Notes on Phonology and Orthography in several Katuic Mon-Khmer Groups in Northeast Thailand

John D. MILLER and Carolyn P. MILLER
Summer Institute of Linguistics

1. Background of the study

This study is primarily concerned with six communities of Northeast Thailand who represent groups within the So-Makong-Tri-Bru-Katang linguistic spectrum. These groups have been classified by K. Smith (1981) as being within the North Katuic subgroup. Dorothy Thomas (1976) places Bru with Pacoh within East Katuic, and Bradley (n.d) and Ethnologue (1992) classify Bru, Mangkong, Tri and So as being West Katuic and Katang as being East Katuic. Others such as Parkin (1991) and Thomas and Headley (1970) simply refer to them as Katuic. The six communities selected for study were chosen because they are recognized on the basis of outside study as well as insider perceptions, where these were available, to be distinct from each other, even though strong genetic similarities are present.

Two of the groups studied were in Ubon Ratchathani province (Ban Woen Buek, Amphoe Khong Chiam and Ban Dong Sen Kew, Amphoe Chanuman), though Amphoe Chanuman has since become part of Amnat Charoen province. Two are in Mukdahan province (Ban Dong Luang, Amphoe Dong Luang and Ban Rom Klaw, Amphoe Nikhom Khamsoi) and two are in Sakon Nakhon province (Ban Pho Thi Phai San, Amphoe Kusuman and Ban Khok Sa-at, Amphoe Phang Khon). For purposes of this paper, the languages spoken in these places will be referred to as dialects, though no claim about relationship or intelligibility is implied by the use of this term. Though all of these groups have shared cognate relationships of between 80% and 93% on a list of 207 common words, other factors must also be considered in determining comprehension and relationship between dialects.

The observations made in this paper are based on periods of two to four weeks working with language assistants from each of the areas mentioned. Previous more extensive research was done in a related dialect, the Bru dialect spoken in Quang Tri province in Vietnam. This has been both an advantage and disadvantage in studying the sound systems of these groups in Northeast Thailand. It is an advantage in that knowledge of a similar system leaves one's ears trained to recognize some of the subtle vowel distinctions found in these languages. But it is a disadvantage in that one tends to hear things in relation to already known patterns, and one may consequently miss some of the finer distinctions.

2.   Resources and Methodology

Previous studies of these and other Katuic dialects were extremely helpful to us. Descriptions of the phonologies of Dong Luang dialect by Chollada (1986) and Darunee (1986), of Woen Buek by Theraphan (1979) and Theraphan and Puengpa (1980), of So Kusuman by Malai (1980) and Gainey (1985) as well as those describing Katu (Wallace 1969), Kui (B. Johnston 1976), Gainey 1985, Preecha 1993), Kuay (Pailin 1980), Pacoh (Watson 1964), Ngeq (R. Smith 1973) and Ta'uaih (v.d. Haak 1993) were studied. Summary charts were made of these and other Mon-Khmer phonologies which were available.

Resources detailing efforts to write Katuic languages in Thai script were fewer. We were grateful for discussions of Kui orthography (B. Jonhston 1976, v.d. Haak 1993), Woen Buek orthography (Theraphan and Puengpa 1980), and for several unpublished sources. These included Mattix's proposal for writing Katuic languages in Vietnamese, Thai and Lao script (n.d.) and Keele's notes on So orthography (1991). We also had the benefit of Lao script proposals for Katu (Costello and Kamluan 1993), Ngeq (R. Smith 1973) and Ta'uaih (v.d. Haak 1993). Thai and Lao script proposals for other Mon-Khmer languages were also studied. These included reports from orthography discussions conducted for Northern Khmer speakers (Dorothy Thomas 1990), Filbeck's proposal for Mal (Thin) (1976), Preisig for Kmhmu' (n.d.), Schlatter for Lavua' (1976) and Bishop and Peterson for Maniq (1994).

Language assistants were chosen who were fluent native speakers of the dialects to be studied and who were also literate in Thai. The corpus on which the study is based included tape-recorded texts which were transcribed, texts written by the assistant in his own dialect, a grammar questionnaire, and a 1500-word thesaurus in Thai, Lao and English from which the form in the target dialect was elicited. The target dialect component of the thesaurus was sorted by computer into a rhyming dictionary format so that vowel contrasts could be better checked (K. Smith 1981). Speakers were given options for writing non-Thai sounds or combinations of sounds based on precedents established or suggested for related languages. Their choices were affected by their perception of the sounds of their own language in relation to the sounds represented by the various symbols in Thai.

In April 1994 representatives of the six dialects who had been involved in the earlier efforts to write their own dialect met together for a week along with Thai and foreign linguists who had interest and experience in related languages. At this time various options for writing the non-Thai combinations were again discussed along with some of the advantages and disadvantages of each option. Opportunity was given for interaction between the participants as well as an opportunity to again go over the materials previously produced. In addition, participants worked to produce a health book in their own dialect.

3. Consonants

3.1 *Initial consonants*

3.1.1 *Phonemic representation of initial consonants*

Initial consonant inventories of the dialects studied were fairly similar and not unlike those reported for related groups. Initial consonants for all six groups are:

		Labial	Alveolar	Palatal	Velar	Glottal
Stops	vl.	p	t	c	k	ʔ
	asp.	ph	th		kh	
	vd.	b	d			
Fric.				s	h	
Nasal		m	n	ɲ	ŋ	
Flap			r			
Approximant		w	l	j		

Not found for any of these groups were the pre-ploded stops, the voiced velar stop or the aspirated palatal stop found in Katu (Wallace 1969). Nor was the voiced palatal stop reported for Katu (Wallace 1969), Kuy (B. Jonhston 1976, Gainey 1985), Kuai of Saravan (v.d. Haak 1993a), and Ngeq (R. Smith 1973) found for any of them. It is interesting to note that the voiced palatal stop was also not reported to occur in Kataang (v.d. Haak 1993a), Kuay of Suphanburi (Pailin 1980) or Kuay of Champasak (v.d. Haak 1993a). The labial fricative [f] reported for So Kusuman (Malai 1980) was found only in words borrowed from Thai or Lao. The aspirated palatal stop [ch] reported for So was not found. This is said by Gainey to occur only in combination with [ɲ] and to alternate with [s] in this position.

The inventory of initial consonants is the same as that reported for Ta'uaih (v.d. Haak 1993), Pacoh (Watson 1964), Bru of Vietnam (Miller 1967), Kataang (v.d. Haak 1993a) and Kuay of Surin (Preecha 1991) and Champasak (v.d. Haak 1993a).

Initial consonant clusters varied somewhat in occurrence. This was no doubt due, in part, to the size of the corpus of data. Those found most commonly were: [pr], [tr], [kr], [br] and [pl], [kl], [bl]. Less common were [thr], [khr], and [khl]. In Rom Klaw dialect one speaker frequently used [kr] where another used [tr].

3.1.2 *Orthographic representation of initial consonants*

Writing initial consonants posed little problem for most of the language assistants. The following Thai script orthographic representations were used by all the groups:

		Labial	Alveolar	Palatal	Velar	Glottal
Stops	vl.	ป	ต	จ	ก	อ
	asp.	พ	ท		ค	
	vd.	บ	ด			
Fric.				ซ	ส	
Nasal		ม	น	ญ	ง	
Flap			ร			
Approximant		ว	ล	ย		

In writing words borrowed or related to Thai, some tended to follow Thai writing conventions. But when it was suggested that different classes of consonants were not needed in writing the Mon-Khmer language, they readily agreed and generally began to write even borrowings using these symbols. Some experienced a little difficulty distinguishing between ย and ญ word initially, but this generally posed no problem after a few examples.

Following the precedent of Keele (1991), Theraphan and Puengpa (1980) and Mattix (n.d.), we generally suggested that the same initial consonant be used preceding vowels of either register. This was acceptable to language assistants from Rom Klaw, Khok Sa-at, Pho Thi Phi San, Dong Luang and Woen Buek. Some of them initially tended to write aspiration on the consonant when it was followed by a breathy vowel, and Thai words with an initial aspirated stop when borrowed into the Mon-Khmer dialect were frequently brought in with an unaspirated consonant and breathy vowel.

Huffman (1976:580) refers to "Stage 2" languages in which voiced initial consonants are devoiced but contrast with the unaspirated consonants in that they "are lax and accompanied by slight aspiration...which conditions a lax breathy quality in a following vowel." As Huffman points out, these lax initials also contrast with the aspirated series of stops (which are not followed by breathy vowels) in both degree and position of aspiration.

Huffman noted that there was less allophonic distinction in initial consonants in Bru than in any of the other Mon-Khmer languages which he had studied, but speakers of several of the dialects of this study perceived these consonants as being different in some way.

Because aspiration as represented by the Thai consonants is also found in the dialects studied, most of the assistants agreed that stops occurring before breathy vowels were not the same as those represented by the aspirated consonant symbols in Thai. Furthermore, the register contrast was also found following consonants other than stops. Only the language assistant from Dong Sen Kew continued to write aspirated stops before breathy vowels. When it was suggested that he choose the high class Thai symbol for this consonant as is done in Kui (B. Johnston 1976; v,d. Haak 1992), he firmly rejected this as not being the correct representation. When it became clear to him that writing only the aspirated middle class consonant before a breathy vowel led to ambiguity, he consented to also mark vowel quality

(as presented in Section 4), but he continued to use the aspirated middle class stops before breathy vowels.

Consonant clusters were written as combinations of the symbols used for the parts of the cluster. These generally proved to be no problem.

3.2 Final consonants

3.2.1 Phonemic representation of final consonants

Final consonants were less standard. Final consonants found were as follows:

	Labial	Alveolar	Palatal	Velar	Glottal
Stops vl.	p	t	c*	k	ʔ
Fric.			s		h
Nasal	m	n	ɲ*	ŋ	•
Flap		r*			
Approximant	w	l*	j		
Post-glott.	wʔ		jʔ		

* indicates those not found in all dialects.

While all six groups had most final consonants in common, the groups varied (sometimes even between speakers of the same dialect) in regard to final [ɲ] and [c]. For example, while one speaker from Pho Thi Phai San retained the final [c] as reported by Gainey (1985), Gutwein (1980) and Keele (1991) for So, the other used [t] in this position even where this led to homophones. While the first retained final [ɲ] for a few words, the other used [n] in these cases. The same phenomenon was observed for these two final consonants between different speakers of Khok Sa-at dialect. Rom Klaw continues to maintain the distinction between these final consonants. The other three groups, Dong Seng Kew, Woen Buek and Dong Luang did not have final [ɲ] or [c].

Other Katuic languages which have final [ɲ] and [c] are Kui (B. Johnston 1976, Gainey 1985), Ngeq (R. Smith 1973), Pacoh (Watson 1964), Ta'uaih (v.d. Haak 1993b) and Katu (Wallace 1969). These final consonants are not reported for Bru Quang Tri (Miller 1967), Katang (v.d. Haak 1993a) or any of the Kuai groups (Pailin 1980, v.d. Haak 1993a).

In taking word lists from a larger number of villages in Northeast Thailand, it was noted that in some cases final [r] and final [l] were each given by different respondents from the same village to an elicited form. When questioned about this, respondents said that either form was correct. With the language assistants who came to work more extensively on the language, however, usually only one form was felt to be the "correct" form. Dong Sen Kew dialect was most limited in regard to occurrence of these phonemes in word final position. All words which in other dialects have a final [r] or [l] were pronounced (and written) by the Dong Sen Kew

assistant with a final [n]. Perhaps this reflects the high rate of assimilation to Thai and Lao in that area, though this would need to be checked more widely.

In Dong Luang dialect, one speaker generally produced final [j] where other dialects have final [r] or [l]. The second speaker produced final [l] but not final [r]. The language assistant who pronounced no final [r] or [l] also generally pronounced [l] in initial and medial position where other dialects had [r]. Though he never pronounced the final [l], he did choose to write it rather than [j] in a number of occurrences (particularly following [e] or [ɛ]). Clark Aspinwall, who is currently studying Dong Luang dialect, says (personal correspondence) "we have heard no final -r in this area. With adults over the age of 30, almost all of them will use the final -l. The final -y is used by the children and teenagers, although this age group seems to be expanding."

The preference for [l] over [r] was also noted in speakers of Rom Klaw dialect. Pho Thi Phai San speakers used final [r] only for the word [bar] 'two' in the data studied. In other words where [r] might be expected, they used [l]. Khok Sa-at and Woen Buek dialects maintain the contrast between these two final consonants.

In other Katuic languages the status of [r] and [l] as contrastive phonemes is also reported to be tenuous. Watson (1964) says that in Pacoh these do not contrast word finally. B. Johnston (1976) says that in Kui they are contrastive only for "purists" in either initial or final position. Van der Haak (personal communication) notes, however, that in some Kui dialects these are contrastive in both initial and final position.

Listed in the chart above as final consonants are [s], [wʔ] and [jʔ]. Although these are treated by some authors as consonant clusters ([s] being considered [jh]), they are found in all six dialects and are noted in other descriptions of Katuic languages. Other languages such as Ta'uaih and Pacoh also have post-glottalized nasals and [l]. In fact, Diffloth (1989) reports a full series of post-glottalized continuants in Talan and Ong. Not found in the present corpus was [wh] reported by Theraphan and Puengpa (1980) and Gainey (1985) for Woen Buek dialect.

3.2.2 Orthographic representation of final consonants

The orthographic representation chosen by the language assistants for final consonants is as follows:

	Labial	Alveolar	Palatal	Velar	Glottal
Stops vl.	บ	ด	จ*	ก	ห์
Fric.			ยธ		ส
Nasal	ม	น	ญ*	ง	
Flap		ร*			
Approximant	ว ่	ล*่	ย		
Post-glott.	วห์	ยห์			

* indicates representation where these are found

For the most part, these choices represent symbols used in orthographies already in existence for Katuic languages. A few differences should be noted. Theraphan and Puengpa (1980) used the voiceless stops [ʋ] and [ʀ] in final as well as initial position. But most of the language assistants used the more familiar Thai voiced consonants in final position as did Keele (1991) for So, Johnston (1976) for Kui and Mattix (n.d.) in his proposal.

Final glottal stop is represented in several ways, as is this same phoneme in Thai. Generally after short vowels it presented no problem, since a Thai precedent is already established. Following long vowels, semi-vowels or low glides the symbol [ʍ] was used as listed above. This also followed the precedent established in Kui and So, but differed from the [ə] suggested by Theraphan and Puengpa (1980). Ngeq (R. Smith 1993), Katu (Costello and Khamluan 1993) and Ta'uaih (v.d. Haak 1993) in Lao- script orthographies reportedly use the tone marker [x̌] over the initial consonant to represent final glottal stop in these environments.

Khok Sa-at, Pho Thi Phai San and Rom Klaw appear to have no long/short contrast before glottal stop. Vowels in that position (with the exception of glides) were perceived to be short. A strong preference was also noted in these dialects for short vowels before final [h].

Distinguishing between final [ʍ] and [ə] proved a major problem to those learning to write their language for the first time. The problem seemed to be more conceptual than orthographic. All of them could readily hear and understand the difference when it was pointed out to them, but in writing their language, it was very difficult for them to distinguish between these sounds and to write them accordingly. This was also reported to be the case for speakers of Kui (v.d. Haak 1991). It would be good to see if using another symbol for final glottal would help in distinguishing these.

Other sounds which required practice in recognizing and writing were the non-Thai combinations involved in the post-glottalized [j] and [w] and the final [s]. Only one person from Woen Buek suggested that final [s] should be written [ʁ] and then only in some environments where it sounded to him like [s]. Others accepted the suggested [ʋʀ] (= [jh]) symbolization without question.

In Woen Buek dialect the question was raised as to how to write the pre-stopped final nasals which are common in that dialect. These are not contrastive with regular nasals, but they were recognized as being phonetically different from the Thai final nasals. We suggested that these be written with simple nasals (as in Theraphan and Puengpa 1980), and this did not prove to be a problem in reading or writing.

4.   Vowels

The complexity of Katuic Mon-Khmer phonology and the differences between the sound systems of these languages and those of Thai and Lao show up most clearly in the vowels. And it is in this area that even closely related groups show the most variation.

In the following charts, second register refers to the lax, breathy register commonly found in Katuic languages and first register to the tense or non-breathy register. In the dialect of Bru spoken in Quang Tri, Vietnam, second register was considered to be most like the "normal" or Vietnamese counterpart vowel for high and mid vowels. For languages in Thailand, however, the first register vowels have generally been considered to be more like Thai vowels and thus the "normal" or unmarked form. In all dialects, second register vowels tend.to be higher in tongue height position (for the high and mid vowels) than do their first register counterparts. These second register high and mid vowels also have, to varying degrees, a lax or breathy quality. In the low vowels, as in the high and mid vowels, the first register vowel is heard to be like the Thai counterpart. The second register vowel is marked by an onglided quality.

Thai study and earlier studies done with Quang Tri dialect (Miller 1967) seem to support Huffman's theory (1985:144) that lax high vowels and tense low vowels remain stable; tense high vowels have lowered onsets; and lax low vowels have raised onsets. Mid vowels, he notes, may participate in either pattern depending on the language. In Quang Tri dialect, speakers came to relate the register contrast for high and mid vowels with the sound of different types of gongs. Second register was considered to be [kriːm], the sound of the larger, deeper-voiced gong. First register was said to be [preːŋ], the sound of the smaller, higher-voiced gong. In earlier studies we did not include the low onglided vowels as being contrastive in register, but a study of native speakers perception by E. Johnston (1968) said that these were considered to be single units and Vuong Huu Le (1992) says they are considered by Bru speakers to be "lower" in tone or timbre, thus patterning as second register vowels.

In Thailand, one of the early language assistants in this study referred to the second register as having a big voice [siəŋ puːt], and the other as having a small voice [siəŋ kij?] or a normal voice. We continued to use these terms with speakers of the other dialects also to refer to the register distinction. Van der Haak has said that the Kui refer to second register as being 'heavy' and first register as being 'light'.

All of the dialects studied demonstrate register contrast, though in differing degrees. In other Katuic languages available for comparison, only Katu, Ta'uaih, and lowland Pacoh (R. Watson 1964) report no register distinction. Ngeq and highland Pacoh have very minimal distinctions, Pacoh only in the mid vowels and Ngeq in tongue height position for long [i] and [u] and in ongliding with both long and short [a] and [ɔ]. More recently (R. Watson 1980, R & S Watson 1979) the Pacoh data has been reanalyzed as a two-register system. Talan and Ong are said to demonstrate a contrast between "creaky" and "plain" register. The widely differing phonetic manifestations of register, as Pittman (1985) has noted, sometimes make it difficult to treat register as a single feature or mark it in a single way.

4.1 Front vowels

4.1.1 Phonemic representation of front vowels

Least problematic for the dialects of this study were the front vowels. Vowels were in one of three tongue height positions which fairly closely approximated the

phonetic value of the same vowels in Thai. They occurred, in most dialects, in one of two lengths and in one of two registers as shown in the following chart:

FRONT VOWELS

		Short	Long
High	2nd register	i̱	i̱ː
	1st register	i	iː
Mid	2nd register	e̱	e̱ː
	1st register	e	eː
Low	2nd register	ɛ̱	ɛ̱ː
	1st register	ɛ	ɛː

Not all of the dialects studied demonstrated a four-way contrast in each of the vowel height positions shown. Only Woen Buek dialect showed clear register contrasts for both long and short vowels in all three positions. Rom Klaw dialect demonstrated register contrast for short [i] and [e] but not for [ɛ], and evidence for register contrast for long [eː] was fairly weak. Pho Thi Phai San had register contrast for short [i] but for neither of the other short vowels, and no example of second register [ɛː] was encountered in the sample. Dong Sen Kew dialect had very little evidence of register contrast in the short vowels, and no example of second register [ɛː] was found. Khok Sa-at dialect had no evidence of register contrast in the short vowels and for long vowels marked second register only for [iː]. Dong Luang demonstrated the least register contrast, marking no difference in short vowels and almost none in long vowels.

In other Katuic groups, Bru Quang Tri does not have register contrast for short vowels. In earlier studies no register contrast was found for long [ɛː], but a recent study (Vuong Huu Le 1992) reports examples of register contrast for long [ɛː] in that dialect. B. Johnston (1976) reports neutralization between short [e] and [ɛ] in Kui, but says that register contrast is demonstrated for all long and short forms. Pailin (1980) reports full contrasts for Kuai of Suphanburi.

4.1.2 *Orthographic representation of front vowels*

Where the form existed in a particular dialect, it was written in the follwing way:

FRONT VOWELS

	Short		Long	
	Glottal	Closed	Open	Closed
High 2nd register	x́	x́x	x̄	x̄x
High 1st register	x̂	x̂x	x̂	x̂x
Mid 2nd register	ɩx́ː	ɩx́x	ɩx	ɩxx
Mid 1st register	ɩxː	ɩx̂x	ɩx	ɩxx
Low 2nd register	ɛɩx́ː	ɛɩx́x	ɛɩx	ɛɩxx
Low 1st register	ɛɩxː	ɛɩx̂x	ɛɩx	ɛɩxx

[x] on the chart above represents a consonant symbol.

Since the phonetic value of the front vowels in the dialects studied fairly closely approximated the corresponding Thai values that the language assistants had learned in school, these representations were fairly straightforward. Only the register contrast was different and the second register was recognized by breathiness in the high and mid vowels and slight ongliding in the low vowel. It was easiest for the language assistants to recognize the register contrast after an unaspirated stop, but the contrast was often not recognized at all until encountered in rhyming contrasts.

4.2 *Central vowels*

4.2.1 *Phonemic representation of central vowels*

All groups except Rom Klaw had more positions for central vowels than are found in Thai or Lao. The four positions commonly found are shown on the following chart:

CENTRAL VOWELS

		Short	Long
High	2nd register	ị	ịː
	1st register	ɨ	ɨː
Mid	2nd register	ə̣	ə̣ː
	1st register	ə	əː
Low-mid	2nd register	ʌ̣	ʌ̣ː
	1st register	ʌ	ʌː
Low	2nd register	ạ	ạː
	1st register	a	aː

The high and low positions on the chart fairly closely approximate the positions of the Thai vowels to which they correspond. The mid and low-mid positions vary slightly from dialect to dialect, but the mid vowel seems to relate most closely to the Thai mid-central vowel. Rom Klaw dialect had only three positions of high, mid and low, but with length and register contrasts in all positions.

Pho Thi Phai San and Khok Sa-at did not have a second register counterpart for the low-mid vowel. Theraphan and Puengpa (1980) list a breathy counterpart for this vowel in Woen Buek dialect, but it was not encountered in the sample taken for this study. Dong Sen Kew dialect had both first and second register short vowels in low-mid and low positions, but did not have a second register long vowel in these positions. Nor was a second register short vowel found for the mid position in Dong Sen Kew dialect. Dong Luang had second register short vowels only for high and low positions, and no examples of register contrast for the mid vowel. Second register vowels were encountered infrequently except in the low position where the second register [ạ] was common for both long and short vowels.

Second register on the high and mid vowels was characterized by a breathy quality. On the low-mid and low vowels it was characterized by ongliding from a higher position. This was true of both long and short vowels. The mid and low-mid vowels in Dong Luang dialect were lower in tongue height than were these same vowels in other dialects.

The status of the long low second register vowel is closely connected with that of the low-glided front vowel (see section 4.4.2). As a general rule, the groups which had a low-glided front vowel did not also have a long onglided (second register) low central vowel. Huffman comments on this when he notes (1976:581) the "complete absence of /aà/ which has changed in every case to /ia/." Some examples in Woen Buek dialect would seem to be exceptions to this rule, but those in the present corpus appear to be borrowed words. Dong Luang, however, proves

to be an exception to this rule, demonstrating a clear contrast between second register short and long vowels as well as the high-low offglide (e.g. [kɔan] 'mold with fingers' and [mian] 'borrow').

The phonetic value of the low-central second register vowel nucleus varies greatly between dialects. In Rom Klaw, and Khok Sa-at it is a mid-central vowel onset gliding to an [a]. In Pho Thi Phai San it varies between a central onglide and a front vocoid onglide from either an [i] or [e] position. But the center of the vowel nucleus was felt by the language assistants to be clearly [a]. In Dong Sen Kew the onglided low-central vowel does not occur, but there is a glide from high front to low central position which seems fairly equally divided between the two positions. Woen Buek and Dong Luang have both the central vocoid onset glided to an [a] and the high front vocoid gliding to [a].

4.2.2 Orthographic representation of central vowels

High, mid and low vowels were generally written as in Thai. The low-mid vowel required a different symbol. With some exceptions, the language assistants chose to write the central vowels in the following way:

CENTRAL VOWELS

		Short Glottal	Closed	Long Open	Closed
High	2nd register	x̃	x̃x	x̃	x̃x
	1st register	x̃	x̃x	x̃	x̃x
Mid	2nd register	ιxɔะ	ι̃xx	ιxə	ι̃xx
	1st register	ιxɔะ	ι̃xx	ιxə	ι̃xx
Low-mid	2nd register	uxɔะ	u̐xx	uxə	u̐xx
	1st register	uxɔะ	u̐xx	uxə	u̐xx
Low	2nd register	xะ	x̌x	xๅ	xๅx
	1st register	xะ	x̆x	xๅ ·	xๅx

There was some diversity in the sources we consulted in regard to the writing of the mid and low-mid central vowels. The symbols shown above for these represent a modification of those described by Mattix (n.d.), Keele (1991) and B. Johnston (1976). Theraphan and Puengpa (1980) chose to represent the low-mid vowel with the common Thai mid-vowel symbol [ιxə/ι̃xx] with some variations for register and length. The mid vowel they wrote in the same way but with a subscript

[.] to distinguish it. Van der Haak (1991) indicated that a consultation of Kui writers has decided to write the mid vowel with the common Thai symbol [ɪxə/ɪx̌x] and the low-mid vowel with the subscript [.]. This would make it the reverse of the Theraphan and Puengpa representation. The Kui choice parallels that used in Northern Khmer where the [.] is used in several positions to mark lowering.

Although the Thai system underdifferentiates between long and short mid-central vowels, it did not seem wise to do so in these languages where the contrast is fairly common. No problem was encountered in the symbols chosen for open syllables or before final glottal. Before final [j], [ɪx̌ɐ or ɪɪx̌ɐ] was used for the short *vowel and [ɪxɐ or ɪɪxɐ] for the long one. But for closed syllables, the system* initially chosen as proposed by Mattix and Keele resulted in the combining of two or sometimes three diacritics above one symbol [x] (e.g. [x̃ + x̆ + ẋ]) and presented problems for readers, since Thai word processors tend to superimpose these on each other, if they even permit the combination.

At the April seminar several solutions to this problem were discussed. One was to spread the superscript characters out over two characters (e.g. [ɪx̃x̆]. Another was to use the Lao convention of [ɪx̌x] for the short vowel and [ɪx̌x] for the long one. This has been adopted by Theraphan & Puengpa (except before [h] which they treat the same as glottal). Another suggestion was to use the same combination for closed syllables as is used in open ones (e.g. [ɪxəx] as well as [ɪxə]). Still another was to use the silencer [x] instead of [x̃] over the [x̂], since this could be handled by Thai word processors. Participants were cool toward all suggestions other than the one they were accustomed to. In the end we have chosen tentatively to use the [ɪx̌x/ɪx̌x] distinction for all consonant-final combinations except glottal, feeling that this represents the least disruption from the system above. Long vowels before [h] are extremely rare.

Another symbol which gave some problem and was handled differently by language assistants from different dialect areas was the second register low vowel. This would seem to reflect their perception of the Thai symbol proposed for this position and its correspondence with the sound system of their own language. Those dialects in which the sound was clearly an onglided [a] chose to write the sound as [ə˞]. This included Rom Klaw and Khok Sa-at. They rejected the use of [x˞x] since they felt it would be read as that symbol is in Thai and not reflect the distinctly different quality of the Bru sound although they all accepted [x̰] for marking the short second register vowel.

The language assistants from Pho Thi Phai San, however, were happy to adopt the symbol of [x˞x] for this sound and felt that it greatly simplified the writing of certain common words which they found very difficult to read using the vowel glide as proposed by Keele [x̃ɐx]. They felt strongly that the sound was not di-syllabic as it appeared to them in the Keele orthography.

Language assistants from Dong Sen Kew and Woen Buek, on the other hand were happy to write the symbol [x̃ɐx], though the assistants from Woen Buek preferred to shorten this to [x̃x]. This allowed the Woen Buek assistants to use the symbol [x˞] for the borrowed words which they perceived as requiring this. The Dong Luang assistants stated a preference for [ə˞] for the long second register low vowel and [x̃ɐx] for the high-low glided vowel.

4.3 *Back vowels*

Most problematical were the back vowels. Much still needs to be checked out in this area, since although initially great complexity and difference seemed to be indicated, many cases of non-occurrence in different environments suggested that some of these could and should be collapsed. Furthermore, it was in the back vowels that it was most difficult for the language assistants to relate the distinctions of their dialects to the Thai orthography.

4.3.1 *Phonemic representation of back vowels*

For purposes of this paper, the following vowels are presented as being of concern to at least some of the dialects:

BACK VOWELS

		Short	Long
High	2nd register	ṳ	ṳː
	1st register	u	uː
Mid	2nd register	o̤	o̤ː
	1st register	o	oː
Low-mid	2nd register	ŏ̤	ŏ̤ː
	1st register	ŏ	ŏː
Low	2nd register	ɔ̤	ɔ̤ː
	1st register	ɔ	ɔː
Low-low	2nd register	ɔ̤̆	ɔ̤̆ː
	1st register	ɔ̆	ɔ̆ː

In the chart above and elsewhere in the paper, [x̆] indicates a lowered tongue height position.

For some of the dialects studied, the back vowels were fairly straightforward. Rom Klaw was one of these. Rom Klaw had only three positions of back vowels with long and short in first and second registers. Register for high and mid vowels was heard as a contrast between second register breathy and first register non-breathy voice quality. In the low vowels, second register was marked by a central vowel on-glide.

Khok Sa-at dialect had four positions of back vowels, high, mid, low and low-low, but the evidence for mid, low and low-low second register back vowels

was rather sparse. Only one example of the long low-low vowel was encountered and no examples of this vowel in second register are found in the data.

Dong Sen Kew had the same four levels. It also has very few examples of short second register vowels in mid and low postion. In the low-low position, no second register forms either long or short were found in the data.

Dong Luang also had four positions from high to low with register contrasts for most of these. Not found in our data were examples of short second register vowels for either high or low-mid position. Dong Luang vowels were phonetically lower than were the corresponding vowels in other dialects. As with other dialects with both low and low-low levels, second register was realized for both long and short counterparts of these vowels by brief ongliding from a central vowel position.

More difficult to categorize were the back vowels in Pho Thi Phai San and Woen Buek dialects. Gainey (1985) gives for Pho Thi Phai San the same four levels as found in Khok Sa-at, Dong Sen Kew and Dong Luang with full length and register contrasts for all positions. Theraphan (1979) gives the same for Woen Buek. Keele (1991) and Gutwein (1980) give an additional low-mid position which occurs in first register only and show examples of the low-low positions only for short vowels. Darunee (1986) gives six tongue-height positions for So back vowels.

Our own data for Woen Buek and Pho Thi Phai San shows the same multiplicity of levels as Keele and Gutwein show for Kusuman dialect. Contributing to the problem of identifying levels and registers in the back vowels, is that in Pho Thi Phai San and Woen Buek dialects, the difference in tongue height between the two registers is more pronounced in the back vowels than in the front and central vowels. This brings these dialects closer to the dialect spoken in Vietnam where tongue height is a very prominent feature.

But here where register is generally identified by the breathy or "big" voice quality, it means that the language assistant is less able to identify the vowel in his own dialect with one of the Thai vowels, particularly those vowels in the lower first register. Woen Buek assistants, for example, tended to identify what is probably the first register high vowel with the Thai mid vowel. The second register mid vowel was likewise identified with the Thai mid vowel, but the lower non-breathy vowel was harder for them to place. Furthermore, the language assistant had more difficulty recognizing the higher level as being "breathy" or "heavy" or "big" since it frequently did not have the voice quality generally associated with that register for other high and mid vowels.

Adding to the problem of sorting out the back vowels is the fact that tongue height position is not necessarily the same for short and long vowels. The short low vowel, for example, was generally higher than the long low vowel. So the matching up of short and long counterparts was sometimes as difficult for the language assistants as matching up the first and second register counterparts.

The tongue height position of the low vowel and the low-low vowel also differed between dialects. For most dialects, the low vowel was identified with the Thai low vowel, and the low-low vowel was the one which was "different". But

for Woen Buek dialect, the low-low vowel was not as low in tongue height as in the other dialects, and this was the vowel which tended to be identified with the Thai low vowel. In Dong Luang dialect the low-low position was so low that the language assistant sometimes wavered between writing it as a back vowel or writing a low central vowel for some words.

It seems likely that despite some counter-examples, four levels (or three in the case of Rom Klaw) will eventually be able to account for all the vowels in these dialects, as found in Gainey (1985) and Theraphan (1979) with the higher being second register and the lower being first register, even though "breathiness" or "laxness" of the higher position is not always recognized, but further study would be helpful in this area.

In other Katuic languages, Kui is reported to have four levels of back vowels in both long and short, first and second registers, though B. Johnston (1976) reports neutralization between the mid and low-mid vowel in their short form. Van der Haak and Woykos (1990:113) state that in the Ban Bing dialect of Kui there is some evidence for an additional phoneme between [i] and [e] as well as between [u] and [o], though these are not highly contrastive. Kuay of Surin, Ngeq and Katu are also said to have four levels of back vowels. Highland Pacoh and Kuay of Suphanburi have only three.

4.3.2 Orthographic representation of back vowels

The chart below presents the orthographic representation of back vowels as presented in Mattix's proposal and adapted by language assistants for their own dialect:

BACK VOWELS

		Short		Long	
		Glottal	Closed	Open	Closed
High	2nd register	x́	x́x	x́	x́x
	1st register	x	xx	x	xx
Mid	2nd register	ĩx:	xx	ĩx	ĩxx
	1st register	ĩx:	xx	ĩx	ĩxx
Low-mid	2nd register	ĩx̃:	x̃x	ĩx̃	ĩx̃x
	1st register	ĩx̃:	x̃x	ĩx̃	ĩx̃x
Low	2nd register	ɪxɴ:	xəx	xə	xəx
	1st register	ɪxɴ:	x̃əx	xə	xəx
Low-low	2nd register	ɪxʔ:	xəx	xə	xəx
	1st register	ɪxʔ:	x̃əx	xə	xəx

The above chart actually reflects two differences from that proposed by Mattix. One involves the placement of the dot for the low-low vowel. Where Mattix placed it above the vowel, we have followed other examples (Kui, N. Khmer, Theraphan & Puengpa) and placed it below.

The short low-low vowel before glottal for which Mattix proposed [xǝː] as a symbol, was written by some language assistants following Mattix's suggestion and by others with the symbol shown on the chart. Some stated no preference between the two symbols, but the Woen Buek assistants felt the symbol shown on the chart would be easier to read. Theraphan and Puengpa (1980) chose this symbol, but for the higher of the two forms rather than the lower which perhaps reflects the identification of Woen Buek speakers of the lower sound with the Thai sound represented by this symbol. The language assistants working on this project expressed no preference as to which should be marked.

Keele (1991) and Gutwein (1980) wrote the short low vowel as an inherent vowel (except with final glottal) using [xx], thus matching it with the lowered [ŏ] which employs this same symbol. They were then able to write the low-low vowel as short [ɔ] , because it has no long counterpart. This was not an option, however, for other groups, where the contrast exists. The assistants working with us initially wrote the low-low vowel as [xǝx], later changing to [xǝx], not marking shortness since length is not contrastive for this vowel in Pho Thi Phai San dialect.

Both Woen Buek and Pho Thi Phai San assistants chose to mark the low-mid vowel with [x]. They were not happy to write it as [Ĩx], since they felt it fell somewhere between [Ĩx] and [xǝ]. Other groups did not have as much problem relating their sounds to the Thai high and mid vowels.

The language assistants from Rom Klaw deviated from the chart above in that they wrote the long second register low vowel as [ǝǝ]. This followed their pattern of writing the long second register low vowel in central position as [ǝ]. Other groups followed the convention of using [x] to mark the second register back vowel, including Khok Sa-at and Dong Luang which used the [ǝ] for the low second register central vowel.

4.4 Glides

4.4.1 Mid-glided vowels

All six dialects studied had glides in which the front, central and back high vowels glided to mid positions as shown below:

	FRONT	CENTRAL	BACK
2nd register	i̞ǝ	i̞ǝ	ɰǝ
1st register	iǝ	i̵ǝ	uǝ

The central mid-glided vowel occurred less frequently than did its front and back counterparts, and not all glides were found in open syllables in both registers. In fact the register contrast for these vowel glides was very tenuous in Khok Sa-at and Dong Luang dialects. Only a few examples were found of second register glides in these dialects. In Rom Klaw dialect register contrasts were found for the front and back glides, but not for the central. An expanded data base would perhaps provide this.

These glides were written in the Thai manner, using [x] to mark second register as shown below:

	FRONT		CENTRAL		BACK	
	Open	Closed	Open	Closed	Open	Closed
2nd register	เxื	เxืx	เxอ	เxอx	xอ	xอx
1st register	เxื	เxืx	เxอ	เxอx	xอ	xอx

For the most part these symbols did not prove problematical. However, where the vowel occurred before [j], [jʔ] or [jh], Mattix's suggested [xไย], [xไยห] or [xไย] proved difficult to read. When we made the alternate suggestion of [เxืย], [เxืยห] or [เxืยย], it was felt that these would be easier to read.

4.4.2 Low-glided vowels

Five of the six dialects studied also had glides in which the high back vowel glided to a low central vowel and several had the high front vowel gliding to a low central vowel. In none of them did the high central vowel glide to a low vowel. See the chart below:

	FRONT	BACK
2nd register	ịa	ụa
1st register	ia	ua

As mentioned earlier (section 4.2.1), with the exception of Dong Luang and Woen Buek dialects, only those dialects which did not have a long on-glided low central vowel had the front vowel gliding to the low central vowel. Thus, the low-glided front vowel was not found in Rom Klaw, Khok Sa-at, or Pho Thi Phai San.

In Rom Klaw dialect, the low-glided vowels were not found in either front or back position. In Dong Sen Kew and Woen Buek dialects the high-low glides are found in both front and back position, in both registers and in both open and closed syllables.

All dialects except Rom Klaw had the low-glided back vowel, though the register contrast for this glide was not clearly shown for Khok Sa-at or Dong Luang dialects. Dong Sen Kew, Pho Thi Phai San and Woen Buek dialects demonstrated a clear register contrast for this glide.

In other Katuic languages, Bru Quang Tri has a full set of mid-glided and low-glided vowels in both registers except for the central position where the low-glided vowel does not occur. Other groups do not appear to have the contrast.

Since the contrast between high-mid and high-low glides does not occur in Thai and Lao, a different way to represent these had to be established. Mattix suggests the following:

	FRONT	BACK
2nd register	x̆ɐnx	x̆ɔnx
1st register	x̆ɐnx	x̆ɔnx

The front high-low glide was written as above by Dong Sen Kew and Dong Luang assistants, and as slightly modified by Woen Buek assistants. The language assistants from Pho Thi Phai San rejected this symbol, saying that the sound was definitely not two syllables and that the greater focus was on the [a]. As noted above (section 4.2.2), they prefered to write [ŋ]. Dong Luang and Khok Sa-at rejected [ŋ], and chose to write [ɔŋ]. Dong Sen Kew and Dong Luang assistants accepted the symbol above and the Woen Buek assistants adopted it but without the [ɐ] so that the symbol used was [x̆ŋ]. At the April seminar, a possible compromise solution of using [ɐŋ] for both the [x̆ŋ] and [ɔŋ] groups was presented, but no one seemed enthusiastic about this. This symbol would seem to have the advantage of being parallel to the representation chosen for the back high-low glide.

All groups chose to write the back high-low glide as [ɔɔ], leaving off the [x] proposed by Mattix. Since there is not in any of the dialects a contrastive |wa| combination, this seemed to be an adequate representation for all of them.

Theraphan and Puengpa (1980) had proposed writing both high-mid and high-low glides with the Thai glided vowel symbol and marking the high-mid vowel with [.]. This fit well with their system of marking higher vowels with the [.]. This solution could also be adapted to using the [.] to mark the lower vowel, if it seemed desirable to mark lower rather than higher vowels or if the high-low combination seemed less like the Thai glided vowels.

5. Syllable patterns

5.1 Main syllable

All of the six dialects studied had a sesquisyllabic structure (David Thomas, 1992) in which a non-stressed non-obligatory pre-syllable is followed by a stressed obligatory main syllable. The main syllable consists of a consonant or consonant cluster (see section 3.1.1), a vowel nucleus and an optional final consonant (see section 3.2.1). The vowel nucleus may be any of the vowels presented in sections 4.1, 4.2, or 4.3. Short vowels may not occur in open syllables, nor may second register vowels occur after voiced or aspirated stops. Theraphan (1979) notes that they also do not occur after *s*, *h*, or *ʔ* though Gainey (1985) notes a few

occurrences of this in So and B. Johnston (1976) says they occur everywhere but after aspirated stops in Kui.

5.2 *Pre-syllable*

The most common pre-syllable consists of a consonant, vowel and optionally a final consonant. While any initial consonant may presumably appear as an initial consonant in the pre-syllable, aspirated stops and consonant clusters in this position are rare.

The vowel in the pre-syllable for the groups studied was either [a], [u], or [i]. Length appears to be non-contrastive in this position, but preference for long or short in some words was demonstrated by language assistants. Generally where the vowel was [a], a short vowel was either preferred or accepted. With the other vowels, often the long vowel was preferred even though no ambiguity resulted from the use of a short vowel in this position. The pre-syllable vowel [i] occurred most commonly after [s] or [c], and it could sometimes be replaced by [a], but its presence in this context could not be predicted, nor was a substitute always acceptable.

In Pho Thi Phai San dialect no closed presyllables were found. Khok Sa-at and Rom Klaw had very few and in these the final consonant was restricted to a nasal consonant which approximated the point of articulation of the consonant of the main syllable. Dong Sen Kew and Dong Luang had a fair number of closed presyllables, but also only with a final nasal consonant. Only for Woen Buek dialect was the closed presyllable a fairly common pattern, and in this dialect, nasals, [r] or [l] could occur in this position.

Another common pre-syllable pattern consists of a syllabic nasal at the same point of articulation as the initial consonant of the main syllable. No examples of a nasal pre-syllable before a main syllable initial [ʔ] [w] or [j] were found and only in Woen Buek dialect was the nasal pre-syllable found before another nasal, but no other restrictions were noted.

6. Questions and areas needing further research

Several questions are relevant to knowing how best to facilitate local speakers of these six dialects in the further development of their languages. Most of the language assistants who have worked with us to prepare materials in their languages have depended quite heavily on advice from outside linguists in how best to write the non-Thai sounds in their languages. Although they have insights which outsiders do not have concerning their language, they have never thought of the sound systems of their language in an analytical way, and some said that they had previously felt it impossible to write their language using Thai script. Questions which occur to us in this regard are the following:

6.1 *How much standardization can or should be attempted between these dialects?*

In the past these groups have had little or no contact with each other. Some groups had no knowledge of the existence of some of the others. If this situation

were to continue, then very little importance need be placed on standardization of orthographies for the different dialects. On the other hand, these are generally very small groups. Some of them will only be able to do anything in terms of language development in conjunction with other closely related groups. Where it is possible to help them develop conventions which have been adopted elsewhere or are in process of consideration, it would seem advisable to foster such cooperation.

At the April 1994 meeting which brought together representatives of the six groups, a strong desire was expressed to maintain contact with each other, even though it was recognized that this would be difficult in view of the great distances between some of the groups. The sense of being the same was very strong even where the dialects were so different that the speakers had to resort to Isan to communicate.

The question as to how much standardization it is possible to achieve will depend in large part on the perception within each group about the sounds in their dialect and the relationship of these to the Thai alphabet. The range of similarity between the dialects and intelligibility between them varies considerably. At the seminar, for example. the various ways of representing the high-low glide [ia] and the onglided low vowel [əa] were presented. Each tended to hear the sound in the other's dialect as being like theirs and thus could not understand why the others did not write the sound like they did. Only time and further testing will tell how much standardization is possible or desirable.

6.2 *To what extent should non-Thai combinations be avoided and to what extent can Thai symbols and combinations be adjusted to represent sound values which are different in Mon-Khmer languages from their use in Thai or Lao?*

Taking as valid the principle articulated by Smalley (1976a:28) that one of the features of a good orthography is optimum transfer, it needs to be noted that the Mon-Khmer groups in northeast Thailand at the present time are faced with a situation which is quite different from that described by Smalley.

Smalley described a situation in which few of the minority language speakers could read Thai. But the language assistants who participated in our current project *all come from villages where elementary schooling is readily available and most of* the younger people have had at least some orientation to the Thai language and alphabet. Development of their language, then, is not viewed by them primarily as a bridge to the Thai language, but as a means of preserving a part of their own cultural heritage. And since to them the Thai symbols come with an already-formed concept of value based on the Thai system, it is difficult for them to stray too far from this concept in devising a writing system for their own language. In this regard, for example, could the Pho Thi Phai San readers or the Woen Buek readers be taught to regard the symbol [ĭx] in their own language as representing a sound which is considerably lower in tongue height position from the pronunciation of that symbol which they have learned in school. Could they be convinced that only if it has a tone marker [ĭx] does it sound like the Thai pronunciation? Again, only further testing will answer this question.

As to the avoidance of non-Thai looking sounds, this question pertains not only to the value of the symbols but also to the acceptability of the orthography both within the community and with outsiders. Smalley (1976a:21) mentions the negative reaction of Thai people to the use of patterns which are non-Thai in appearance and the feeling that "the Thai language and alphabet were being violated." Negative reaction from speakers of the Thai language to the way the minority language is written might lead to feelings of doubt and rejection of the writing system even within the minority language community. Some differences cannot be avoided, of course, because of the very different sound systems involved, but it would seem to be important, where possible, to maintain Thai conventions even where these could be adjusted for the sake of simplicity. And where a non-Thai combination is indicated, perhaps it would be good to evaluate possible representations on the basis of which looks less strange to a reader of Thai or which are easier for a native speaker who is already a reader of Thai to tackle successfully.

6.3 *To what extent is under-representation or over-representation of sounds in a given dialect indicated?*

Theraphan and Puengpa (1980) demonstrate that nasalization in Woen Buek dialect is, while environmentally conditioned and fairly predictable, still occasionally contrastive. The same is true, according to Gainey (1985) for So. Theraphan and Puengpa marked nasalization by writing [ง] at the end of a word with a nasalized vowel. Language assistants who worked with us were not familiar with the Theraphan and Puengpa orthography, and when they questioned the writing of a word with a nasalized vowel, we did not encourage them to mark the nasalization. They did not question this and seemed to have no problem reading words when this was not marked. Further testing would be needed to know whether the explicit marking of the feature of nasalization would be of sufficient importance to offset the difficulty of reading this symbol which may produce very un-Thai combinations.

In another example, we debated whether language assistants should be encouraged to write the mid and low-mid central vowels in a syllable closed with a [y] in the same way as this was written for other closed syllables [ɯ̀ɣ̊ɐ/ɯ̀ɣ̊ɐ] rather than to write the simpler Thai form of [ɯxɐ/ɯxɐ]. The question arose in our minds after we found a contrast in Dong Luang dialect between these vowels and the front vowels [ey/ɛy] in that environment. But should other dialects be required to use the more complex form when they do not have such a contrast? Perhaps it is not even necessary to preserve it in Dong Luang dialect if the contrast is of very infrequent occurrence. Certainly there are far more frequent ambiguities (such as [ɯʋɣ̊] for [pre] or [per] and [ǐnɐ] for [klo] or [kol]) which are introduced by the Thai writing system.

7.   Conclusion

All six of the dialects represented in the study represent speech communities which are linguistically very close. All of them know that they came from Laos to Thailand within the last 150 years. Most of them have no contact with language

communities in Laos. Nor, with some exceptions, have they had contact with each other. Certainly Dong Luang and Pho Thi Phai San have been aware of each other's existence. And other groups (with the exception of Woen Buek and Dong Sen Kew) have generally had at least some contact with one of these two larger groups. But differences in phonology do exist between these groups. And perceptions about how the sounds of their language relate to the sounds and symbols of the Thai language also vary.

Many of the people from these language communities feel that unless their language is developed as a written language it will not survive. And for most of them, maintenance of their language is seen as a positive value. Thus the question of how best to represent their language in orthographic symbols is one which will need careful thought and further study.

Notes

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