CHAPTER 5

COMPARATIVE PHONOLOGICAL RECONSTRUCTION

5.0 Introduction

The varieties of Kuy in Cambodia were first identified and compared through sociolinguistic information and lexicostatistical comparison in Chapter 2 and 3. This gives a picture of the general groupings of Kuy speech varieties, and identifies four dialects, Kuy Ntra, Kuy Ntua, Kuy Mai and Kuy Mla, which were described in the previous chapter. Wordlists from four locations were selected as representatives of the four dialects. (See Section 2.2.1.) This chapter uses phonological reconstruction based on the comparative method to provide further support for the proposed Kuy dialect groupings. A full reconstruction is not attempted here, but the partial results yielded from this method provide a broader understanding of how the dialects compare with and relate to each other.

There are two main uses for the comparative method: "first, utilizing comparison in such a way that it can identify genetic relatedness, … and second, … as a basis for actually reconstituting the ancestral forms, i.e. the common source … from which the forms presumably descend" (Lass 1997:127). Both of these uses are employed to some extent in this chapter.

All languages undergo regular change over time. A language group which has been divided into smaller groups, by distance or other factors, will change in different ways, thereby producing different forms of that language. These forms may be different varieties, dialects, or even distinctive yet related languages. By comparing these related varieties, one can see patterns of change and discover the relationship between them. By this approach it is possible to reconstruct, or at least hypothesize, the form of the parent language.

This chapter provides a partial reconstruction of Proto-Kuy based on the dialects spoken in Cambodia. The main purpose of this reconstruction is to examine the

relationships between the current Kuy dialects, so the reconstruction will be somewhat limited in scope. The first section of this chapter discusses the methodological background. Next a summary is given of the Proto-Katuic research which lends insight into the present study. Following this, the correspondence sets for the consonants and vowels of Proto-Kuy of Cambodia are given. Presyllables are also discussed, with correspondence sets. Then a summary of the sound change rules for each dialect is given. Finally, there is a general discussion of Proto-Kuy, including summary tables of the proposed consonant and vowel inventories.

5.1 Methodology

The term *comparative* is "used to characterize a major branch of linguistics, in which the primary concern is to make statements comparing the characteristics of different languages (dialects, varieties, etc.), or different historical states of a language" (Crystal 1980:73). This is done using the *comparative method*. According to Campbell (1998:108-9), "The aim of reconstruction by the comparative method is to recover as much as possible of the ancestor language (the proto-language) from a comparison of the descendant languages, and to determine what changes have taken place in the various languages that developed from the proto-language." The comparative method is described in Campbell (1998), Fox (1995), Trask (1996), Hock (1986), and others.

By comparing the varieties of Kuy in Cambodia, it is possible to derive a hypothesized *proto-language*–"the language reconstructed by the comparative method which represents the ancestral language from which the compared languages descend" (Campbell 1998:111). This proto-language is an assumption, based on evidence in the current varieties, of what Kuy may have been like before the varieties split off and changed (which really only "approximates earlier linguistic reality," Hock 1986:568). The reason for doing this type of comparison is that, as Hock (1986:567) states, "the ultimate proof of genetic relationship, and to many linguists' minds the only real proof, lies in a successful reconstruction of

the ancestral forms from which the systematically corresponding cognates can be derived."

The methodology involved examines the phonology of each of the varieties. Although somewhat extreme, the Neogrammarians of the late 1800s established the "regularity principle", suggesting that regular sound changes recur generally and take place uniformly (Campbell 1998:17-8), and therefore the historical developments of language can be traced. This regularity of sound change is a fundamental assumption of the comparative method. If varieties are historically related, a word in each variety can be compared, phoneme by phoneme, to the word with the same meaning in the other varieties. Considering a set of related vocabulary will reveal regular patterns of sound changes between the two varieties, and these will constitute a *correspondence set.*

The following steps, adapted from both Trask (1996:208) and Campbell (1998:111-32), outline the comparative method as applied in this thesis:

1. Assemble side by side a sufficient number of basic, core words with similar meanings from the related varieties under comparison.

2. Examine these for apparent systematic sound correspondences.

3. Draw up tables of the systematic correspondences found.

4. For each correspondence, posit a plausible sound in the ancestral language, one which could reasonably have developed into the sounds that are found in the daughter varieties, bearing in mind what is known about phonological change, particularly in the language family or area under study.

5. For similar (partially overlapping) correspondence sets, determine the environment conditioning the change.

6. For each word surviving in the daughter varieties, determine the probable form in the ancestral language based on the sounds posited for each correspondence set.

7.   Based on the sound change rules and reconstructed vocabulary, determine what system of sounds the ancestral language apparently had and what the rules were for combining these sounds.

8.   Based on the rules in the descendant varieties determine the subgrouping of the varieties into dialects or language groups.

The comparative method is based on several basic assumptions. As previously mentioned, the assumption of regularity of sound change is foundational to the application of the comparative method, allowing the reconstruction of sounds from the ancestral language. The method also assumes a historical relationship between the language varieties being compared.

A significant difficulty in reconstruction is the recognition of borrowed versus indigenous words. Since Khmer (the national language and language of education) and Kuy are both Mon-Khmer languages, there are many Kuy words for which it is not clear whether they are borrowed directly from Khmer or derived from the same ancestral word. Some borrowed words may be adapted to fit the phonology of the receptor language, while others retain the original phonology. Potential borrowing is discussed where it appears to affect the present reconstruction.

5.2 Proto-Katuic insights

The intention of the present study is to determine the relationships between Kuy varieties in Cambodia based on data from currently spoken varieties. The correspondence sets for consonants are straightforward; the vowels, however, are more complicated. Following the steps of the comparative method as outlined in 5.1, step #5 states, "For similar (partially overlapping) correspondence sets, determine the environment conditioning the change." For the consonant correspondence sets, the conditioning environment is usually clear, such as word-final position. In many of the more challenging correspondence sets for vowels, no direct conditioning environment is apparent. Knowledge of related research on Proto-Katuic and on processes in Mon-Khmer languages provides needed insight

and allows us to assume that there was a conditioning environment at an earlier stage in the language which has now been neutralized. Therefore, a summary of some of the Katuic and Mon-Khmer historical and comparative research is necessary.

No known works on Proto-Kuy have been published to date.[27] In Thailand, Kuy is commonly divided into two main dialect groupings: Kuuy (or Kuy) and Kuay. Some works comparing varieties of Kuy in Thailand point out vowel correspondences between dialects similar to the correspondences found between Kuy varieties spoken in Cambodia. Two of these studies are considered here, Pailin (1980) and Van der Haak and Woykos (1990).

Pailin (1980:124) collected over 1,500 words from a Kuay dialect and compared these words to data published in Prasert (1978) which is from a Kuy dialect. Pailin observed that (using her notation for long vowels) /aa/ in Kuay corresponds with /ia/ or /iia/ in Kuy, /ɔɔ/ corresponds with /ua/ or /uua/, /oo/ corresponds with /ɔɔ/, /uu/ corresponds with /oo/, /ia/ corresponds with /ii/, and /ua/ corresponds with /uu/. She notes that these correspondences occur more on clear (normal) vowels than on breathy vowels. No discussion is given for the cause of these changes, and in fact she states, "After analyzing the sound correspondences of Kuay and Kuy phonemes, we found the reasons for the shifts of some phonemes are not clear" (Pailin 1980:123).

Van der Haak and Woykos (1990:112) observed similar correspondences when comparing 53 Kuay and Kuuy wordlists. Kuay /ua/ corresponds with Kuuy /uː/, /ɔː/ or /ɒː/ corresponds with /ua/, /aː/ corresponds with /ia/, and /ia/ corresponds with /iː/. In general, the diphthongs /ua/ and /ia/ have shifted, such that they occur in each dialect, but in a different correspondence set. They point out that not all

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[27] After the completion of this thesis, the following work was brought to the author's attention: *Phonological variation and change in Kuai-Kui (Suai)*, a dissertation by Preecha Sukgamsame, Chulalongkorn University, 2003, based on varieties in Thailand and Laos. It is likely that this study may add relevant information to the current discussion of Kuy vowels, but it was not accessed in time for inclusion in this thesis.

wordlists follow these correspondences completely, and the irregular vowel changes are marked in the paper by location.

Six studies of comparative work on Katuic and Mon-Khmer languages are discussed briefly here, with particular focus on vowels: Gregerson (1976), Ferlus (1980), Diffloth (1982), Peiros (1996), Theraphan (2001) and Sidwell (2005, in press).

Gregerson (1976) described the mechanics of the production of register in Mon-Khmer languages. Though the perceptible effects of register vary from language to language, Gregerson (1976:373) states that in general first register is associated with original voiceless initial consonants, has clear voice quality, relatively higher pitch and more open, onglided vowels. Second register is associated with original voiced initial consonants, breathy voice quality, relatively lower pitch and close, centering diphthongs. The paper focuses on the role of advancement and retraction of the tongue-root in producing register distinctions. There is no specific reference to Kuy, since his discussion is based primarily on Mon-Khmer languages of Vietnam. However, his study is foundational to later studies on register.

Ferlus (1980) discusses formation of register in many Mon-Khmer languages, including Souei of southern Laos. He shows that the initial consonants of Souei that he calls the high series /p/, /t/, /c/, and /k/ have remained /p/, /t/, /c/, and /k/, respectively, followed by clear vowels. The low series initial consonants /b/, /d/, /ɟ/, and /g/ become /p/, /t/, /c/, and /k/, respectively, followed by breathy, diphthongized vowels. Ferlus notes that Kuy as spoken in Surin, Thailand, is a close relative of Souei, and presents roughly the same characteristics (1980:8).

Diffloth (1982) expands on the historical development of register, devoicing and vocalic pitch in Katuic languages, focusing mainly on long vowels. He states that their development follows a sequence of cause and effect: proto-voiceless initials correspond with clear voice and higher pitch; proto-voiced initials correspond with breathy voice and lower pitch. Over time, the voiced stop series merged with

the voiceless stop series, leaving register and pitch distinctions. Proto-implosives became simple voiced stops. For Kuy (of the variety described in Prasert 1978), a number of specific complex vowel changes are proposed by Diffloth by comparing correspondences across seven Katuic languages, particularly looking at voicing of proto-initial consonants. Some of these changes will be referred to later in the discussion of vowels, Section 5.4.

Peiros' (1996) *Katuic comparative dictionary* draws from data in published dictionaries of four Katuic languages: Bru, Kui, Pacoh and Katu. The reconstruction of initial consonants seems to be predicted based on assumptions about Bru register, and little is said about the vowel development, other than presenting the correspondences. This comparative dictionary seems to agree less with other Proto-Katuic works, and is less helpful for the current study of Kuy.

Theraphan (2001) collected data from six Katuic and seven Bahnaric languages spoken in Xekong province in southern Laos. One language for which data was collected is called Suay, but is determined by Theraphan to be a Bahnaric language, not a Katuic language. Another variety called Suay (also spelled 'Souei') is spoken in Xekong and determined to be a Katuic language; however, no Suay data was collected for that particular study, since Ferlus (1974) has already published a wordlist. Theraphan uses data collected in six Katuic languages of Xekong, along with the previously published 'Souei' data, as well as 'Kui' data from Thailand, to reconstruct Proto-Katuic vocabulary. She describes devoicing of proto-initial consonants consistent with that discussed by others, and also gives vowel reconstructions, which at times differ from Diffloth and others.

Sidwell (2005) has compiled data from all of the previous Proto-Katuic sources. In introductory discussion on Proto-Katuic vowels, he supports the analysis of the development of Kuy vowels and register as related to the voicing of proto-initial consonants. Sidwell's extensive comparative dictionary (more than 1,200 entries) promises to be very helpful in further study of the Cambodian Kuy vowels.

In summary, all of the works reviewed consistently agree that proto-initial voicing contrasts have been neutralized, producing contrastive register and diphthongs. The differences lie in the exact form of the proposed proto-vowel and the related correspondences, since each work is based on a slightly different set of languages and different analysis. A limitation is that the Kuy data in these comparative studies is mainly based on a single variety of Kuy spoken in Thailand, in which a published dictionary (Prasert 1978) is available.

At first appearance, the current Kuy data shows unusual variation in vowels across varieties. The consonants have almost no variation among the Kuy varieties in Cambodia. Consequently, the possible evidence for differences in vowels across varieties (such as changes in vowel height, and diphthongization or monophthongization) has to be found further back in the development of these varieties, as proposed in Proto-Katuic research. Though some patterns can be established, explanations based only on the current data are not possible. Many of the vowel changes described by Diffloth (1982) for a particular variety of Kuy provide insight into the possible differences between dialects of Kuy in Cambodia, some of which may have gone through these changes, while others apparently have not.

5.3 Consonants

This section examines the reconstruction of Proto-Kuy consonants of the main syllable, grouped into single initial consonants, initial consonant clusters, and final consonants. The presyllables are discussed separately as whole units, in Section 5.5.

5.3.1 Initial consonants

This section will reconstruct the single initial consonants of the main syllables in Proto-Kuy. These will be examined individually, with correspondence sets presented, beginning with stops, followed by fricatives, nasals, trill and approximants. Initial consonant clusters are addressed in Section 5.3.2.

5.3.1.1 Stops

Initial voiceless stops in Kuy are found in bilabial, alveolar, palatal, velar and glottal positions. Voiced stops are found in bilabial and alveolar positions. Each of these will be illustrated in the following discussion with examples.

Initial voiceless bilabial stop /p/ appears in all Kuy varieties. Thus the phoneme *p may be posited for the proto-language as shown in Table 15.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
279	to see	kʰəːɲ	pəːp	pəː?	pə?	pə?
389	to bathe	ŋuːt (tɨk)	pəːj	pəːj	poːj	pɔːj
395	to split (wood)	puh	pah	pah	pah	pah
401	to dig	ciː?	pec	pəc	pac	pac
464	big	tʰom	pɨːt	pɨːt	pɨːt	pɨːt

Table 15. The initial voiceless bilabial stop *p

Initial voiceless alveolar stop /t/ appears in all Kuy varieties. Thus the phoneme *t may be posited for the proto-language as shown in Table 16.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
32	earth (soil)	dəj	kətɛːk	kətɛːk	kətaɛ?	kətɛː?
41	iron	dae?	taːk	taːk	taː?	taː?
388	to pour	ca? (tɨk)	toh	tɔh	to?	tɔ?
433	to sell	luə?	tac	tac	tac	tac
468	tall	kpuəh	tɨː	tɨː	tiː	tɨː

Table 16. The initial voiceless alveolar stop *t

Initial voiceless palatal stop /c/ appears in all Kuy varieties. As noted in Section 4.3, the phoneme /c/ is phonetically realized as [tɕ] in initial position and as [c] in final position, but since this is predictable, it is represented by the phoneme /c/ throughout the transcription. Thus the phoneme *c may be posited for the proto-language as shown in Table 17.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
96	dog	cʰkae	cɑː	cɑː	cɑː	cɑː
108	elephant	dɔmrej	ciaŋ	ciːŋ	ciŋ	ciaŋ
282	to eat	hɔup	caː	caː	caː	caː
404	to plant (crop)	dam	coh	cɔh	coh	cɔh
406	to be ripe	tum	ceːn	cɛːn	cɛːn	cɛːn

Table 17. The initial voiceless palatal stop *c

Initial voiceless velar stop /k/ appears in all Kuy varieties. Thus the phoneme *k may be posited for the proto-language as shown in Table 18.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
98	to bite	kʰam	kap	kap	kap	kap
106	horn	snaeŋ	təkɑːj	təkɑːj	təkɑːj	təkɑːj
177	waist	cɔŋkɛh	ŋkeːŋ	ŋkeːŋ	ŋkeːŋ	ŋkeːŋ
210	person	mənuh	kuaj	kuːj	kuj	kuaj
419	to burn (wood)	cʰɛh	kaːt	kaːt	kaːt	kaːt

Table 18. The initial voiceless velar stop *k

Initial glottal stop /ʔ/ appears in all Kuy varieties. Thus the phoneme *ʔ may be posited for the proto-language as shown in Table 19.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
260	fire	pʰləːŋ	ʔuːh	ʔuːh	ʔuːh	ʔuːh
334	to be ill	cʰɨː	ʔiː	ʔiː	ʔiː	ʔiː
378	to give	ʔaoj	ʔɑːn	ʔãːn	ʔoːn	ʔɑːn
379	to take	joːk	ʔɛːl	ʔɛːl	ʔɛːl	ʔɛ̃ː
416	to roast	ʔaŋ	ʔaŋ	ʔaŋ	ʔaŋ	ʔaŋ

Table 19. The initial glottal stop *ʔ

Initial voiceless bilabial stop /b/ appears in all Kuy varieties, sometimes realized as [ɓ]. There is some uncertainty over the precise status of these two sounds, as discussed in Section 4.3. However, there does not appear to be a contrastive difference in the data. Thus the phoneme *b may be posited for the proto-language as shown in Table 20.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
58	bamboo shoot	tumpeaŋ	ɓaŋ	ɓaŋ	baŋ	ʔaɓaŋ
283	to chew	tumpiə	puaʔ baːt	pəbat	bat~pəbat	pəbaːt
290	to be drunk	srɔwəŋ	ɓuːl	ɓoːl	ɓoːl	ɓuːl
445	two	piː	ɓaː	ɓaːr	ɓaː	ɓaːr~ɓaː
470	thick	krah	kəɓən	kəɓən	kəɓən	kəɓɐn

Table 20. The initial voiced bilabial stop *b

Initial voiceless alveolar stop /ɗ/ appears in all Kuy varieties, sometimes realized as [ɗ]. There is some uncertainty over the precise status of these two sounds, as discussed in Section 4.3. However, there does not appear to be a contrastive difference in the data. Thus the phoneme *d may be posited for the proto-language as shown in Table 21.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
14	night	jup	səɗaw	səɗaw	sədaw	səɗɐw
26	water	tɨk	ɗaːʔ	ɗaːʔ	ɗaːʔ	ɗaːʔ
81	rice (cooked)	baːj	ɗɔːj	ɗɔːj	ɗoij	ɗoːj
230	house	pʰteah	ɗoŋ	ɗoŋ	ɗoŋ	ɗuŋ
252	cooking pot	cʰnaŋ	ɗɛh	ɗɛh	ɗɛh	dɛh

Table 21. The initial voiced alveolar stop *d

A summary of the proto-initial stops and their reflexes in the descendent speech varieties is shown in Table 22.

*Stops	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
*p	p	p	p	p
*t	t	t	t	t
*c	c	c	c	c
*k	k	k	k	k
*ʔ	ʔ	ʔ	ʔ	ʔ
*b	b	b	b	b
*d	d	d	d	d

Table 22. Reflexes of Proto-Kuy initial stops

The preceding table shows that all of the proto-initial stops are preserved in each of the Kuy dialects in Cambodia.

5.3.1.2 Fricatives

Initial fricatives in Kuy occur in alveolar and glottal position. These are illustrated in this section with correspondence sets.

Initial voiceless alveolar fricative /s/ appears in all Kuy varieties. Thus the phoneme *s may be posited for the proto-language as shown in Table 23.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
107	tail	kɔntuj	sɑːj	sɑːj	sɑːj	sɑːj
122	snake	(sat) puh	kəsaɲ	kəsaɲ	kəsaɲ	kəsaɲ
351	to climb (tree)	laəŋ (daəmcʰəː)	sɔh	sɔh	sɔh	sɔh
352	to descend	cɔh	sɛŋ	sɛːŋ	sɛːŋ	sɛːŋ
381	to tie	cɔːŋ	sat	sat	sat	sat

Table 23. The initial voiceless alveolar fricative *s

Initial voiceless glottal fricative /h/ appears in all Kuy varieties. Thus the phoneme *h may be posited for the proto-language as shown in Table 24.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
197	bone	cʰʔəŋ	ŋhaːŋ	ŋhaːŋ	haːŋ	ŋhaːŋ
278	to smell	hət kʰlən	huːɲ	hoːɲ	hɔːɲ	hoːɲ
376	to flow	hou	hɔ̃ːj	hɑ̃ːj	haːj	hɑːj
396	to tear	haek	heːk	heːk	heː?	hɛː?
511	spicy, hot	hɐl	ham	ham	ham	ham

Table 24. The initial voiceless glottal fricative *h

A summary of the proto-initial fricatives and their reflexes in the descendent speech varieties is shown in Table 25.

*Fricatives	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
*s	s	s	s	s
*h	h	h	h	h

Table 25. Reflexes of Proto-Kuy initial fricatives

The preceding table shows that both of the proto-initial fricatives are preserved in each of the Kuy dialects in Cambodia.

5.3.1.3 Nasals

Initial nasals in Kuy occur in bilabial, alveolar, palatal and velar positions. Each of these are illustrated in this section with correspondence sets.

Initial bilabial nasal /m/ appears in all Kuy varieties. Thus the phoneme *m may be posited for the proto-language as shown in Table 26.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
7	rain	pʰliəŋ	maː	mia	maː	maː
21	year	cʰnam	kəmaː	kəmaː	kəmɑ	kəmɑ
35	stone	tmɔː	təmaw	təmaw	təmaw	təmaw
359	to enter	cɔul	muːt	muːt	moːt	moːt
444	one	muəj	muːj	muːj	muaj	muaj

Table 26. The initial bilabial nasal *m

Initial alveolar nasal /n/ appears in all Kuy varieties. Thus the phoneme *n may be posited for the proto-language as shown in Table 27.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
19	tomorrow	(tʰŋaj) səʔaek	pənəː~pərnəː	pərnɔː	pənə	pənɑ
95	rat	kɔndol~kandaw	kənaj	kənaj	kənaj	kənaj
158	mouth	moɐt	tənoːh	tənoːh	tənoh~tənauh	tənoːh
163	tooth	tʰmeɲ	kənɛːŋ	kənɛːŋ	kənɛːŋ	kənɛːŋ
492	this	nih	nɛː	niː	nən	nɛː

Table 27. The initial alveolar nasal *n

Initial palatal nasal /ɲ/ appears in all Kuy varieties. Thus the phoneme *ɲ may be posited for the proto-language as shown in Table 28.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
247	needle	mcul	ɲcɨl	ɲcɨl	ɲil	ɲəl
281	to weep/cry	jum	ɲạːm	ɲɨam	ɲaːm	ɲaːm
303	to smile	ɲoɲim	ɲoɲim	ɲəɲim	ɲoɲim	ɲəɲim
340	to shiver	ɲoɐ	ɲar	ɲaːr		ɲạr
509	sour	cuː	ɲɔʔ	ɲɔʔ	ɲɔʔ~ɲɔuʔ	ɲɔʔ

Table 28. The initial palatal nasal *ɲ

Initial velar nasal /ŋ/ appears in all Kuy varieties. Thus the phoneme *ŋ may be posited for the proto-language as shown in Table 29.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
15	day	tʰŋaj	təŋaj	təŋaj	təŋaj	təŋaj
99	cat	cʰmaː	ŋaːw	ŋɨaw	ŋaːw	
289	to drink	pʰək	ŋɑːc	ŋuac	ŋɔːc	ŋɑːc
330	to snore	srɔmuk	səŋuak	srəŋoːk	səŋoːʔ	səŋuaʔ
508	sweet	pʰəʔaem	ŋaːm	ŋɨam	ŋaːm	ŋaːm

Table 29. The initial velar nasal *ŋ

A summary of the proto-initial nasals and their reflexes in the descendent speech varieties is shown in Table 30.

*Nasals	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
*m	m	m	m	m
*n	n	n	n	n
*ɲ	ɲ	ɲ	ɲ	ɲ
*ŋ	ŋ	ŋ	ŋ	ŋ

Table 30. Reflexes of Proto-Kuy initial nasals

The preceding table shows that all of the proto-initial nasals are preserved in each of the Kuy dialects in Cambodia.

5.3.1.4 Trill and approximants

Initial trill in Kuy occurs in alveolar position. Initial voiced approximants occur in labial-velar and palatal position, and a lateral approximant is found in alveolar position. The trill and approximants are illustrated in this section with correspondence sets.

Initial alveolar trill /r/ occurs in all Kuy varieties, though sometimes realized as a flap. Thus the phoneme *r may be posited for the proto-language as shown in Table 31.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
61	rattan	pdaɯ	rɵj	rɛj	rɑj	raj
181	intestines	puəhwiən	rɑːc	ruac	rɑic	rɑːc
308	to shout	sraeʔ	cəriːk	cəreːk	cəreːʔ	cəriːʔ
382	to untie	sraːj	rial	ri̥ːl~rial	ril	rial
386	to wash(dishes)	liəŋ (caːn)	raːw	riaw	raːw	raːw

Table 31. The initial alveolar trill *r

Initial labial-velar approximant /w/ occurs in all Kuy varieties, though it is freely realized as [ʋ] by some speakers. Thus the phoneme *w may be posited for the proto-language as shown in Table 32.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
231	door	twiə	təwḁːr	təwiar	təwia	təwiar
443	to do/ make	twəː	wɔː	wṵə	ʔoː	wɔː
486	left side	(kʰaːŋ) cweːŋ	wɛ̥ːr	weːr	wɛː	pɛːʔ
494	black	kmaɯ	təwɛːŋ	təwɛːŋ	teweːŋ	təwɛːŋ
532	blind	ləŋɪt	təweːt	weːt	təweːʔ	təweːt

Table 32. The initial labial-velar approximant *w

Initial palatal approximant /j/ occurs in all Kuy varieties. This is sometimes produced as [ʔj], but appears to be in free variation with the phoneme /j/. Thus, the phoneme *j may be posited for the proto-language as shown in Table 33.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
89	deer (rusa)	praəh	jɐːt	jɑːt	jaɨt	jɑːt
191	leg	cɵːŋ	ɟɨːŋ	jəːŋ	ɟɨːŋ	ɟɨːŋ
219	husband	pdɛj	kəjaːk	kəjaːk	kəjaːʔ	kəjaːʔ
302	to lick	lit	jaːl	jaːl	jaːl	jeːl
515	wet	totɨk	juːr	joːr	joː	juːr

Table 33. The initial palatal approximant *j

Initial lateral approximant /l/ occurs in all Kuy varieties. Thus the phoneme *l may be posited for the proto-language as shown in Table 34.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
100	pig	cruːk	lɨːk	lɨːk	liːʔ	leːʔ
124	worm	cunleːn	təloːj	təluːj~təloːj	təluaj	təloːj
180	liver	tʰlaəm	lɑːm	luam	lom	lɑːm
192	thigh	pʰləɯ	lɯː	lɯː	lɯː	loː
539	wrong	kʰɔh	lɔːh	lɔːh	lɑh~ləoːh	lɔh~təlɔh

Table 34. The initial lateral approximant *l

A summary of the proto-initial trill and approximants, and their reflexes in the descendent speech varieties is shown in Table 35.

*Trill and approximants	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
*r	r	r	r	r
*w	w	w	w	w
*j	ɟ	j	j	j
*l	l	l	l	l

Table 35. Reflexes of Proto-Kuy initial trill and approximants

The preceding table shows that the proto-initial trill and all of the proto-initial approximants are preserved in each of the Kuy dialects in Cambodia.

5.3.2 Initial consonant clusters

The segments which occur in clusters are limited. As presented in Section 4.5, the possible initial elements are stops /p/, /b/, /t/ and /k/, and fricatives /s/ and /h/. Only the lateral approximant /l/ and the trill /r/ (often realized as a flap in this position) occur as second elements in initial clusters. The correspondence sets for nine initial clusters are presented in tables 36-45.

The correspondence set for the initial cluster *pl is shown in Table 36.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
54	fruit	pʰlae (chəː)	pliː	plej~plɛj	plej	plaj
128	crocodile	krɔpɨ	pliaw	pliːw	pliɨw	pliaw
147	head	kbaːl	plɑː	plɑː	plɑɨ	plɑː
275	blade	pʰlae kambɔt	pliː m̩bit	pleː m̩bɐt	plaːj pət	plaːj pet
472	to be fat	tʰoɐt	pləm	plɐm	plom	plom

Table 36. The initial cluster *pl

The correspondence set for the initial cluster *pr is shown in Table 37.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
1	sky	meːk	prah	prah		prah
40	silver	praʔ	prak	prak	praʔ	praʔ
66	banana	(pʰlae) ceik	priat	priat	priːt	priat
248	thread	ʔɔmbaɔh	praj hoŋ	praj ɲ̊ciŋ	prieŋ	prɐj

Table 37. The initial cluster *pr

The correspondence set for the initial cluster *bl is shown in Table 38. Only three examples are found in the current data, which actually are based on only two lexical items, since 'garlic' is derived from the words for 'onion' and 'white'. Even though the correspondence set is small, still the examples given are consistent across the dialects, and not borrowed from Khmer. Therefore, along with symmetrical considerations for the cluster inventory, the initial cluster *bl may be posited.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
64	liquor	sraː	ɓlaŋ	ɓlaŋ	blaŋ	blɔŋ
76	garlic	ktəm sɔ	kətiːm ɓlaːj	kətim ɓlaːj	kətim ɓlaːj	kətiːm ɓo̞ːʔ
495	white	sɔː	ɓlaːj	ɓlaːj	ɓlaːj	ɓlaːj

Table 38. The initial cluster *bl

The correspondence set for the initial cluster *br is shown in Table 39. Only three examples are found in the current data.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
42	mountain	pʰnum	ɓruː	ɓroː~ɓrɐw		ɓruː
198	rib	cʰʔəŋ cumniː	ŋhaːŋ braːɲ	ŋhaːŋ braːɲ	haːŋ braːɲ	ŋhaːŋ braːɲ
537	bad (evil)	ʔaːkrɔʔ	ɓroː	ɓroː		ɓrɔː

Table 39. The initial cluster *br

The correspondence set for the initial cluster *tr is shown in Table 40.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
60	mushroom	pʰsət	tria	triː	treː	tria
104	buffalo	krɔʔbaj	triaʔ	triːʔ	treːʔ	triaʔ
172	chest	truːŋ	tru̞ːŋ	tru̞ːŋ	truːŋ	tru̞ːŋ
189	nail (finger-)	kracɔːʔ	ɲtrɛh~kəntrɛh	kəntre̞ːh	kəre̞ː~kəntre̞ːh	kəntrɛh
487	straight	trɔŋ	troŋ	trəŋ	traŋ	trɔŋ

Table 40. The initial cluster *tr

However, there are also about ten correspondence sets in which Kuy Mla and Kuy Mai tend to lose the initial *t from the cluster *tr. This only appears to occur following a syllabic *n̩ in the presyllable, even if that presyllable is lost completely. This may be due to a process of cluster simplification to avoid a string of three consonants. However, it is interesting that *t is missing in some forms where the presyllable is not present, suggesting perhaps that this process of cluster simplification took place before the presyllable was lost. There may also be other factors not yet apparent. A correspondence set for the pattern of the initial *t being

lost in Kuy Mla and Kuy Mai following syllabic *ŋ̩ in other varieties is shown in Table 41.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
116	egg	pɔːŋ	ŋ̩treːl	ŋ̩treːl	reːl~riːl	ʔreːl~ʔreːl
117	chicken	moɐn	ŋ̩truaj	truːj	ruːj	ruaj
255	pestle	ʔɔŋrɛː	ŋ̩trɛː	ŋ̩trɛː	ŋ̩rɛː	rɛː~ŋ̩rɛː
466	long	wɛːŋ	ŋ̩trɨːŋ	ŋ̩trɨːŋ	rɨːŋ	rɨːŋ
476	deep	criɯ	ŋ̩tru	ŋ̩truː	ruː	ruː

Table 41. The initial cluster *tr, following presyllable *ŋ̩

Some speakers in Mai and Mla optionally retain the full form (e.g. #255 "pestle") (particularly in the careful speech of an elicited wordlist), but more often /t/ tends to be dropped in natural speech, such that a deletion rule can be posited, as follows:

Rule 1. Deletion (Mai, Mla)
*tr > r / ŋ̩ _____

In Rule 1, the initial cluster *tr is simplified to /r/ by the deletion of /t/ following a syllabic nasal presyllable /ŋ̩/.

The correspondence set for the initial cluster *sr is shown in Table 42. Only four examples are found in the current data.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
57	bamboo	rəsɛj	sraŋ	sraŋ	sraŋ	sraŋ
80	rice (unhusked)	srəw	sraː	sraː	sraː	sraː
85	wet rice field	srae	srɛː	srɛː	srɛː	srɛː
227	village	pʰuːm	srok	srok~hrɔk	sroʔ	sroʔ

Table 42. The initial cluster *sr

The correspondence set for the initial cluster *kl is shown in Table 43.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
55	seed	kroɐp	klɑːŋ	klɑːŋ	klɑːŋ	klɑːŋ
138	snail	kʰcɔŋ	klɑː	klɑː	klɑː	
206	excrement	liəmuə?/ʔaːc	klɑːŋ	klɑːŋ	klɑːŋ	klɑːŋ
318	to forget	pʰlɛc		klɑk	klə?	klɑ?
456	many	craən	kih	klɐŋ	kləŋ	klɨh

Table 43. The initial cluster *kl

The correspondence set for the initial cluster *kr is shown in Table 44.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
11	thunder	pkɔː loɐn	krɨm	krəm	krəm	krəm
97	to bark	pruh	kruh	kroh	kruːh	kroːh
253	lid	komrup (cʰnaŋ)	krɔːp	krətəl	kruap	rɔp~krop
503	old (person)	(mənuh) cah	kriːŋ	kreːŋ	krɛːŋ	
538	right (correct)	trɔuw	kraj	kraj		kraj

Table 44. The initial cluster *kr

The correspondence set for the initial cluster *hl is shown in Table 45.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
52	leaf	slək (chəː)	hlaː	hlaː	hlaː	hlaː
112	wing	slaːp	hlaːp	hlaːp	hlaːp	hlaːp
190	buttocks	kuːt	hlaː təweːl	hlaː təpɛːl		
256	spoon	slaːpriə	lap pria	slaː pria	hlaːp pria	

Table 45. The initial cluster *hl

Some further discussion of the initial cluster *hl is necessary. It is noted that #256 'spoon' has an initial [sl] in Kuy Ntua; however, this could be a direct borrowing from Khmer, since the [s] doesn't occur in Kuy for #112 'wing' where Khmer also has [s]. In order to consider issues of symmetry, Table 14 from Section 4.5 is reproduced here as Table 46.

Initial element	Second element of cluster							
	/-l-/				/-r-/			
	Ntra	Ntua	Mai	Mla	Ntra	Ntua	Mai	Mla
/p-/	+	+	+	+	+	+	+	+
/b-/	+	+	+	(+)	(+)	+	(+)	(+)
/t-/	(+)				+	+	+	+
/s-/					+	+	+	+
/k-/	+	+	+	+	+	+	+	+
/h-/	+	+	+	+				

Table 46. Initial consonant clusters

In this case it is logical to posit that historically the /hl/ cluster was /sl/ , which would fill the gap in the chart for initial element /s-/, while the bottom row could be eliminated. Looking at other Katuic languages for the words 'leaf' and 'wing', both /sl/ and /hl/ occur as initials. It is likely that the cluster /hl/ developed from /sl/ at some stage in the past. However, the present study is considering only the current stage of Kuy in Cambodia, and there is no concrete evidence in the current data that the cluster *sl is present; therefore, at this stage only *hl will be posited for this level of reconstruction.

Other initial consonant cluster sequences in the data, with only one or two examples each, are [tl], [mr], [sn] and [sw]. Some of these sequences are suspected borrowings from Khmer or other sources. Others may be presyllables (without a vowel) closely attached to the initial consonant. There is not a sufficient number of examples in the data to reliably posit these as proto-clusters. A summary of the proto-initial clusters and their reflexes is shown in Table 47.

Initial Clusters	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
*pl	pl	pl	pl	pl
*pr	pr	pr	pr	pr
*bl	bl	bl	bl	bl
*br	br	br	br	br
*tr	tr	tr	tr ~ r	tr ~ r
*sr	sr	sr	sr	sr
*kl	kl	kl	kl	kl
*kr	kr	kr	kr	kr
*hl	hl	hl	hl	hl

Table 47. Reflexes of the initial clusters

The preceding table shows that all of the proto-initial clusters are preserved in each of the Kuy dialects in Cambodia, with the exception that initial *tr sometimes occurs as [r] in Kuy Mai following a nasal presyllable.

5.3.3 Final consonants

All consonants occur in word-final position except for the voiced stops /b/ and /d/ and the fricative /s/. Examples are given from the data for each of the final consonants.

5.3.3.1 Stops

Final voiceless bilabial stop /p/ occurs in all Kuy varieties. Thus the proto-phoneme *p in final position may be posited for the proto-language as shown in Table 48.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
98	to bite	kʰam	kap	kap	kap	kap
112	wing	slaːp	hlaːp	hlaːp	hlaːp	hlaːp
418	to boil water	dam (tɨk)	ʔəp	ʔəp	ʔop	ʔop
469	short (height)	tiəp	ta̰ːp	tḭap	tiap	ta̰ːp
491	under	kraom	kədəːp	kəɗɔːp	kədop	kədop

Table 48. The final voiceless bilabial stop *p

Final voiceless alveolar stop /t/ occurs in all Kuy varieties. Thus the proto-phoneme *t in final position may be posited for the proto-language as shown in Table 49.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
359	to enter	cɔul	mṳːt	mṳːt	moːt	mo̝ːt
381	to tie	cɔːŋ	sat	sat	sat	sat
419	to burn (wood)	cʰɛh	kaːt	kaːt	kaːt	kaːt
464	big	tʰom	pi̤ːt	pi̤ːt	pi̤ːt	pi̤ːt
517	cold	trɔceɐʔ	cəŋɛːt	cəŋeːt	cəŋʔeːt	cəŋɛːt

Table 49. The final voiceless alveolar stop *t

Final voiceless palatal stop /c/ occurs in all Kuy varieties. Thus the proto-phoneme *c in final position may be posited for the proto-language as shown in Table 50.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
36	sand	ksac	səkaːc	səkaːc	skaːc	səkaːc
181	intestines	puəhwiən	rɑːc	rṳac	raic	rɑːc
289	to drink	pʰək	ŋɑːc	ŋuac	ŋɔːc	ŋɑːc
329	to sleep	deik / keːŋ	6ac	bɛc	bəc	bic
380	to pick up	rɵːh	tɔːc	tɔːc	tɔːc	tɔːc

Table 50. The final voiceless palatal stop *c

Final voiceless velar stop /k/ occurs in Kuy Ntra and Kuy Ntua, but this stop rarely occurs in final position in Kuy Mai or Kuy Mla. Thus the proto-phoneme *k in final position may be posited for the proto-language as shown in Table 51, with a weakening rule following.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
32	earth (soil)	dəj	kətɛːk	kətɛːk	kətaɛʔ	kətɛːʔ
41	iron	daeʔ	taːk	taːk	taːʔ	taːʔ
100	pig	cruːk	li̤ːk	li̤ːk	liːʔ	leːʔ
219	husband	pdɛj	kəjaːk	kəjaːk	kəjaːʔ	kəjaːʔ
227	village	pʰuːm	srok	srok~hrɔk	sroʔ	sroʔ

Table 51. The final voiceless velar stop *k

Rule 2. Weakening (Mai, Mla)
*k > ʔ / ____#

Rule 2 states that proto-velar stop *k becomes a glottal stop /ʔ/ in final position in Kuy Mai and Kuy Mla.

Final glottal stop /ʔ/ occurs in all Kuy varieties. Thus the proto-phoneme *ʔ in final position may be posited for the proto-language as shown in Table 52.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
26	water	tɨk	ɗaːʔ	ɗaːʔ	ɗaːʔ	ɗaːʔ
33	mud	pʰɔk / pʰuəʔ	pɛʔ	pɛʔ	peʔ	pɛʔ
104	buffalo	krɔʔbaj	triaʔ	triːʔ	treːʔ	triaʔ
371	to pick/pluck	bɛh	taʔ	taʔ	taʔ	taʔ
509	sour	cuː	ɲɔʔ	ɲɔʔ	ɲɔʔ~ɲɔuʔ	ɲɔʔ

Table 52. The final glottal stop *ʔ

A summary of the proto-final stops and their reflexes in the descendent speech varieties is shown in Table 53.

*Stops	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
*p	p	p	p	p
*t	t	t	t	t
*c	c	c	c	c
*k	k	k	ʔ	ʔ
*ʔ	ʔ	ʔ	ʔ	ʔ

Table 53. Reflexes of Proto-Kuy final stops

The preceding table shows that all of the proto-final stops are preserved in each of the Kuy dialects in Cambodia, except that final *k usually becomes /ʔ/ in Kuy Mai and Kuy Mla.

5.3.3.2 Fricatives

The only fricative occurring in word-final position is the voiceless glottal fricative /h/. Final /h/ occurs in all Kuy varieties. Thus the proto-phoneme *h in final position may be posited for the proto-language as shown in Table 54.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
252	cooking pot	cʰnaŋ	ɟɛh	ɟɛh	ɟɛh	ɟɛh
260	fire	pʰləːŋ	ʔuːh	ʔuːh	ʔuːh	ʔuːh
351	to climb (tree)	laəŋ	sɔh	sɔh	sɔh	sɔh
395	to split (wood)	puh	pah	pah	pah	pah
512	rotten	puk	kəʔoh	kləʔoh	kəʔoh	kləʔoh

Table 54. The final voiceless glottal fricative *h

The proto-final voiceless glottal fricative with its reflexes in the descendent speech varieties is shown in Table 55.

*Fricative	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
*h	h	h	h	h

Table 55. Reflexes of Proto-Kuy final fricatives

The preceding table shows that the proto-final voiceless glottal fricative is preserved in each of the Kuy dialects in Cambodia.

5.3.3.3 Nasals

Final bilabial nasal /m/ occurs in all Kuy varieties. Thus the proto-phoneme *m in final position may be posited for the proto-language as shown in Table 56.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
127	turtle	ʔandaək	təmoːm	təmɔːm	təmaom	təmɔːm
223	younger sibling	pəʔɔun	sɛːm	sɛːm	sɛːm	sɛːm
472	to be fat	tʰɐɐt	pləm	plɐm	plom	plom
508	sweet	pʰəʔaem	ŋaːm	ŋiam	ŋaːm	ŋaːm
511	spicy, hot	hɐl	ham	ham	ham	ham

Table 56. The final bilabial nasal *m

Final alveolar nasal /n/ occurs in all Kuy varieties. Thus the proto-phoneme *n in final position may be posited for the proto-language as shown in Table 57.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
214	child (one's)	koun	kɑːn	kɑːn	kɑːn	kɑːn
284	to swallow	leːp	lɨːn	lɨːn	lən	lən
378	to give	ʔaoj	ʔɑːn	ʔãːn	ʔoːn	ʔɑːn
406	to be ripe	tum	ceːn	cɛːn	cɛːn	cɛːn
470	thick	krah	kəɓən	kəɓən	kəɓən	kəɓɐn

Table 57. The final alveolar nasal *n

Final palatal nasal /ɲ/ occurs in all Kuy varieties. Thus the proto-phoneme *ɲ in final position may be posited for the proto-language as shown in Table 58.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
122	snake	(sat) puh	kəsaɲ	kəsaɲ	kəsaɲ	kəsaɲ
198	rib	cʰʔəŋ cumniː	ŋhaːŋ braːɲ	ŋhaːŋ braːɲ	haːŋ braːɲ	ŋhaːŋ braːɲ
240	to weave	tbaːɲ	taːɲ	taːɲ	taːɲ	taːɲ
278	to smell	hət kʰlən	huːɲ	hoːɲ	hɔːɲ	hoːɲ
479	long time	juː	ɗuːɲ	ɗuːɲ	ɗuːɲ	ɗuːɲ

Table 58. The final palatal nasal *ɲ

Final velar nasal /ŋ/ occurs in all Kuy varieties, and is the most common final consonant in the Kuy data. Thus the proto-phoneme *ŋ in final position may be posited for the proto-language as shown in Table 59.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
55	seed	kroɐp	klɑːŋ	klɑːŋ	klɑːŋ	klɑːŋ
108	elephant	dɔmrej	ciaŋ	ciːŋ	ciŋ	ciaŋ
163	tooth	tʰmeɲ	kənɛːŋ	kənɛːŋ	kənɛːŋ	kənɛːŋ
197	bone	cʰʔəŋ	ŋhaːŋ	ŋhaːŋ	haːŋ	ŋhaːŋ
230	house	pʰteah	ɗoŋ	ɗoŋ	ɗoŋ	ɗuŋ

Table 59. The final velar nasal *ŋ

A summary of the proto-final nasals and their reflexes in the descendent speech varieties is shown in Table 60.

*Nasals	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
*m	m	m	m	m
*n	n	n	n	n
*ɲ	ɲ	ɲ	ɲ	ɲ
*ŋ	ŋ	ŋ	ŋ	ŋ

Table 60. Reflexes of Proto-Kuy final nasals

The preceding table shows that all of the proto-final nasals are preserved in each of the Kuy dialects in Cambodia.

5.3.3.4 Trill and approximants

Final alveolar trill /r/ occurs in three Kuy varieties, but does not occur in Kuy Mai. In words cognate with Khmer, this final corresponds with the written Khmer final "r" which is not pronounced in modern spoken Khmer, but is pronounced with a rolled or trilled /r/ in most Kuy varieties. Thus the proto-phoneme *r in final position may be posited for the proto-language as shown in Table 61, with a deletion rule for Kuy Mai.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
53	flower	pka:	piar	piar	pi:	piar
157	ear	trɔciə?	kəto:r	kəto:r	kəto:	kəto:r
338	to scratch	kɔka:j / ?ɛh	kəka:r	kəka:r	kəka:	kəka:r
486	left (side)	(kʰa:ŋ) cwe:ŋ	wɛ:r	wɛ:r	wɛ:	
515	wet	totɨk	ju:r	jo:r	jo:	ju:r

Table 61. The final alveolar trill *r

Rule 3. Deletion (Mai)
$$*r > \emptyset \; / \; \underline{\quad\quad} \; \#$$

Rule 3 states that the proto-alveolar trill *r is deleted in final position in Kuy Mai.

Final labial-velar approximant /w/ occurs in all Kuy varieties. Thus the proto-phoneme *w in final position may be posited for the proto-language as shown in Table 62.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
35	stone	tmɔː	təmaw	təmaw	təmaw	təmaw
83	rice (pounded)	ʔɔnkɔː	rəŋkaw	rəŋkaw	ŋkaw	rəŋkaw
128	crocodile	krɔpɨː	pliaw	pliːw	pliuw	pliaw
386	to wash (dishes)	liəŋ (caːn)	raːw	riaw	raːw	raːw
516	hot	kdaɯ	kətaw	kətaw	kətaw	kətaw

Table 62. The final labial-velar approximant *w

Final palatal approximant /j/ occurs in all Kuy varieties. Thus the proto-phoneme *j in final position may be posited for the proto-language as shown in Table 63.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
81	rice (cooked)	baːj	ɗɔːj	ɗɔːj	ɗoij	ɗoːj
95	rat	kɔndol/kandaw	kənaj	kənaj	kənaj	kənaj
106	horn	snaeŋ	təkɑːj	təkɑːj	təkaːj	təkɑːj
210	person	mənuh	kuaj	kuːj	kuj	kuaj
495	white	sɔː	ɓlaːj	ɓlaːj	ɓlaːj	ɓlaːj

Table 63. The final palatal approximant *j

Final lateral approximant /l/ occurs in all Kuy varieties. Thus the proto-phoneme *l in final position may be posited for the proto-language as shown in Table 64.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
220	wife	prɔpuən	kəntɛːl	kəndɛːl	kəndɛːl~kəndeːl	kəneːl
290	to be drunk	srɔwəŋ	ɓuːl	ɓoːl	ɓoːl	ɓuːl
302	to lick	lit	jaːl	jaːl	jaːl	jeːl
382	to untie	sraːj	rial	rɨːl~rial	ril	rial
450	seven	pram piː	təwo̞ːl	təpoːl	təpɨːl	təpo̞ːl

Table 64. The final lateral approximant *l

A summary of the proto-final trill and approximants, and their reflexes in the descendent speech varieties is shown in Table 65.

*Trill and approximants	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
*r	r	r	Ø	r
*w	w	w	w	w
*j	j	j	j	j
*l	l	l	l	l

Table 65. Reflexes of Proto-Kuy final trill and approximants

The preceding table shows that the proto-final trill and all of the proto-final approximants are preserved in each of the Kuy dialects in Cambodia, with the exception of *r being lost in Kuy Mai.

The complete consonant inventory of Proto-Kuy is summarized and discussed in Section 5.7.

5.4 Vowels

This section partially reconstructs the Proto-Kuy vowels of the main syllable. The vowel system of Kuy, as with most Katuic languages, is complex (see Sections 4.4 and 5.2). As this study is not a detailed phonological analysis, there has not been an exhaustive study of the vowel system. With a limited corpus, there are not enough examples to establish minimal pairs for all phonemes, particularly regarding register contrasts and vowel diphthongization. Native speakers were not available for gathering extra data or for clarification during the analysis, and some errors may exist in the current data, complicating the reconstruction shown here. For the most part, the vowel patterns are consistent for Kuy Ntra and Kuy Ntua, the larger and more stable dialects. When considering all four dialects, some patterns are less consistent.

Register is not included in the reconstruction, except in certain correspondence sets where reference to historical change is necessary. In a full reconstruction, separate correspondence sets should be established for clear and breathy vowels. In this section, they are combined to establish the basic vowel positions.

Since the long vowels are more common, they are presented first, along with diphthongs. There is less evidence for some of the short vowels, but proto-phonemes are posited for most, based on the strength of symmetry with the long vowel inventory.

5.4.1 Long vowels and diphthongs

The inventory of long vowels and diphthongs for the Kuy varieties in Cambodia is given in Section 4.4. The correspondence sets for these are presented in this section.

Correspondence sets for the long close front proto-vowel *iː are shown in Table 66.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
159	lip	bɔbɔu (mɔɐt)	pəpiːr	piːr~pəpiːr	piː~pəpiː	
334	to be ill	cʰiː	ʔiː	ʔiː	ʔiː	ʔiː
463	half a unit	kɔnlah	tədiː	tədiː	tədᵒiː	tədiː
465	small	touc	kiːʔ	kiːʔ		
468	tall	kpuəh	tị̈ː	tị̈ː	tiː	tị̈ː

Table 66. The long vowel *iː

Additional correspondence sets occur in the data where some varieties have /iː/ and others have /ia/ or /eː/. This pattern set is shown in Table 67.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
60	mushroom	pʰsət	tria	triː	treː	tria
104	buffalo	krɔʔbaj	triaʔ	triːʔ	treːʔ	triaʔ
108	elephant	dɔmrej	ciaŋ	ciːŋ	ciŋ	ciaŋ
161	saliva	tɨkmɔɐt	wia	wiː	wiː	wia
410	to dry in sun	haːl	tiaŋ	tiːŋ	tiŋ	tiaŋ

Table 67. The vowel pattern /ia~iː~eː/

The data in Table 67 shows a consistent correspondence for Ntra /ia/, Ntua /iː/ and Mla /ia/, but not for Mai, which varies between /iː/ (or /i/) and /eː/. The

environments for the sets in Table 66 and 67 appear to overlap, making it difficult to pose a vowel change rule. In referring back to the discussion in 5.2, a correspondence between /ia/ and /iː/ occurs between Kuay and Kuy dialects in Thailand. In relation to Proto-Katuic, Diffloth (1982) and Sidwell (2005) also attest to this correspondence in Kuy, positing *ia as the proto-form at the Katuic level (though Sidwell finds the /iː/ reflex only before final velar nasal, which matches some of the data in Table 67). No proto-phoneme or change rule is posited for Kuy in Cambodia at this time, but consideration is given in the summary of rules in Section 5.6.

The Kuy Mai form for #108 'elephant' and #410 'to dry in the sun' have a shortened vowel. This also occurs with some other vowels in Mai, but not with enough regularity to posit a rule. It appears to be free variation.

Correspondence sets for the long close-mid front proto-vowel *eː are shown in Table 68.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
116	egg	pɔːŋ	ɲtrẹːl	ɲtrẹːl	reːl~riːl	ʔreːl~ʔreːl
177	waist	cɔŋkɛh	ŋkeːŋ	ŋkeːŋ	ŋkeːŋ	ŋkeːŋ
396	to tear	haɛk	heːk	heːk	heː?	hɛ?
484	empty	toteː	tɔtẹː	tɔtẹː	tɔteː	tɔteː
532	blind	lɔŋɪt	tɔweːt	weːt	tɔweː?	tɔweːt

Table 68. The long vowel *eː

Example #396 'to tear' shows a lower reflex in Kuy Mla but this may be influenced by the lower vowel in the Khmer form, or may be related to the pattern found in Table 70. There is sufficient evidence to posit *eː as the proto-phoneme.

Correspondence sets for the long open-mid front proto-vowel *ɛː are shown in Table 69.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
85	wet rice field	srae	srɛː	srɛː	srɛː	srɛː
215	child, young	kʰmeiŋ	krənɛːn~kənɛːn	kərnɛːn	kərnɛːn	kənɛːn
223	younger sibling	pəʔɔun	sɛːm	sɛːm	sɛːm	sɛːm
379	to take	joːk	ʔɛːl	ʔɛːl	ʔɛːl	ʔɛː
494	black	kmaɯ	təwɛːŋ	təwɛːŋ	tewɛːŋ	təwɛːŋ

Table 69. The long vowel *ɛː

Additional correspondence sets occur in the data where some varieties have /eː/ and others have /ɛː/ or /ɛ/. The first pattern set is shown in Table 70.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
50	root	rɨh	rɛːh	rẹːh	rẹh	rɛːh
189	nail (finger-)	kracɔːʔ	ɳtrɛh~kəntrɛh	kəntrẹːh	kərẹː~kəntrẹːh	
201	skin	sbaek	səbɛːk	səbeːk	spaic	
435	to divide	caek	cɛːk	ceːk	ceːʔ	cɛːʔ
517	cold	trɔcɐʔ	cəŋɛːt	cəŋeːt	cəŋʔeːt	cəŋɛːt
523	soft	tuən	ləmɛn	ləmeːn	ləmen	

Table 70. The vowel pattern /eː~ɛː~ɛ/

The data in Table 70 shows a consistent correspondence for Ntra /ɛː/, Ntua /eː/ and Mla /ɛː/, but not for Mai, which varies between /eː/, /e/ and the unusual /ai/ (the latter likely influenced by the Khmer form). The sets in Table 68, 69 and 70 appear to occur in some overlapping environments, making it difficult to pose a vowel change rule. In relation to Proto-Katuic, Diffloth (1982) and Sidwell (2005) also attest to this correspondence in Kuy, positing *eː as the proto-form at the Katuic level. No proto-phoneme or change rule is posited for Kuy in Cambodia at this time, but consideration is given in the summary of rules in Section 5.6.

The Ntra and Mai forms for #523 'soft' and the Ntra form for #189 'fingernail' have a shortened vowel. This also occurs with some other vowels, but not with enough regularity to posit a rule. It appears to be free variation.

Correspondence sets for the long open front proto-vowel *aː, which is the most common long vowel, are shown in Table 71.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
26	water	tɨk	ɗaːʔ	ɗaːʔ	ɗaːʔ	ɗaːʔ
185	palm	baːt daj	təlaːŋ	təlaːŋ	təlaːŋ	təlaːŋ
202	blood	cʰiəm	haːm	haːm	haːm	haːm
282	to eat	hɔup	caː	caː	caː	caː
419	to burn (wood)	cʰɛh	kaːt	kaːt	kaːt	kaːt
495	white	sɔː	ɓlaːj	ɓlaːj	ɓlaːj	ɓlaːj

Table 71. The long vowel *aː

Additional correspondence sets occur in the data where some varieties have /aː/ and others have /ia/. The first pattern set is shown in Table 72.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
7	rain	pʰliəŋ	ma̤ː	mi̤a	ma̤ː	ma̤ː
49	thorn	bɔnlaː	cəlaː	cəlia	ʔala̤ː	rəlaː
99	cat	cʰmaː	ŋaːw	ŋiaw	ŋaːw	
281	to weep/cry	jum	ɲa̤ːm	ɲi̤am	ɲaːm	ɲaːm
386	to wash(dishes)	liəŋ (caːn)	raːw	riaw	raːw	raːw
508	sweet	pʰəʔaem	ŋaːm	ŋiam	ŋaːm	ŋaːm

Table 72. The vowel pattern /aː~ia/

The data in Table 72 shows a consistent correspondence for Ntra /aː/, Ntua /ia/, Mai /aː/ and Mla /aː/. In looking for environmental conditioning, it is noted that in Table 72, all the initial consonants of the main syllable are voiced sonorants, though some voiced sonorant initials are also found when all reflexes are /aː/. Here it appears that a more careful study of register may be required. It is noted that in the plentiful examples of cognate sets where all reflexes across varieties are /aː/, (Table 71 and other examples) no breathiness occurs, while some breathiness occurs in the /ia~aː/ examples, as in Table 72. A correspondence between /aː/ and /ia/ occurs between Kuay and Kuy dialects in Thailand, though without respect to register. Pailin (1980) notes that the reflex /ia/ occurs in Kuy only following voiced stops. In relation to Proto-Katuic, Diffloth (1982) and Sidwell (2005) attest to this correspondence in Kuy, positing *aː as the proto-form at the Katuic level, which becomes clear vowel /aː/ and breathy vowel /i̤a̤/ in Kuy. It is suspected that

if a more careful study of register had been accomplished, more of the reflexes in Table 72 would show breathy register. The diphthongization is likely to have occurred with the development of register (though apparently only in one dialect). Therefore the proto-form is posited as *aː which has been changed in Kuy Ntua as in Rule 4.

Rule 4. Vowel diphthongization (Ntua)
*aː > ia / [+breathy]

In Rule 4, the long open front proto-vowel *aː has been diphthongized to become /ia/ in the presence of breathy register in Kuy Ntua. The breathy register is not necessarily the conditioning environment but actually points to a voicing contrast in the initial consonant at an earlier stage that has been neutralized in the present varieties.

There are a small number of examples where the Mai and (sometimes) Mla dialects seem to not follow this pattern. However, in each of these cases, it appears that the Khmer form is influencing the Mai and Mla forms, so that it does not necessarily introduce any inconsistency in the pattern established in Rule 4. Some examples are shown in Table 73.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
39	gold	miəh	maːh	miah	miah	miah
119	duck	tiə	taː	tia	tia	taː
231	door	twiə	təwaːr	təwiar	təwia	təwiar
363	to pull	tiəɲ	taːɲ	tiaɲ	tiaɲ	nɔŋ
429	to guard	jiəm	jaːm	jiam	jiam	jaːm
469	short (height)	tiəp	taːp	tiap	tiap	taːp

Table 73. The vowel pattern /ia~aː/,

with apparent inconsistencies

Correspondence sets for the long close central proto-vowel *ɨː are shown in Table 74.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
350	to crawl	viə	mɨːr	mɨːr		mɨːr
464	big	tʰom	pɨːt	pɨːt	pɨːt	pɨːt
466	long	wɛːŋ	ɳtrɨːŋ	ɳtrɨːŋ	rɨːŋ	rɨːŋ
526	slow	jɵːt	jɨːt	jɨːt	jɨːt	jɨːt

Table 74. The long vowel *ɨː

Correspondence sets for the long mid central proto-vowel *əː are shown in Table 75.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
125	water leech	cʰlɵːŋ	cələːŋ	cələːŋ	cələːŋ	cələːŋ
152	eyebrow	cəɲcaəm	ɲcəːm	cəːm	ɲcəːm	
279	to see	kʰɵːɲ	pəːp .	pəːʔ	pəʔ	pəʔ
309	to answer	cʰlaej	cʰələːj	cʰələːj	cʰələːj	cələːj
441	to lift	lɵːk	lə̞ːk	lə̞ːk	lə̞ːʔ	lə̞ːʔ

Table 75. The long vowel *əː

The Mai and Mla forms for #279 'to see' have a shortened vowel. This also occurs with some other vowels, but not with enough regularity to posit a rule. It appears to be free variation. Based on the consistency in the Ntra and Ntua forms, the proto-form *əː can be posited.

There are no examples of the long open central vowel [ɐː] in Kuy varieties of Cambodia. This should be pursued at a larger Proto-Kuy scale by comparing items which have the long open central vowel in Kuy varieties of Thailand, then rechecking with native speakers of Cambodian Kuy varieties.

Correspondence sets for the long close back proto-vowel *uː are shown in Table 76.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
134	termite	kɔndiə	ɲtrṳːɲ	ɲtrṳːɲ		ɲtrṳːɲ
172	chest	truːŋ	trṳːŋ	trṳːŋ	truːŋ	trṳːŋ
229	boat	tuːk	tṳːk	tṳːk	tuʔ	tṳːʔ
260	fire	pʰləːŋ	ʔuːh	ʔuːh	ʔuːh	ʔuːh
476	deep	crɨɯ	ɲtru	ɲtrṳː	rṳː	rṳː
479	long time	juː	ɗuːɲ	ɗuːɲ	ɗuːɲ	ɗuːɲ

Table 76. The long vowel *uː

The Mai form for #229 'boat' has a shortened vowel. This also occurs with some other vowels, but not with enough regularity to posit a rule. It appears to be free variation. Based on the consistency in the Ntra and Ntua forms, the proto-form *uː can be posited.

Additional correspondence sets occur in the data where some varieties have /uː/ and others have /ua/. This pattern set is shown in Table 77.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
117	chicken	moɛn	ɲtruaj	trṳːj	ruːj	ruaj
210	person	mənuh	kuaj	kuːj	kuj	kuaj
444	one	muəj	mṳːj	muːj	muaj	mṳaj

Table 77. The vowel pattern /uː~ua/

The data in Table 77 shows a consistent correspondence for Ntua /uː/ and Mla /ua/, but less consistent for Ntra and Mai, where the form varies and the diphthongization is not very strong phonetically. Both breathy and clear register occur in the pattern sets for both Table 76 and 77. The only examples of the /uː~ua/ pattern in the current data occur before a palatal final /j/, so it would be possible to suggest a simple phonological change predictable by environment. However, referring back to the discussion in 5.2, there is outside evidence for considering this a regular correspondence. The variation in #210 'person' represents the names of separate dialects in Thailand, Kuuy and Kuay. This is noted as a regular correspondence between these two dialects, according to Van der Haak and Woykos (1990). These researchers observed the /uː~ua/

correspondence in other environments as well, such as in an open syllable and before final /t/. The possible effects of register are not addressed in regard to the correspondences. Pailin (1980) suggests that Kuay /ua/ corresponds to Kuy /uː/ after voiceless stops. In relation to Proto-Katuic, Diffloth (1982) and Sidwell (2005) attest to this correspondence in Kuy, positing *ua as the proto-form at the Katuic level. No proto-phoneme or change rule is posited for Kuy in Cambodia at this time, but consideration is given in the summary of rules in Section 5.6.

Correspondence sets for the long close-mid back proto-vowel *oː are shown in Table 78.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
77	corn	poːt	po̞ːt	po̞ːt	poːt	poːt
158	mouth	moɐt	tənoːh	tənoːh	tənoh~tənauh	tənoːh
347	to run	rut	ɓoːl	ɓoːl	ɓoːl~ɓauːl	
358	to follow	(tɨɯ) taːm		toːn	təvoːn	toːn
450	seven	pram piː	təwo̞ːl	təpoːl		təpo̞ːl
507	different	kʰoh (kʰniə)	loːh	loːh	loh	lɑːh

Table 78. The long vowel *oː

In Chranaol, /oː/ in some words was heard as the diphthong [au] from at least one speaker, as seen in #158 'mouth' and #347 'run', but these appear to be in free variation. Wider study among the community is needed to confirm this. Kuy Mai has a shortened vowel in #507 'different', as discussed with other vowels. Kuy Mla has a lower reflex in this same item, but this is not seen in other correspondences.

Additional correspondence sets occur in the data where some varieties have /oː/ and others have /uː/. This pattern set is shown in Table 79.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
71	coconut	pʰlae douŋ	tuːŋ	toːŋ	toːŋ	toːŋ
233	roof	dɔmboul	təmpuːl	təmpoːl	təpoːl	təmpoːl
278	to smell	hət kʰlən	huːɲ	hoːɲ	hɔːɲ	hoːɲ
290	to be drunk	srɔwəŋ	ɓuːl	ɓoːl	ɓoːl	ɓuːl
424	to play (str instr)	kɔut (troː)	kuːt	koːt	koːt	koːt
515	wet	totɨk	juːr	joːr	joː	juːr

Table 79. The vowel pattern /oː~uː/

The data in Table 79 shows a consistent correspondence for Ntra /uː/ and Ntua /oː/, but less consistency for Mai, which varies between /oː/ and /ɔː/, and for Mla, which varies between /uː/ and /oː/. The sets in Table 76, 78 and 79 appear to occur in some overlapping environments. A correspondence between /uː/ and /oː/ is noted by Pailin (1980) between Kuay and Kuy dialects in Thailand. In relation to Proto-Katuic, Diffloth (1982) and Sidwell (2005) attest to this correspondence in Kuy, positing *uː as the Proto-Katuic form, though the reflexes /uː/ and /oː/ vary by environment and register. No proto-phoneme or change rule is posited for Kuy in Cambodia at this time, but consideration is given in the summary of rules in Section 5.6.

Correspondence sets for the long open-mid back proto-vowel *ɔː are shown in Table 80.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
143	wasp	ʔamal	hɔːŋ	hɔːŋ	hɔːŋ	
218	niece/nephew	kʰmuj	kəmɔːn	kəmɔːn	kəmɔː	
380	to pick up	rɵːh	tɔːc	tɔːc	tɔːc	tɔːc
447	four	buən	pɔːn	pɔːn	pɔː	pɔːn
499	poor	krɔː	krɔː	krɔː	krɔː	krɔː

Table 80. The long vowel *ɔː

Additional correspondence sets occur in the data where some varieties have /ɔː/ and others have /oː/. This pattern set is shown in Table 81.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
38	lime	kəmbao	kəmboːr	kəmbɔːr	kəmboː	kəmoːr
127	turtle	ʔandaək	təmoːm	təmɔːm	təmaom	təmɔːm
157	ear	trəciəʔ	kətoːr	kətɔːr	kətoː	kətoːr
167	to shave	kao (moɐt)	koːr	kɔːr	kao~koː	
207	to urinate	noːm	kloːm	klɔːm	klaom	kɬoːm

Table 81. The vowel pattern /ɔːˑoː/

The data in Table 79 shows a consistent correspondence for Ntra /oː/ and Ntua /ɔː/, but less consistency for Mai, which varies between /oː/, /ao/ and /ɔː/, and for Mla, which varies between /oː/ and /ɔː/. The sets in Table 78, 80 and 81 appear to occur in some overlapping environments. A correspondence between /uː/ and /oː/ is noted by Pailin (1980) between Kuay and Kuy dialects in Thailand in some environments. In relation to Proto-Katuic, Diffloth (1982) and Sidwell (2005) attest to this correspondence in Kuy, positing *oː as the Proto-Katuic form, though the reflexes /oː/ and /ɔː/ vary by environment and register. No proto-phoneme or change rule is posited for Kuy in Cambodia at this time, but consideration is given in the summary of rules in Section 5.6.

Correspondence sets for the long open back proto-vowel *aː are shown in Table 82.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
21	year	cʰnam	kəmɑː	kəmɑː	kəmɑː	kəmɑː
55	seed	kroɐp	klɑːŋ	klɑːŋ	klɑːŋ	klɑːŋ
106	horn	snaeŋ	təkɑːj	təkɑːj	təkɑːj	təkɑːj
107	tail	kəntuj	sɑːj	sɑːj	sɑːj	sɑːj
214	(one's) child	koun	kɑːn	kɑːn	kɑːn	kɑːn

Table 82. The long vowel *aː

Additional correspondence sets occur in the data where some varieties have /ua/ and others have /ɑː/. This pattern set is shown in Table 83.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
45	tree	daəm chɵː	nəːm lɑ̤ːŋ	tənɔːm lṳaŋ	tənəːm lɑːŋ	lɑːŋ
142	fly (n.)	ruj	rɑ̤ːj	rṳaj	rɑːj~rɔːj	ʔarɑːj
180	liver	tʰlaəm	lɑ̤ːm	luam	lom	lɑːm
181	intestines	puəhwiən	rɑːc	rṳac	raic	rɑːc
289	to drink	pʰək	ŋɑːc	ŋuac	ŋɔːc	ŋɑːc
451	eight	pram bɵj	təkɑ̤ːl	təkuạl		təkɔ̤ːl

Table 83. The vowel pattern /ua˜ɑː/

The data in Table 83 shows a consistent correspondence for Ntra /ɑː/, Ntua /ua/ and Mla /ɑː/ except for one, and less consistency for Mai, which varies widely. As with the /ia˜aː/ pattern discussed earlier, the conditioning environment is not consistent. Some of the examples with /ua˜ɑː/ are written with breathy vowel register, while all of the examples of the sets where [ɑː] is the reflex in all varieties have clear register. A correspondence between /ua/ and /ɑː/ or /ɔː/ occurs between Kuay and Kuy dialects in Thailand. In relation to Proto-Katuic, Diffloth (1982) and Sidwell (2005) attest to this correspondence in Kuy, though the reflexes vary by environment and register. It is suspected that, as with the /ia˜ aː/ pattern, a more careful study of register in the Kuy dialects would show diphthongization in Kuy Ntua to occur with breathy register, as shown tentatively in Rule 5.

Rule 5. Vowel diphthongization (Ntua)
*ɑː > ua / [+breathy]

In Rule 5, the long open back proto-vowel *ɑː has been diphthongized to become /ua/ in the presence of breathy register in Kuy Ntua. The breathy register is not necessarily the conditioning environment but actually points to a voicing contrast in the initial consonant at an earlier stage that has been neutralized in the present varieties.

Rule 4 and Rule 5 can be generalized as Rule 6, though the features listed only approximate the process.

Rule 6. Vowel diphthongization (Ntua)
*V:[+open] > V[+close]a / [+breathy]

Rule 6 states that, in Kuy Ntua, long open proto-vowels, *aː and *ɑː, become diphthongs, /ia/ and /ua/ respectively, in the presence of breathy register (that is, following an initial consonant which was voiced in Proto-Kuy).

In only three examples in the data, most or all of the dialects have the diphthong /ua/, as shown in Table 84.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
179	lungs	suət	suat	suat	suat	
238	blanket	pʰuəj	pʰuaj	pʰuaj	pʰuaj	
560	we (pl)	puəʔ jɵːŋ	puak haj	puaːk haj		puaʔ wɔhaj

Table 84. The vowel pattern /ua/

In all cases this appears to be influenced by the form in Khmer. There is not sufficient evidence to posit this as a separate proto-phoneme or conditioning.

5.4.2 Short vowels

The inventory of short vowels for the current Kuy varieties is given in Section 4.4. The correspondence sets for these are presented in this section. Inconsistencies exist but will not be discussed for each item, given the limited data for short vowels. Correspondences for short vowels are not given in Pailin (1980), Diffloth (1982) or Van der Haak and Woykos (1990).

Correspondence sets for the short close front proto-vowel *i are shown in Table 85.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
115	bat	prɔciəw	jiːl	ɲcil	ciw	jiːl~ʔajiːl
362	to push	ruɲ	riɲ	riŋ	riɲ	trɔːl
461	few	bɔntəc bɔntuəc	ŋkit ŋkaːt	ŋkit ŋkɐʔ		
520	dull (blade)	rɪl	riːl	ril~rɪl	rɪl~kəmril	

Table 85. The short vowel *i

The evidence is not very strong for positing *i, since there are few cognate sets and only a few occurrences in each dialect. However, based on symmetrical considerations, such as the presence of the long vowel /iː/ and short forms of other vowels, the proto-phoneme *i is posited.

The short close-mid front vowel [e] occurs only about 25 times in the entire corpus of data, never in all four dialects for a single item, and with no apparent patterns for correspondence sets. Some examples are shown in Table 86.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
23	west	(kʰaːŋ) lɪc	hlec	hləc	lec	
33	mud	pʰɔk / pʰuə?	pɛ?	pɛ?	pe?	pɛ?
78	red pepper	məteh	mrɛc	prəteːh	mrec	məteh
135	centipede	(sat) k?aep	kʰep	kʰep	kʰep	kə?ɛːp
254	mortar	tbalkən	təwal kiːn	təpal ken	təpɔl~təwɔl kən	təpal kɛn
274	knife	kambət	m̥piːt	m̥bət	pət	pet

Table 86. The short vowel [e]

Many of the examples shown involve words borrowed from Khmer. Based on this data, the evidence is not strong enough to confidently posit the short close-mid front proto-vowel *e. Other Kuy varieties show limited examples of the phoneme /e/ (e.g. Pailin 1980). Further investigation, including a larger data corpus and comparison to related languages, is needed to establish this phoneme or discover possible reasons for this missing vowel.

Correspondence sets for the short open-mid front proto-vowel *ɛ are shown in Table 87.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
33	mud	pʰɔk / pʰuə?	pɛ?	pɛ?	pe?	pɛ?
105	hoof	krɔcɔ? (seh)	sɛh	sɛh		sɛh
178	heart	bɛh douŋ	bɛh ɗuːŋ	bɛh ɗoːŋ	bɛh ɗoŋ	bɛh ɗoŋ
252	cooking pot	cʰnaŋ	ɗɛh	ɗɛh	ɗɛh	dɛh
467	short (length)	kʰlɛj	ŋkih	ŋkɛh	təkɛh	kɛh

Table 87. The short vowel *ɛ

Correspondence sets for the short open front proto-vowel *a, which is by far the most common short vowel, are shown in Table 88.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
16	morning	(peːl) prɨk	tlah	cəlah	cəlah	crəlah
58	bamboo shoot	tumpeaŋ	ɓaŋ	ɓaŋ	baŋ	ʔaɓaŋ
98	to bite	kʰam	kap	kap	kap	kap
122	snake	(sat) puh	kəsaɲ	kəsaɲ	kəsaɲ	kəsaɲ
371	to pick/pluck	bɛh	taʔ	taʔ	taʔ	taʔ
446	three	bɐj	paj	paj	paj	paj

Table 88. The short vowel *a

Correspondence sets for the short close central proto-vowel *ɨ are shown in Table 89.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
247	needle	mcul	ɲcɨl	ɲcɨl	ɲil	ɲəl
303	to smile	ɲoɲim	ɲɔɲim	ɲəɲim	ɲɔɲim	ɲəɲim
313	to think	kɨt	kɨt	kɨt	kɨt	kɨt
394	to break (string)	dac	tɨt	tɨt		tət

Table 89. The short vowel *ɨ

There is less evidence for this in the Mai and Mla dialects, as the reflexes tend to vary, but *ɨ is still tentatively proposed as a proto phoneme. The short close central proto-vowel *ɨ is proposed as a phoneme based mainly on data in Ntra and Ntua, which are the stronger, more viable dialects.

Correspondence sets for the short mid central proto-vowel *ə are shown in Table 90.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
11	thunder	pkɔː loɐn	krɨm	krəm	krəm	krəm
51	stump	kuəl (cʰeː)	kəl	kə̞l	kɪ̣l	kə̞l
67	hand of bananas	snət	snət	snət	snət	
453	ten	dɔp	cɐt	cət		cət
470	thick	krah	kəɓən	kəɓən	kəɓən	kəɓɐn
563	don't (do it)	kom (twɔː)	ɲcə?	ɲcə? (wuːə)		

Table 90. The short vowel *ə

Again, as with other short vowels, evidence is weaker and varied in Mai and Mla. The short mid central proto-vowel *ə is proposed as a phoneme based mainly on data in Ntra and Ntua, which are the stronger, more viable dialects.

Correspondence sets for the short open central vowel [ɐ] are rare and inconsistent. Some examples of the occurrence of [ɐ] are shown in Table 91.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
402	to bury (corpse)	kɔp	tɐp	tɐp	tɔp	top
409	to winnow (rice)	?om (srɔw)	?ɐm	?ɐm	?om	?om
439	to bend	pʊt	pɐt	pɐt		
449	six	pram muəj	təwɐt	təpɐt	təpʷɐt	təpat
530	tired	hɔːt	?ɐh	?ɐh		

Table 91. The short vowel [ɐ]

This vowel is in question because of the lack of a long vowel phoneme. The short open central proto-vowel *ɐ is tentatively proposed as a phoneme based on data in Ntra and Ntua, which are the stronger, more viable dialects.

Correspondence sets for the short close back proto-vowel *u are shown in Table 92.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
155	nose	crɔmoh	muh	muh	mɔ̝uh	mo̝h
166	beard	pukmoɐt	pu̝k	puk	pu?	puk
174	abdomen/belly	puəh	pu̝ŋ	puŋ	pu̝ŋ	pu̝ŋ
306	to speak	ni?jəj	cəmuŋ	cəmuŋ		
543	loose	rɔluŋ/tʰuː	kəluŋ	kərluŋ		

Table 92. The short vowel *u

The short close back proto-vowel *u is proposed as a phoneme based mainly on data in Ntra and Ntua, which are the stronger, more viable dialects.

Correspondence sets for the short close-mid back proto-vowel *o are shown in Table 93.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
227	village	pʰuːm	srok	srok~hrɔk	sro?	sro?
230	house	pʰteah	ɗoŋ	ɗoŋ	ɗoŋ	ɗuŋ
356	to carry child on hip	poː (koun)	po?	po?	po?	po?
383	to sweep	baɔh	poh	poh	bɔh~bauh	bɔh
555	inside	kʰnɔŋ	noŋ	kənoŋ	kənoŋ	kərnoŋ

Table 93. The short vowel *o

The short close-mid back proto-vowel *o is proposed as a phoneme based mainly on data in Ntra and Ntua, which are the stronger, more viable dialects.

Correspondence sets for the short open-mid back proto-vowel *ɔ are shown in Table 94.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
149	brain	kʰuə (kbaːl)	kəbɔk (plɐː)	kləbɔk (plɑː)		
322	to hate	sə?ɔp	sə?ɔp	sə?ɔp	sə?ɔp	
351	to climb (tree)	laəŋ	sɔh	sɔh	sɔh	sɔh
431	to explode	pʰtɔh	pəɗɔh	pəɗɔh	pətuh	
509	sour	cuː	ɲɔ?	ɲɔ?	ɲɔ?~ɲɔuʔ	ɲɔ?

Table 94. The short vowel *ɔ

The short open-mid back proto-vowel *ɔ is proposed as a phoneme based mainly on data in Ntra and Ntua, which are the stronger, more viable dialects.

Correspondence sets for the short open back proto-vowel *ɑ are shown in Table 95.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
44	forest	prɛj (chə:)	kɑh	kɑh	kroŋ	kɑh
57	bamboo	rəsɛj	srɑŋ	srɑŋ	srɑŋ	srɑŋ
102	cow	ko:	ntrɑk	ntrɑk		
263	ashes	pʰɛh	ɓɑh	bɑh	ɓɑh	
293	to cough	kə?ɔ:?	ŋhɑk	kəŋhɑk	ŋhɑ?	kəŋhɑ?
521	heavy	tʰŋuən	ntɑŋ	ntɑŋ	tɑŋ	ntɑŋ

Table 95. The short vowel *ɑ

The short open back proto-vowel *ɑ is proposed as a phoneme based mainly on data in Ntra and Ntua, which are the stronger, more viable dialects.

The complete vowel inventory of Proto-Kuy is summarized and discussed in Section 5.7.

5.5 Presyllables

Kuy words have sesquisyllabic structure as discussed in Section 4.2. Of the 566 total words collected, approximately 30-35% of the words have presyllables, while the rest of the words are monosyllabic. Kuy Mla is on the lower end of the scale with only 30% sesquisyllabic words, Kuy Ntra and Kuy Ntua are on the higher end with 35%, while Kuy Mai is in between at 32%.

Note that in the Kuy speech varieties in Cambodia the presyllable neutral vowel varies in its distinctness or length but is included here in almost all examples. It is written throughout simply as a short central vowel. This section will present each of the most common presyllables, those having more than three correspondence sets in the current data. Other presyllables exist in the data, but without sufficient

examples to successfully reconstruct them. The presyllables are reconstructed as units as opposed to reconstructing the individual phonemes.

As is typical with Mon-Khmer languages, the presyllable is more difficult to reconstruct, as it is less stable and more likely to undergo change, and can vary even from speaker to speaker. For more accurate reconstruction of presyllables, other Katuic languages would need to be compared. Only the clearest Kuy presyllables will be reconstructed here, based on the current data corpus.

Section 4.2 shows that there are two types of presyllables in the Kuy data, $C_{P1}ə(C_{P2})$- and N̩-. For the first type, although there are many examples in the data of final consonants in the presyllable, there are not enough cognate sets of any single given presyllable form with a final consonant, so only $C_{P1}ə$- examples are reconstructed here. Presyllables, especially in Katuic languages, are frequently unstable. For further reconstruction of presyllables, a significantly larger data corpus, native speaker consultants and perhaps evidence from related languages are needed.[28] Correspondence sets for the most common presyllables are shown in Tables 96-101.

Table 96 shows the proto-presyllable *pə-.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
5	cloud	pɔpɔ:ʔ	pəpɔ:k	pəpu̯ak		pəpo:k
19	tomorrow	(tʰŋaj) səʔaek	pənə:~pərnə:	pərnɔ:	pənə:	pənɑ:
159	lip	bɔbɔu (moɐt)	pəpi:r	pi:r~pəpi:r	pi:~pəpi:	
283	to chew	tumpiə	pua:ʔ ba:t	pəbat	bat~pəbat	pəba:t
349	to hide	leɐ:ʔ	pəsuk	pəsuan		pəcuan
434	to exchange	dou	pədu:r	cal~pəcal	pəcal~pəcɔl	pəcal

Table 96. The presyllable *pə-

In example #19 'tomorrow' of Table 96, a presyllable final [r] is sometimes present. It is not certain whether this is a phonological effect (as it seems to appear

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[28] Theraphan (2001:146-7) and Sidwell (2005) reconstruct presyllables of this type at the Proto-Katuic level.

in a few other cases following a presyllable and before an initial nasal), or whether it points to something phonemically present in an earlier form. Without further evidence, it is ignored for now, and the presyllable *pə is posited.

Table 97 shows the proto-presyllable *tə-.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
35	stone	tmɔː	təmaw	təmaw	təmaw	təmaw
168	neck	kɔː	təkaːŋ	təkaːŋ	təkaːŋ	təkaːŋ
185	palm (of hand)	baːt (daj)	təlaːŋ (təj)	təlaːŋ (tɛj)	təlaːŋ (tɛj)	təlaːŋ (tej)
463	half a unit	kɔnlah	təɗiː	təɗiː	təɗ°iː	təɗiː
494	black	kmaɯ	təwɛːŋ	təwɛːŋ	tewɛːŋ	təwɛːŋ

Table 97. The presyllable *tə-

Table 98 shows the proto-presyllable *cə-.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
125	water leech	cʰləːŋ	cələːŋ	cələːŋ	cələːŋ	cələːŋ
306	to speak	niʔjəj	cəmuŋ	cəmuŋ		
312	to sing	criəŋ	cəriaŋ	cəriaŋ	cəriŋ~cərɛŋ	cəriaŋ
375	to drown	luŋ	cəlok	cəlɔk	cələh	cəlɔʔ
542	easy	sruəl	cəʔɐːp	cəʔɔːp		ceʔɔːp

Table 98. The presyllable *cə-

Table 99 shows the proto-presyllable *kə-.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
21	year	cʰnam	kəmaː	kəmaː	kəmaː	kəmaː
95	rat	kɔndol~kandaw	kənaj	kənaj	kənaj	kənaj
122	snake	(sat) puh	kəsaɲ	kəsaɲ	kəsaɲ	kəsaɲ
219	husband	pdɛj	kəjaːk	kəjaːk	kəjaːʔ	kəjaːʔ
471	thin	sədaəŋ	kəɗaː	kəɗaː	kəɗaː	kəɗaː

Table 99. The presyllable *kə-

Table 100 shows the proto-presyllable *sə-.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
14	night	jup	sədʼaw	sədʼaw	sadaw	sədɐw
36	sand	ksac	səka:c	səka:c	ska:c	səka:c
270	crossbow	sna:	səna:	səna:	səna:	səna:
330	to snore	srɔmuk	səŋuak	srəŋo:k	səŋo:ʔ	səŋua?
514	dry	sŋuət	sə?ɐ:t	sə?a:t	sə?əo:t	sə?a:t

Table 100. The presyllable *sə-

As noted in Section 4.2, the second type of presyllable in the data is a generic syllabic nasal N̩- which assimilates to the place of articulation of the initial consonant of the main syllable. In the current data, the syllabic nasal presyllable is found in labial position, [m̩-], only in Kuy Prame and only in two words. Sufficient examples in alveolar, palatal and velar positions are found in each dialect. Table 101 shows the proto-presyllable *N̩-.

Ref. No.	English	Khmer (phonetic)	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
134	termite	kɔndiə	n̩tru̩:ɲ	n̩tru̩:ɲ		n̩tru̩:ɲ
160	tongue	ʔanda:t	n̩ta:t	ta:t	ta:?~n̩ta:?	n̩ta:?
521	heavy	tʰŋuən	n̩taŋ	n̩taŋ	taŋ	n̩taŋ
152	eyebrow	cəɲcaəm	ɲcə:m	cə:m	ɲcə:m	
247	needle	mcul	ɲci̩l	ɲci̩l	ɲil	ɲəl
250	ring (finger-)	cəɲciən	ɲcian	ɲcian	ɲcian~kəcian	ɲcin
73	eggplant	trɔp	ŋkəŋ	ŋkəŋ	kəŋ	ŋkəŋ
146	scorpion (sm)	kʰtuəj	ŋkaw	ŋkaw	ŋkaw	
177	waist	cɔŋkɛh	ŋke:ŋ	ŋke:ŋ	ŋke:ŋ	ŋke:ŋ
197	bone	cʰʔəŋ	ŋha:ŋ	ŋha:ŋ	ha:ŋ	ŋha:ŋ

Table 101. The presyllable *N̩-

The presyllable nasal *N̩- occurs before voiceless main syllable initial stops (and also before /h/ in one case), and the nasal assimilates to the place of articulation of the following main syllable initial. Notice that this presyllable tends to be deleted in Kuy Mla and Kuy Mai. However, this deletion is not regular or predictable enough to posit a rule, and the presyllable *N̩- still occurs in all four varieties. The deletion of the syllabic nasal presyllable appears to be free variation. The presyllable appears to be more stable in the Ntra and Ntua dialects.

The presyllables reconstructed in Tables 96-101 are summarized in Table 102.

*Stops	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
*pə-	pə-	pə-	pə-	pə-
*tə-	tə-	tə-	tə-	tə-
*cə-	cə-	cə-	cə-	cə-
*kə-	kə-	kə-	kə-	kə-
*sə-	sə-	sə-	sə-	sə-
*N̩-	N̩-	N̩-	N̩- ~ Ø	N̩- ~ Ø

Table 102. Proto-presyllable forms

For discussion of other possible presyllables in the data but without sufficient examples for reconstruction, see Section 4.2.

5.6 Phonological rules

A summary of the completed phonological rules identifying the sound changes in the daughter varieties of Kuy is shown in Table 103.

Number and Name of Rules	Speech varieties applying the respective rules			
	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
Rule 1. Deletion			x	x
Rule 2. Weakening			x	x
Rule 3. Deletion			x	
(Rule 4. Vowel diphthongization)		(x)		
(Rule 5. Vowel diphthongization)		(x)		
Rule 6. Vowel diphthongization		x		
NUMBER OF GENERAL RULES		1	3	2

Table 103. Summary of phonological rules

Rules in parentheses and indented are individual rules with a similar process which are later generalized into a single rule, which is in italics. The total number of rules does not count duplicate rules for the same process, but only general and unique rules. For example, Rule 4 shows diphthongization of open front vowels and Rule 5 shows diphthongization of open back vowels, but the process and the environment are the same. Thus Rule 6 generalizes the process, and only Rule 6 is counted in the number of general rules.

Based on these rules, Kuy Mai is the most innovative, followed by Kuy Mla, then Kuy Ntua, and Kuy Ntra is the most conservative. It appears at this point that Kuy Ntra is identical to Proto-Kuy.

Other potential rules have been identified, but without enough evidence or conditioning to posit them as true rules. These correspondences, along with the two diphthongization rules already posited, are summarized in Table 104.

Possible Proto-Kuy	NTRA	NTUA	MAI	MLA	Kuay (Thai)	Kuy (Thai)
*aː	/aː/	/ia/	/aː/	/aː/	/aː/	/ia/
*ɑː	/ɑː/	/ɯa/	/ɑː/, others	/ɑː/	/ɔː/,/ɑː/	/ɯa/
*ia	/ia/	/iː/	/iː/,/eː/	/ia/	/ia/	/iː/
*eː	/ɛː/	/eː/	/eː/,/e/	/ɛː/		
*ua	/ua/	/uː/	/uː/	/ua/	/ua/	/uː/
*uː	/uː/	/oː/	/oː/,/ɔː/	/uː/,/oː/	/uː/	/oː/
*oː	/oː/	/ɔː/	/oː/,/ɔː/,/ao/	/oː/,/ɔː/	/oː/	/ɔː/

Table 104. Summary of vowel change correspondences

The first two correspondences, for *aː and *ɑː, have some evidence of breathy register being consistent with diphthongization in Kuy Ntua, and rules have been proposed. The reflex for *ɑː in Kuy Mai shows much variation; however, the vowels other than /ɑː/ occur only once each, so they are not listed in the table. The possible influence of register in the latter five correspondences of Table 104 is not clear. These five correspondences are consistent for Kuy Ntra and Kuy Ntua, but show some variation for Kuy Mai and Kuy Mla. As discussed in Chapter 2, these latter two varieties are not spoken on a daily basis by the majority of residents in the respective villages, so less consistency may be expected.

The possible Proto-Kuy phonemes shown in Table 104 are proposed based on similar data at a Proto-Katuic level which suggests that the Kuy language has made these changes. However, only one Kuy variety was included in the Proto-Katuic studies. According to the data on Kuy dialects spoken in Cambodia (as well as comparison between the Kuy dialects spoken in Thailand), it appears that within Kuy as a language, there is a dialect split where some have undergone

these changes while others have not. It is particularly interesting to note that Kuy Mai follows the same pattern as Kuy Ntra for the first two correspondences in Table 104, but follows Kuy Ntua more closely (though with some variation) in the last five correspondences in the table. This may give evidence of a dialect chain.

In six of the seven vowel correspondences of Table 104, Kuy Ntra appears to retain the tentatively proposed Proto-Kuy phonemes (though with a change of register in some of these). Kuy Mla appears to retain four of the proto-phonemes regularly, and two others sometimes. Kuy Mai appears to retain one of the proto-phonemes regularly, and three others sometimes. Kuy Ntua appears to have undergone regular change in six of the vowel correspondences, while regularly retaining one of the proto-phonemes.

Focusing our analysis on Kuy Ntra and Kuy Ntua, the more stable, consistent dialects, five potential changes in vowels (shown in the lower portion of Table 104) show similar processes, assuming the proposed proto-phonemes are valid. For Kuy Ntua there appear to be processes of monophthongization (*ia>/iː/, *ua>/uː/) and back vowel lowering (*uː>/oː/, */oː/>/ɔː/). For Kuy Ntra, there is one case of front vowel lowering (*eː>/ɛː/). The rules are more difficult to summarize for Kuy Mai and Kuy Mla, due to greater variation. Potentially, Kuy Mai shows monophthongization and back vowel lowering, and Kuy Mla shows front vowel lowering. Table 105 is a modification of Table 103, showing only the generalized rules and adding the three tentative vowel rules with gray shading.

Name of Rule	Speech varieties applying the respective rules			
	NTRA Rumchek	NTUA Prame	MAI Chranaol	MLA Krala Peas
Deletion			x	x
Weakening			x	x
Deletion			x	
Vowel diphthongization (2 cases)		x		
Vowel monophthongization (2 cases)		x	x	
Back vowel lowering (2 cases)		x	x?	
Front vowel lowering	x			x
NUMBER OF GENERAL RULES	1	3	5	3

Table 105. Tentative summary of rules, including

uncertain vowel changes

Including these tentative vowel rules, the total number of change rules is as follows: Ntra (1), Ntua (3), Mai (5) and Mla (3). This suggests that overall, Kuy Ntra is the most conservative dialect, Kuy Mai is the most innovative, and Kuy Ntua and Kuy Mla are in the middle. The total number of change rules is still relatively small, indicating that the Kuy dialects are very similar to one another.

In some lexical comparisons, it is possible to calculate similarity coefficients based on shared innovations to show relationships between varieties. J. Grimes (1995:74-5) states, "It is the shared innovations that are generally taken to show common development of varieties…where a rule applies to two or more varieties but does not apply to others." However, in the case of Kuy there are too few rules for this type of calculation to be applied, especially since some of the rules are tentative. According to Table 105, Kuy Ntua and Kuy Mai share two rules in common, Kuy Mai and Kuy Mla share two rules, and Kuy Ntra shares one rule with Kuy Mla. The other three pairs have no shared rules.

5.7 General discussion of Proto-Kuy

The phonology of Proto-Kuy of Cambodia does not vary greatly from the phonologies of the individual dialects presented in Chapter 4, since the dialects are all very closely related. This section will summarize the consonant and vowel inventories, syllable structure and phonotactics of Proto-Kuy as presented in this chapter. The consonant inventory of Proto-Kuy is shown in Table 106.

	Labial	Alveolar	Palatal	Velar	Glottal
Voiceless stop	*p	*t	*c	*k	*ʔ
Voiced stop	*b	*d			
Nasal	*m	*n	*ɲ	*ŋ	
Trill		*r			
Voiceless fricative		*s			*h
Approximant	*w		*j		
Voiced lateral approximant		*l			

Table 106. Proto-Kuy consonants

The consonant inventory is symmetrical and balanced. There is a full voiceless stop series and nasal series. The voiced stops (which are sometimes realized as

implosives) occur only in labial and alveolar position. The approximants, fricatives and trill are well distributed.

The Proto-Kuy vowels are given in Table 107.

	Short			Long			Diphthongs	
	Front	Central	Back	Front	Central	Back	Front	Back
Close	*i	*ɨ	*u	*iː	*ɨː	*uː	(*ia)	(*ua)
Close-mid	(*e)	*ə	*o	*eː	*əː	*oː		
Open-mid	*ɛ	(*ɐ)	*ɔ	*ɛː		*ɔː		
Open	*a		*ɑ	*aː		*ɑː		

Table 107. Proto-Kuy vowels

The vowel inventory is quite full, but symmetrical. Vowels are found in both long and short forms. The front and back diphthongs are tentatively proposed as proto-phonemes with supported from Proto-Katuic evidence. The open-mid central vowel is under question without further evidence. It is possible that the long open front vowel /aː/ is more central, filling the gap in the distribution of the phonemic inventory.

The syllable structure of Proto-Kuy is nearly identical to the current dialects. Words are monosyllabic or sesquisyllabic, consisting of an optional presyllable bound to a required main syllable. There are two types of presyllables. The structure of the more common presyllable, as reconstructed here, is $C_{P1}ə$-, where C_{P1} is the initial consonant of the presyllable and /ə/ is the mid central unrounded vowel. The Kuy daughter varieties also have the form $C_{P1}ə(C_{P2})$, with (C_{P2}) as the optional final consonant of the presyllable. However, there was insufficient data for reconstructing this fuller form here. A second presyllable type reconstructed for Proto-Kuy is a syllabic nasal Ṇ. The structure of the main syllable is $C_1(C_2)V(C_3)$, where C_1 is a initial consonant, and (C_2) is the second (optional) consonant in an initial cluster, limited to /l/ or /r/. The vowel can be a short vowel, long vowel or diphthong. (C_3) is an optional final consonant which may be any of the consonants except for the voiced stops /b/ and /d/ and the fricative /s/.

5.8 Summary

The reconstruction of consonants for Proto-Kuy is straightforward, where the only changes for single initial consonants are the final velar stop becoming a glottal stop in two dialects and deletion of final trill in one dialect. There is also some cluster simplification.

Presyllables show more variation among dialects. Presyllables were considered as a unit, and several basic forms were reconstructed. A full reconstruction of the more complex presyllable cognate sets is not attempted in this study, but further study may allow for the initials and finals of the presyllable to be reconstructed separately.

The vowels pose more of a challenge. Both short and long vowels are reconstructed, with long vowels being more common and having more clear evidence for reconstruction. There is uncertainty on the reconstruction of some short vowels.

A process of diphthongization is evident in Kuy Ntua for two long vowels, and other possible processes of monophthongization and vowel lowering are suggested. Change rules are not proposed for short vowels. An in-depth study of register and of Proto-Katuic correspondences would likely clarify some of the uncertainty in the vowels.

Of the four approaches chosen in this study for understanding the relationship between Kuy varieties in Cambodia, the first two, sociolinguistics and lexicostatistical comparison, have helped to identify four dialects. This chapter looked at the third approach, comparative phonological reconstruction. In general, the reconstruction shows that all four dialects are closely related, with few sound change rules. From more conservative to more innovative, the dialects follow in this order: Kuy Ntra, Kuy Ntua, Kuy Mla and Kuy Mai. The fourth approach of the thesis, comprehension testing between the viable dialects, is presented in Chapter 6.