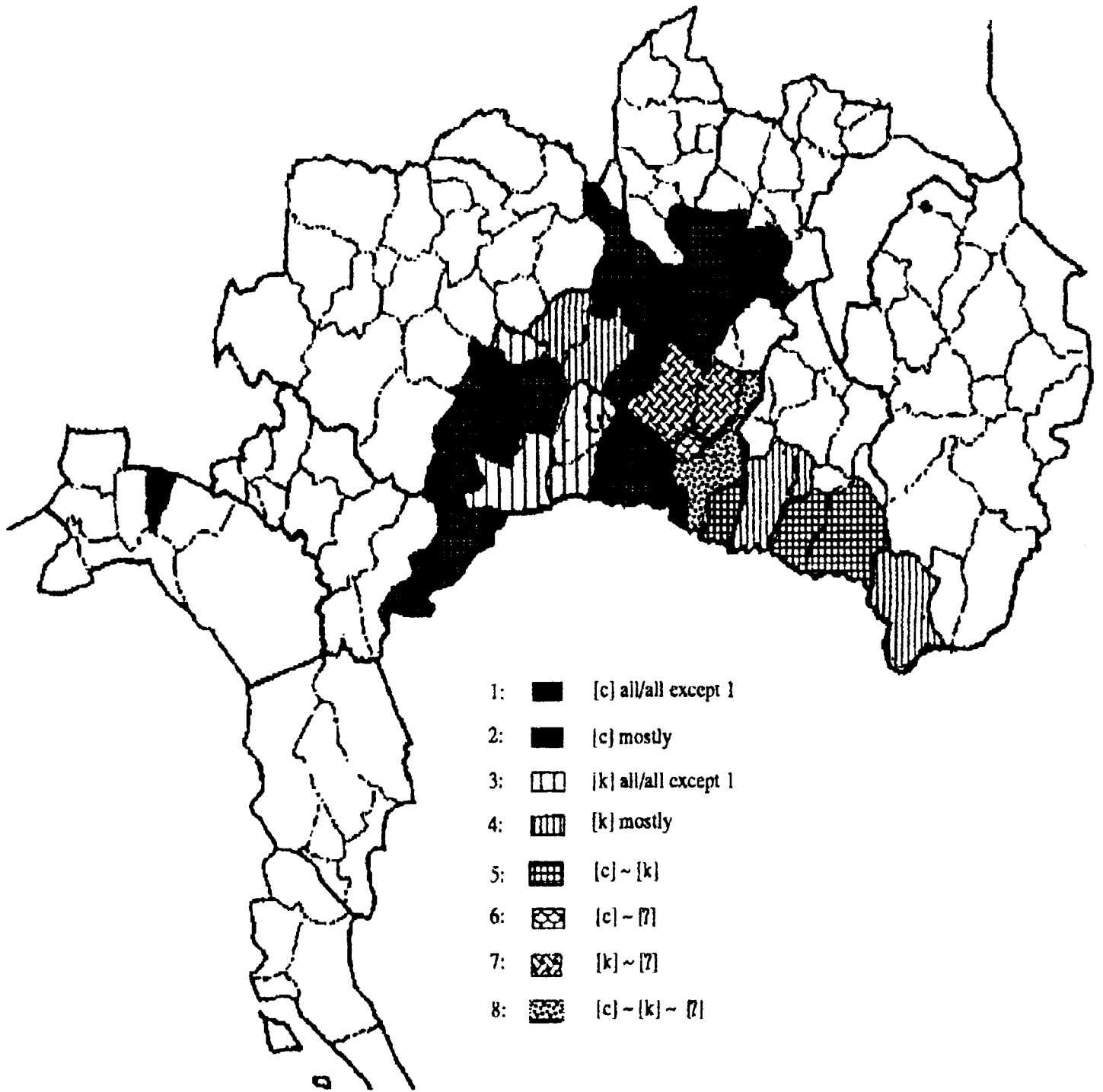
Dark shaded pattern 1 represents the locations where all words are pronounced with final */-c/* (or only one word is not so pronounced). Dark shaded pattern 2 represents the locations where most words (except 2-3 words) are pronounced with the final */-c/*. The */-c/* variant which is found in one-third of the occurrences is scattered mainly in Surin, Mahasarakham, Roi-et, some parts of Buriram, and Sakaew. Final */-k/* variant which also represents about one third of all occurrences is represented by pattern 3 and pattern 4. It is pronounced mainly in Buriram and some parts of Srisaket and Ubon. It is noticeable that another one-third of occurrences are in the mixed area where both */-c/* and */-k/* are found and are represented by pattern 5, or in some places */-c/* and */-ʔ/* occur and are represented by pattern 6, or */k/* and */ʔ/* occur and are represented by pattern 7, or */-c - -k - -ʔ/* occur and are represented by pattern 8. The mixed areas, especially the latter case, are those at the border where there are people from different places living together. It is noticeable that */-ʔ/* is found in the central part of Surin, that is, in Muang and Lamduan districts, and in some places it co-occurs with final */-c/*.

For words with central and back vowels, final */-c/*, cannot occur in variation with other consonants, e.g., *khla:c*, *khamɔ:c*, *tu:c*, *kro:c* (nos. 9 - 12); however, final */-k/* can vary with */-ʔ/* or the final consonant can reduce to \emptyset as seen in words 13 through 24 in Chart 3b. Some of the examples are presented below:

<i>-k</i>		<i>-ʔ</i>		<i>-∅</i>	
<i>tu:k</i>	~	<i>tu:ʔ</i>	~	<i>tu:</i>	'boat'
<i>caru:k</i>	~	<i>caru:ʔ</i>	~	<i>caru:</i>	'pig'
<i>srɔ:k</i>	~	<i>srɔ:ʔ</i>	~	<i>srɔ:</i>	'village'

In some words final /-ʔ/ is more common. There are only a few locations where /-k/ is pronounced as shown in Chart 3b with examples as listed below:

-ʔ		-k	
pruʔ	~	pruk	'early morning'
thaliəʔ	~	thaliək	'to fall'



Map 4. Distribution of final /-c/ variants after front vowels

Words	1	2	3	4	5	6	7	8
Locations								
1. Namyen (Ubon.)	c	k	k	k	k	k	c	k
2. Kantharalak (Sri.)	k	k	k	k	k	k	c	k
3. Khunhan (Sri.)	c/k	c/k	c/k	c/k	c/k	c/k	c	c/k
4. Khukhan (Sri.)	c	k	k	k	k	k	c	k
5. Phraibang (Sri.)	c	k/?	k	c/k	k	k	c/k	k
6. Buachet (Surin)	c/k	c/k	c/k	c/k	c/k	c/k	c	c/k
7. Sangkha (Surin)	c/k/?	c/k/?	c/k/?	c/k/?	c/k/?	c/k/?	c	c/k/?
8. Kapchoeng (Surin)	c	c/k	c	c	c	c	c	c/k
9. Prasat (Surin)	c	c	c	c	c	c	c	c
10. Lamduan (Surin)	?	?	?	?	?	?	c	c
11. Muang Surin (Surin)	c/?	c/?	c/?	c/?	c/?	c/?	c/?	c/?
12. Srikhoraphum (Surin)	c/?	c/?	c/?	c/?	c/?	?	c	c/?
13. Comphra (Surin)	c	c	c	c	c	c	c	c
14. Thatum (Surin)	c	c	c	c	c	c	c	c
15. Chumphonburi (Buri.)	c	c	c	c	c	c	c	c
16. Bankruat (Buri.)	k	k	k	k	k	k	c	k
17. Lahansai (Buri.)	k	k	k	k	k	k	c	k
18. Pakham (Buri.)	c	c	c	c	c	c	c	c
19. Nangrong (Buri.)	c	c	c	c	c	c	c	c
20. Nongki (Buri.)	c	c	c	c	c	c	c	c
21. Phlapphlachai (Buri.)	k	k	k	k	k	k	c	k
22. Prakhonchai (Buri.)	k	k	k	k	k	k	c	k
23. Nonghong (Buri.)	k	k	k	k	k	k	c	k
24. Lamplaimat (Buri.)	k	k	k	k	k	c	c	k
25. Muang Buriram (Buri.)	k	k	k	k	k	c	c	k
26. Krasang (Buri.)	k/?	c	c	c	c	c	c	c
27. Khumuang (Buri.)	c	c	c	c	c	c	c	c
28. Satuk (Buri.)	c	c	c	c	c	c	c	c
29. Phutthaisong (Buri.)	c	c/k	c	c	c	c	c	c
30. Sengsang (Nakom.)	c	c	c	c	c	c	c	c
31. Taphraya (Sakaew)	c	c	k	k	c	c	c	c
32. Aranyapathet (Sakaew)	c	k	c	c	c	c	c	c
33. Phayakkhaphum (Maha.)	c	k	k	c	k	k	c	k
34. Kasetwisay (Roi.)	c	c	c	c	c	c	c	k
35. Suwannaphum (Roi.)	c	c	c	c	c	c	c	c
36. Phonsai (Roi.)	c	c	c	c	c	c	c	c
37. Rachasan (Cha.)	c	?	c	?	k	c	c	c

Chart 3 a. /-c/ variants after front vowels

Lexical Set 3a: -c, -k, -?

1. ci:c 'to dig'
2. kli:c 'armpit'
3. mi:c 'sky'
4. trə:ci:c 'ear'
5. ce:c 'banana'
6. phə:ne:c 'eyes'
7. de:c, do:c 'to be the same, similar'
8. sə:ne:c 'bean'

Lexical Set 3b: -c, -k, -?

9. khla:c 'to fear'
10. khə:mə:c 'spirit, ghost'
11. tu:c 'small'
12. kro:c 'lemon'
13. tu:k 'water'
14. pu:k 'morning'
15. phək 'to drink'
16. tu:k 'boat'
17. cru:k 'pig'
18. ku:k 'high land'
19. cho:k 'lotus'
20. bə? 'to pound'
21. tɛlɔ:k 'coconut shell'
22. sɔ:ʔ 'village'
23. krə:pək 'nail'
24. thə:liə? 'to fall'

Words	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Locations																
1. Namyen (Ubon.)	c	c	c	c	k	k	k	k	k	k	k	k	k	k	?	-
2. Kantharalak (Sri.)	c	c	c	c	k	k	k	k	k	k	k	k	k	k	k	?
3. Khunhan (Sri.)	c	c	c	c	k	k	k	k	k	k	k	k	k	k	k	?
4. Khukhan (Sri.)	c	c	c	c	k	k	kz	k	k	k	k	k	k	k	k	k
5. Phraibang (Sri.)	c/t	c/t	c/t	c/t	k	k	k	k	k	k	k	k	k	k	k	k/?
6. Buachet (Surin)	c	c	c	c	k	k	k	k	k	k	k	k	k	k	k	k
7. Sangkha (Surin)	c	c	c	c	k/?	k/?	k/?	k/?	k/?	k/?	k/?	k/?	k/?	k/?	k/?	k/?
8. Kapchoeng (Surin)	c	c	c	c	k/?	k/?	?	/?	/?	k/?	?	?	?	?	?	?
9. Prasat (Surin)	c	c	c	c	k/?	k/?	?	k/?	k/?	k/?	k/?	?	k/?	?	?	?
10. Lamduan (Surin)	c	c	c	c	?	?	?	?	?	?	k/?	?	?	?	?	?
11. Muang Surin (Surin)	c	c	c	c	?	?	?	k/?	k/?	k/?	k/?	?	k/?	?	k/?	?
12. Srikhoraphum (Surin)	c	c	c	c	?	k/?	?	k/?	k/?	?	?	?	?	?	?	?
13. Comphra (Surin)	c	c	c	c	k	k	?	k	k	k	k	?	k	?	?	?
14. Thatum (Surin)	c	c	c	c	k	k	k	k	k	k	k	k/?	k	?	k	?
15. Chumphonburi (Buri.)	c	c	c	c	k	k	?	k	k	k	k	?	k	?	k	?
16. Bankruat (Buri.)	c	c	c	c	k	k	?	k	k	k	k	k	?	?	k	?
17. Lahansai (Buri.)	c	c	c	c	k	k	?	k	k	k	k	?	k	?	k	?
18. Pakham (Buri.)	c	c	c	c	?	?	?	k	k	k	k	?	k	?	k	?
19. Nangrong (Buri.)	c	c	c	c	?	?	?	k/?	k/?	k/?	k/?	?	k/?	?	k/?	?
20. Nongki (Buri.)	c	c	c	c	?	?	?	k/?	k/?	k/?	k/?	?	k/?	?	k/?	?
21. Phlapphlachai (Buri.)	c	c	c	c	k	k	?	k	k	k	k	k	k	?	k	?
22. Prakhonchai (Buri.)	c	c	c	c	k	k	?	k	k	k	k	k	k	?	k	?
23. Nonghong (Buri.)	c	c	c	c	k	k	?	k	k	k	k	?	k	?	k	?
24. Lamplaimat (Buri.)	c	c	c	c	k	k	k	k	k	k	?	k	k	?	k	?
25. Muang Buriram (Buri.)	c	c	c	c	k	k	k	k	k	k	?	k	k	?	k	?
26. Krasang (Buri.)	c	c	c	c	k	k	k	k	k	k	k	k	k	k	k	k
27. Khumuang (Buri.)	c	c	c	c	k	k	?	k	k	k	?	?	k	?	k	?
28. Satuk (Buri.)	c	c	c	c	k	k	?	k	k	k	k	k	k	?	k	?
29. Phutthaisong (Buri.)	c	c	c	c	k	k	k	k	k	k	k	k	k	k	k	?
30. Sengsang (Nakom.)	c	c	c	c	k	?	?	k	k	k	k	?	k	?	k	?
31. Taphraya (Sakaew)	c	c	c	c	k	k	?	k	k	k	k	k	k	?	k	-
32. Aranyapathet (Sakaew)	c	c	c	c	k	k	?	k	k	k	k	?	k	?	k	?
33. Phayakkhaphum (Maha.)	c	c	c	c	k	k	k	k	k	k	-	k	k	k	k	k
34. Kasctwisay (Roi.)	c	c	c	c	k	k	?	k	k	k	k	k	k	k	k	?
35. Suwannaphum (Roi.)	c	c	c	c	k	k	k	k	k	k	k	?	k	?	k	?
36. Phonsai (Roi.)	c	c	c	c	k	k	?	k	k	k	k	?	k	?	k/?	?
37. Rachasan (Cha.)	c	c	c	c	k	k	?	k	k	k	k	k	k	-	?	?

Chart 3 b. /-c/, /-k/, and /-/?/ after central and back vowels

5. Comparison with modern Cambodian Khmer orthography and standard Cambodian Khmer pronunciation

Since an alphabet may reflect the pronunciation of a language, the modern Khmer orthography which is generally considered the base for standard pronunciation of Cambodian Khmer should therefore be a reflection of standard Khmer pronunciation to a certain extent. The standard pronunciation here refers to the variety of Khmer that is taught in the schools, used for mass communication and spoken by educated Cambodians especially in their careful speech. Comparing the modern Khmer orthography and the standard Khmer pronunciation as presented in Huffman's *Spoken Cambodian* (1970) and the *Cambodian-English dictionary* of Headley, et al (1977) with the variation of final consonants reported in this survey for various locations, we find the following correspondences.

5.1 -វ /-r/

Cambodian Orthography	NK Pronunciation	
	After long vowels	After short vowels
-វ /-r/	-r, -∅, -l, -n, -j	-r, -∅, -l, -n, -t

Corresponding to final -វ/-r/ in standard written Khmer (e.g. in such words as ខ្មែរ 'Khmer' and ហ្មឺវ 'peppery hot') is final /-r/ in the various Khmer varieties of Thailand, especially in words with short vowels. However, words with long vowels or diphthongs may lose the final /-r/. Variants other than /∅/ include -l, -n, -j, or -t with very few occurrences. However, it is noticeable that in standard Cambodian Khmer pronunciation the final /-r/ is actually not pronounced in almost all cases but in some words with short vowel it is realized as final /-l/. Final /-r/ is generally a NK characteristic. It occurs mainly in the Surin dialect which is at the heart of the NK core area.

Gloss	Written Khmer	SK Pronunciation	NK Pronunciation
'Khmer'	ខ្មែរ /-r/	/khmae/	/khame:r ~ khame:i ~ khame:n/
'peppery hot'	ហ្មឺវ /-r/	/haə ~ həl/	/hʌr ~ hʌl ~ hʌn/
'fertilizer'	ដីវ /-r/	/ci/	/ci:r ~ ci:i ~ ci:n ~ ci:j/
'to saw'	វារវ /-r/	/ʌa/	/ʌar ~ ʌa:i ~ ʌat/

5.2 -ញ/-្រ/ and -ង/-រ្រ/

Cambodian Orthography	NK Pronunciation	
	After front vowels	After non-front vowels
-ញ /-្រ/ -ង /-រ្រ/	-្រ, រ្រ -្រ, -រ្រ	-្រ -រ្រ

Words written with final -ញ/-្រ/ in modern Cambodian Khmer orthography, (e.g. in such words as ទិញ ‘to buy’) may be pronounced with /-្រ/ or /-រ្រ/ after front vowels, whereas after the non-front vowels in words such as ឃើញ ‘to see’, they are always pronounced as /-្រ/. The words written with final /-រ្រ/ after the front vowel, such as ភ្លៀង ‘rain’, vary between finals /-រ្រ/ and /-្រ/; after the non-front vowels in words such as បង ‘elder sibling’ the final consonant is always pronounced /-រ្រ/.

Gloss	Written Khmer	SK Pronunciation	NK Pronunciation
‘to buy’	ទិញ /-្រ/	/tjɿ/	/tjɿ/~ /tir/
‘to see’	ឃើញ /-្រ/	/khəj/	/khəj/
‘rain’	ភ្លៀង /-រ្រ/	/phliəj/	/phliɿ~ phliɿ/
‘elder sibling’	បង /-រ្រ/	/bɑj/	/bɑj/

The final /-្រ/ variant occurs in many places in the NK speaking area, especially in the Surin dialect. In Surin even the Thai words ending with /-រ្រ/ are pronounced with /-្រ/; for example, *phleɿ* ‘song’ is pronounced *phleɿ*. It is noticeable that even in standard Cambodian Khmer pronunciation the palatalization of final consonants after front vowel also occurs in some cases.

5.3 -ច/-c/ and -ក/-k/

Cambodian Orthography	NK Pronunciation	
	After front vowels	After non-front vowels
-ច /-c/ -ក /-k/	-c, -ʔ -c, -ʔ, -k	-c -k, -ʔ

Final /-c/ in Cambodian Khmer orthography (e.g. in such words as ដូច ‘same, similar’ or តូច ‘small’) are pronounced /-c/ after non-front vowels. However, final /-k/ following a front vowel as in ដីក ‘to dig’ can vary between /-k/ and /-c/. It is interesting to see that in the heart of the core area, the Surin dialect around Surin city and Lamduan, final /-ʔ/ can also occur as a variant of both final /-c/ and /-k/ in words with front vowels but not for final /-c/ after non-front vowels. Some examples are listed below.

Gloss	Written Khmer	SK Pronunciation	NK Pronunciation
‘same, similar’	ដូច /-c/	/doɪc/	/dɛɪc, doɪc/
‘small’	តូច /-c/	/toɪc, tuɪc/	/tuɪc/
‘to dig’	ដីក /-k/	/ci:k/	/ci:k~ ci:c~ ci:ʔ/
‘eyes’	ភ្នែក /-k/	/phneɪk/	/phanɛk~ phane:c~ phane:ʔ/

6. Conclusion

This study of phonetic variation provides a picture of what Khmer dialects in Thailand are like. It reveals that Surin city (Muang district) and surrounding areas which constitutes the heart of the NK core area and has been accepted as standard NK (in an orthography meeting for NK held in 1989) still retains the final trill /-r/ which has been lost in standard Cambodian Khmer. Final -វ /-r/ in written Khmer is not pronounced in Cambodian speech. NK has developed the palatalization of velar nasal and velar stop. Final velar nasal -ង /-ŋ/ has been changed to palatal nasal ញ /-ɲ/, and final velar stop -ក /-k/ has been changed to palatal stop -ច /-c/ after the front vowels. This innovation is obviously caused by the influence of the preceding front vowel on the final consonant. Final glottal stop /-ʔ/ has developed in place of the final palatal and velar stops in some words. Its development conforms to the principle of “least effort” in pronunciation. The same kind of innovations may also be developing in certain areas of Cambodian Khmer pronunciation but a systematic study of this phenomenon has still not been done.

REFERENCES

- Bauer, Christian. *Northern Khmer Final Palatals*. 1989. Unpublished manuscript.
- Chambers, J.K. and Trudgill, Peter, 1980. *Dialectology*. Cambridge: Cambridge University Press.
- Headley, Robert K. Jr., Kylin Chhor, Jan Kheng Liem, LimHak Kheang, Chen Chun. 1977. *Cambodian-English Dictionary*. Washington, D.C.: The Catholic University of America Press.
- Huffman, Franklin. 1970. *Modern Spoken Cambodian*. New Haven: Yale University Press.
- Prakorb Phon-ngam. 1987. *A Phonological Comparison of Spoken Central Khmer (Phnom Penh) and Northern Khmer (Surin)*. MA. Thesis, Mahidol University, Thailand.
- Smalley, William A. 1964. *Ethnolinguistic survey of Northern Khmer speaking people in Northeast Thailand*. (with data on Kuy). Unpublished manuscript.
- Smalley, William A. 1976. *Phonemes and Orthography: Language planning in ten minority languages of Thailand*. Pacific Linguistics. Series C. No. 43
- Smalley, William A. 1988. *Multilingualism in the Northern Khmer Population of Thailand*. LS 10, No 2 395-408.
- Smalley, William A. 1994. *Linguistic Diversity and National Unity*. Chicago: The University of Chicago Press.
- Smyth, David A. ed. 1993 *Cambodian Linguistics, Literature and History, Collected Articles by Judith Jacob*. London: School of Oriental and African Studies, University of London.
- Suwilai Premsrirat and Sophana Sricampa. 1990. *Formulating A Thai-Based Northern Khmer Orthography*. Salaya: Institute of Languages and Culture for Rural Development, Mahidol University.
- Thomas, David. 1989. On the "language" status of Northern Khmer. *LC* 9 (1): 98-106.

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Appendix 1

90 words used in the survey (based on Surin Khmer dialect)

1.	pir	สอง	'two'
2.	ciɾ	ปุ๋ย	'fertilizer'
3.	kəstɾ	บุหรี	'cigarette'
4.	deɾ	เย็บ	'to sew'
5.	keɾ	มรดก	'heritage'
6.	khəmeɾ	เขมร	'Khmer'
7.	daɾ	เดิน	'to walk'
8.	cənaɾ	บันได	'staircase'
9.	kaɾ	งาน	'work'
10.	ʔa:haɾ	อาหาร	'food'
11.	ʔa:caɾ	อาจารย์, ผู้ทำพิธี	'ritual conductor'
12.	təmaɾ	แบน	'flat'
13.	juɾ	ช้า, นาน	'long time'
14.	muɾ	ม้วน	'to roll by hand'
15.	koɾ	กวน	'to stir'
16.	hoɾ	ไหล	'to flow'
17.	kəɾ	โกน	'to shave (hair)'
18.	ʔoɾ	ดีใจ	'to be delighted'
19.	thəwi:əɾ	ประตู	'door'
20.	wiəɾ	เถาวัลย์	'climbing plant'
21.	ciəɾ	ยาง	'rubber'
22.	ɲiəɾ	ลั่น	'to be shiver'
23.	chuəɾ	ยืน	'to stand'
24.	ŋəɾ	โกรธ สะบัดไป	'to be angry'
25.	haɾ	เผ็ด	'peppery hot'
26.	kənoɾ	หนู	'rat'
27.	khənoɾ	ขนุน	'jackfruit'
28.	təbaɾ	ป็น, แคะทุ	'to take out'
29.	ʔaɾ	เลื่อย (กริยา)	'to saw'
30.	səmaɾ	เชือกกล้วย	'banana skin rope'
31.	(kro:ɕ) chəmaɾ	มะกรูด	'a kind of lemon'
32.	kəpuɾ	บ้วนปาก	'to spit'

33.	kəmər	ปูน	'lime'
34.	khe: piŋbər	พระจันทร์เต็มดวง	'full moon'
35.	tij	ซื้อ	'to buy'
36.	hiŋ	อึ่งอ่าง	'bullfrog'
37.	phluŋ	ฝน	'rain'
38.	deŋ	รู้	'to know'
39.	weŋ	ยาว	'long'
40.	kameŋ	เด็ก	'child'
41.	deŋ	ไล่	'to chase'
42.	khleŋ	ว่าว	'kite'
43.	khəŋ	เห็น	'to see'
44.	saləŋ	รัก	'to love'
45.	ʔaŋkaŋ	(ดอก) ชี่เหล็ก	'a kind of edible flower'
46.	ʔiŋcəŋ	เชิญ	'to invite'
47.	kaŋ	ซีกางออกไป	'to spread side ways'
48.	doŋ	มะพร้าว	'coconut'
49.	ruŋ	รู	'hole'
50.	boŋ	พี่	'elder sibling'
51.	ti	(แมลง) ต่อย	'to sting'
52.	ci:c	ขุด	'to dig'
53.	klɯ:c	รักแร้	'armpit'
54.	mɯ:c	ท้องฟ้า	'sky'
55.	trə:cɯ:c	หู	'ear'
56.	ce:c	กล้วย	'banana'
57.	phəne:c	นัยน์ตา	'eye'
58.	də:c, do:c	เหมือน, คล้าย	'same, similar'
59.	səne:c	ถั่ว	'bean'
60.	khla:c	กลัว	'to fear'
61.	khəmɔ:c	ผี	'spirit, ghost'
62.	tu:c	เล็ก	'small'
63.	kro:c	มะนาว	'lemon'
64.	tu:k	น้ำ	'water'
65.	pru:k	เช้า	'morning'
66.	ʔantry:k	นั่งเขย่าขา	'to sit with knee shaking'
67.	ʔanna:k, na:k	เต่า	'turtle'
68.	phaʔ	ดื่ม	'to drink'

69.	ʔulʔ	แตงโม	'watermelon'
70.	taʔ	ชานเรือน	'sitting area of the house without a roof'
71.	khe: prəsaiʔ	เดือนพฤษภาคม	'May'
72.	plaʔ	คลุก	'to mix'
73.	tu:k	เรือ	'boat'
74.	cru:k	หมู	'pig'
75.	muʔ	หน้า	'face'
76.	lu:k	พระ	'monk'
77.	ku:k	บก, โดก	'high land'
78.	cho:k	ดอกบัว	'lotus'
79.	səno:k	รางหมู	'pig's trough'
80.	bəʔ	ดำ	'to crash'
81.	bə:k	ซัก	'to wash (cloth)'
82.	təlo:k	กะลา	'coconut shell'
83.	sroʔ	หมู่บ้าน	'village'
84.	doʔ	ถอน	'to pull up'
85.	krəco:ʔ	เล็บ	'fingernail'
86.	koʔ	สระ (ผม)	'to wash (hair)'
87.	pi:əʔ	คำพูด	'a word, a talk'
88.	niəʔ	คุณ, ทิด	'you, a man who have been through monkhood'
89.	thəliəʔ	ตก	'to fall down'
90.	li:c	รั่ว (น้ำรั่ว)	'to leak (water)'