

CHAM EVIDENCE FOR KHMER SOUND CHANGES

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1. INTRODUCTION

When a recipient language borrows, for whatever reason, a word from a donor language, that word in the recipient language ceases to undergo any historical changes which take place in the donor language. It becomes a kind of fossil and may tell us much about the phonology of the donor language at the time the borrowing took place. Consider the Modern German reflexes of Latin /k/ in the words *Kiste* ‘chest’ (from Latin *cista*) and *Zelle* ‘cell’ (from Latin *cella*). The word *Kiste* must have been borrowed earlier, before Latin /k/ underwent palatalisation before front vowels, and *Zelle* must have been borrowed later, after some degree of palatalisation had taken place giving German /ts/. Proto Mon-Khmer seems to have had at least two series of initial stops, one voiceless and the other voiced. Huffman (1976) suggests that there were five possible stages in the development of Mon-Khmer phonetic systems. These are: (1) voiceless: voiced distinction in initial stops; two-way distinction in initial continuants; as yet little or no vowel differentiation; (2) simultaneous change in the articulation of one set of initial consonants and development of allophonic variation in following vowels, still in complementary distribution vis-a-vis two distinctive sets of initials; (3) register becomes phonemic due to a complete merger at some point in the system, probably in the continuants, with retention of allophonic distinction in initials in complementary distribution vis-a-vis first and second register vowels; (4) complete merger of initial stops, with complete register dichotomy in the vowels; (5) loss of register contrast due to change in vowel position and diphthongisation. It is generally agreed that Khmer inherited a series of voiced stops from Proto Mon-Khmer /*a, *d, *j, *g/. Khmer retained these voiced stops until some time after AD 1500, when they became devoiced. It is difficult to put a precise date to any sound-change since changes are very gradual. Jenner (1976:694) believed that “This [devoicing] process appears to have reached its culmination between the sixteenth and the eighteenth centuries”. Lewitz (1967:387 ff.) believed that the devoicing took place between the sixteenth and seventeenth centuries and was complete by the eighteenth century. Lewitz based her argument on the way the name Angkor (Modern /ʔaŋkəʔ/, Middle Khmer /ʔəŋgəʔ/) was written by foreigners. Sixteenth century Spanish and Portuguese travellers wrote *Angar*, *Angor*, *Angon*, apparently indicating that the *g* was still voiced. On the other hand, seventeenth century visitors to Cambodia wrote it *Anckoor* and *Onco*. Vickery (1992:244–247) disagreed with Lewitz. He believed, based on his study of the Portuguese and Spanish renderings of Khmer words as recorded in Groslier (1958), that there was ample evidence from the Portuguese and Spanish records that devoicing had occurred by the last two decades of the sixteenth century. There was also some major restructuring of the Khmer vowel system at some point, probably after the devoicing of the

initial stops. An examination of the phonology of loan words from Khmer into Western Cham can illuminate some of the phonology of earlier stages of Khmer before the initial stops were devoiced.

2. HISTORICAL BACKGROUND

The Chams have been in contact with Khmer-speaking communities for at least 14 centuries. During this time there were numerous economic, military, and political contacts; certainly the languages interacted. The Chams were historically located in several enclaves¹ along the coast of present-day Vietnam between Cape Mui Ron in the north and Bien Hoa in the south, and the Khmers were located to their south and west. Briggs (1951:13) states that "The Chams seem to have held the Mekong from the mouth of the Khong at Stung Treng up to near the mouth of the Mun River until the coming of the Khmers". He believes that the Khmers either drove the Chams out of the area around the Mun River mouth or absorbed them. The Chams were under constant political and military pressure from first the Chinese and later the Vietnamese in the north, and from the Khmers in the south and west. Sometime after 1471, when Vijaya (Binh Dinh), the last major Cham enclave, fell to the Vietnamese, some of the Chams fled west into lands controlled by the Khmers and settled in small villages, often along the banks of major rivers, scattered throughout the country.² Today the descendants of these Chams are known as the Western Cham. A second group, the Eastern Cham, remained in their homeland around the cities of Phan Rang and Phan Thiet. At some point, probably by at least the tenth century AD (Maddieson and Pang 1993:75), a third group of Cham took to the sea and went north to Hainan Island, where they now form a minority known as Utsat. The languages of each of these groups have developed in different directions. Western Cham has become a register language. Utsat has become a tonal language and Eastern Cham is developing a tonal system. All of these phonetic changes in the three Cham dialects seem to have developed as a result of the devoicing of initial consonants.

The lack of indisputable borrowings from Khmer in Eastern Cham and Utsat suggests that there were no extensive borrowings from Khmer prior to the break-up of Champa despite the long period of contact. The situation with Western Cham is different; the current language is filled with borrowings from Khmer. The borrowed words are not limited to nouns and verbs, but also include some verbal and nominal auxiliaries. These borrowings appear to have been made over a long period of time and may be conveniently divided into two sets. The first set contains old borrowings made before Khmer devoiced its voiced bilabial, dental, palatal, and velar stops. The second set contains later borrowings after the devoicing. The first set is the subject of this paper.

The topic of loan words in Southeast Asian languages is a thorny one, and often it is difficult to determine the direction of the borrowing. For this study, forms from three dialects

¹ Higham (1989:297 ff.) and Taylor (1992:155) doubt the long-term existence of a single Cham political entity, noting that the Chams themselves recognised several polities centred on river-mouth urban centres. These included Indrapura, centred around Tra-Kieu, Vijaya, centred around Binh-Dinh, and Kauthāra, centred around Nha-Trang.

² Major Cham settlements in Cambodia were located around Battambang City, on the southern side of the Tonle Sap; around Kampot City, along the Tonle Sap River above and below Phnom Penh; and along the Mekong River above and below Kompong Cham City.

of Cham were compared.³ Obvious Indic loan words were discarded, as were obvious Mon-Khmer borrowings that appeared in all three dialects. If a word that seemed to be a borrowing from Khmer occurred in KGT Cham or WCD Cham but not in Eastern Cham, it was assumed that it was a borrowing that had taken place after the break-up of Champa, or roughly after AD 1500.

3. PHONOLOGY OF KHMER AND WESTERN CHAM

The phonologies of Khmer and Cham are very similar; they share many of the same sounds, as a comparison of the systems will show.

Three historical periods are recognised for Khmer.⁴ Old Khmer (OK) from about AD 600 to 1431, Middle Khmer (MK) from about AD 1431 to 1700, and Modern Khmer from about 1700 on. Old and Middle Khmer had the following phonemic inventory⁵:

TABLE I: OLD/MIDDLE KHMER

CONSONANTS:

Voiceless stops:	<i>p</i>		<i>t</i>		<i>c</i>	<i>k</i>	<i>ʔ</i>
Voiced stops:	<i>b</i>	<i>ʔb</i>	<i>d</i>	<i>ʔd</i>	<i>j</i>	<i>g</i>	
Nasals:	<i>m</i>		<i>n</i>		<i>ɲ</i>	<i>ŋ</i>	
Voiced liquids:			<i>r</i>	<i>l</i>			
Voiceless spirants:			<i>s</i>				<i>h</i>
Semivowels:	<i>w</i>		<i>y</i>				

VOWELS:

<i>i</i>	<i>ii</i>	<i>ɨ</i>	<i>ɨ̃</i>	<i>u</i>	<i>uu</i>
<i>e</i>	<i>ee</i>	<i>ə</i>	<i>ə̃</i>	<i>o</i>	<i>oo</i>
<i>ɛ</i>	<i>ɛɛ</i>				
		<i>a</i>	<i>aa</i>	<i>ɔ</i>	<i>ɔɔ</i>

DIPHTHONGS:

<i>iə</i>	<i>iiə</i>
<i>ɨə</i>	<i>ɨ̃ə</i>
<i>uə</i>	<i>uuə</i>

After considerable restructuring, Modern Standard Khmer has emerged with the following inventory of phonemes:

³ These are the Western Cham dialects of Kompong Thom Cham (KGT), spoken in southern Kompong Thom Province about 50 miles north of Phnom Penh; Chau Doc Cham (CHD), spoken around Chau Doc in Vietnam and in neighbouring Cambodia south of Phnom Penh; and Eastern Cham, spoken between Phan Rang and Phan Thiet in south central Vietnam.

⁴ Diffloth (1992:271–272); for a somewhat different dating of the three periods, see Jenner (1969:3), which is based on Jacob Ferlus (1992) divides the language of the Khmer inscriptions into Pre-Angkorian Old Khmer seventh and eighth centuries, Angkorian Old Khmer ninth–thirteenth centuries, and Middle Khmer fourteenth–eighteenth centuries.

⁵ Based on Jenner and Pou (1980–81:xviii–xix).

TABLE 2: MODERN STANDARD KHMER

<i>p</i>	<i>t</i>	<i>c</i>	<i>k</i>	<i>ʔ</i>	
<i>b</i>	<i>d</i>				
(<i>f</i>) ⁶	<i>s</i>			<i>h</i>	
<i>v</i>	(<i>z</i>)	(<i>ʒ</i>)			
		<i>y</i>			
<i>m</i>	<i>n</i>	<i>ɲ</i>	<i>ŋ</i>		
	<i>r</i>				
	<i>l</i>				
<i>i</i>	<i>ii</i>	<i>ɨ</i>	<i>ɨ̄</i>	<i>u</i>	<i>uu</i>
<i>e</i>	<i>ei</i> [e ^h]	<i>ə</i>	<i>əə</i>	<i>o</i>	<i>ou</i> [o ^h]
	<i>ee</i> [e ^v]				<i>oo</i> [o ^v]
	<i>εε</i>			<i>ɔ</i>	<i>ɔɔ</i>
<i>a</i>	<i>aa</i>			<i>a</i>	<i>aa</i>
<i>ie</i>	<i>ae</i>	<i>ao</i>	<i>aə</i>	<i>ea</i>	<i>iə</i>
				<i>uə</i>	<i>oa</i>
					<i>wə</i>

In some dialects there is a suprasegmental phoneme of register that is manifest by tense, clear, open, higher pitch vowels in syllables following originally voiceless consonants (= high register) and lax, breathy, close, lower pitch vowels in syllables following originally voiced consonants (= low register). Some of the vowel changes that took place after the devoicing of originally voiced stops are given below:

TABLE 3: KHMER VOWEL CHANGES

Original vowel nucleus	High register	Low register
<i>a'</i>	<i>u/wə</i>	<i>a</i>
<i>a</i>	<i>ɔɔ</i>	<i>aa</i>
<i>ā'</i>	<i>ea/oa</i>	<i>a</i>
<i>ā</i>	<i>ie</i>	<i>aa</i>
<i>i</i>	<i>ɨ</i>	<i>ə</i>
<i>ī</i>	<i>ii</i>	<i>əy</i>
<i>ɨ</i>	<i>ɨ</i>	<i>ə</i>
<i>ī</i>	<i>ɨ̄</i>	<i>əɨ</i>
<i>u</i>	<i>u</i>	<i>o</i>
<i>ū</i>	<i>uu</i>	<i>oo</i>
<i>œ</i>	<i>əə</i>	<i>aə</i>
<i>e</i>	<i>ei</i>	<i>ee</i>
<i>ē</i>	<i>εε</i>	<i>ae</i>
<i>o</i>	<i>ou</i>	<i>aə</i>

Old/Middle Cham had a system nearly identical to Old/Middle Khmer with the probable addition of /ʔj/, a preglottalised /j/. A provisional list of Old Cham phonemes is given below.

⁶ The phonemes in parentheses occur only in borrowed words.

TABLE 4: OLD/MIDDLE CHAM

CONSONANTS:							
Voiceless stops:	<i>p</i>		<i>t</i>		<i>c</i>		<i>k</i> (?)
Voiced stops:	<i>b</i>	<i>ʔb</i>	<i>d</i>	<i>ʔd</i>	<i>j</i>	<i>ʔj</i>	<i>g</i>
Nasals:	<i>m</i>		<i>n</i>		<i>ñ</i>		<i>ŋ</i>
Voiced liquids:			<i>r</i>	<i>l</i>			
Voiceless spirants:			<i>s</i>				<i>h</i>
Semivowels:	<i>w</i>		<i>y</i>				
VOWELS:							
	<i>i</i>	<i>ii</i>				<i>u</i>	<i>uu</i>
	<i>e</i>	<i>ee</i>	<i>ə</i>	<i>əə</i>		<i>o</i>	<i>oo</i>
	<i>ɛ</i>	<i>ɛɛ</i>		<i>a</i>	<i>aa</i>	<i>ɔ</i>	<i>ɔɔ</i>
DIPHTHONGS:							
	<i>iə</i>	<i>iiə</i>					
	<i>uə</i>	<i>uuə</i>					
	<i>ao</i>						

Both phonetic systems, Old/Middle Khmer and Old Cham, underwent some radical changes on their way to the modern languages. Among many other changes, both have devoiced their voiced stops. In Khmer this devoicing resulted in the formation of some new vowel nuclei as presented above. In Western Cham it resulted in the development of a register system. High register (or second register) vowel nuclei in modern Western Cham are those which follow originally voiced stops; they generally have a lower pitch than those which follow originally voiceless stops, are higher in tongue height, and have a ‘breathy’ quality. Low register (or first register) vowel nuclei are those which follow originally voiceless stops; they have a higher pitch, are lower in tongue height, and sound ‘clearer’ or ‘sharper’ than the nuclei following originally voiced stops; they may also have a lower onglide.

TABLE 5: MODERN WESTERN CHAM

CONSONANTS:							
Voiceless stops:	<i>p</i>		<i>t</i>		<i>c</i>		<i>k</i> ʔ
Voiced stops:	<i>ʔb</i>		<i>ʔd</i>		<i>ʔj</i>		
Nasals:	<i>m</i>		<i>n</i>		<i>ñ</i>		<i>ŋ</i>
Voiced liquids:			<i>l</i>				<i>r</i>
Voiceless spirants:			<i>s</i>				<i>h</i>
Semivowels:	<i>w</i>				<i>y</i>		
VOWELS:							
	<i>i</i>	<i>ii</i>	<i>ɨ</i>	<i>ɨ̃</i>		<i>u</i>	<i>uu</i>
	<i>e</i>						
			<i>ə</i>	<i>əə</i>		<i>o</i>	<i>oo</i>
	<i>ɛ</i>	<i>ɛɛ</i>		<i>a</i>	<i>aa</i>	<i>ɔ</i>	<i>ɔɔ</i>

Additional to these are the glides /ia, iə, ea, au, ua, oa/ and a suprasegmental phoneme of register. The first (or low) register is unmarked while the second (or high) register is indicated in this paper by underlining.

4. WESTERN CHAM BORROWINGS

The dialects of Western Cham contain a significant number of apparent loan words from Khmer. Many of these words, for example CHD Cham *gre* 'bed' and KGT Cham *smôk* ~ *grôk* 'be dirty' are probably recent borrowings. Other words are borrowings from Indic sources which may or may not have been through Khmer as an intermediary, for example CHD and KGT Cham *bhik* 'Buddhist monk'.⁷ A third group of words may be very ancient borrowings from some Austroasiatic source or may be from a common protoform, if indeed there is a genetic relationship between Austroasiatic and Austronesian. Examples of words in this category include KGT Cham *bhay* 'otter', KGT and CHD Cham *pabe* 'goat', and KGT and CHD Cham *gǎr* 'drum'. A fourth group of borrowings are those that are very early borrowings from Khmer made before the devoicing of the Khmer initial stops. This group will be discussed below.

Khmer *b = Cham *b

- buta* /put/ 'falseness' KGT *būt* [pūt]⁸
trabamnga /trapeaŋ/ 'pond' KGT *tabǎng* [tapəŋ]
lbā'ka /lpeak/ 'kind of rattan' KGT *labǎc* [lapək]
brama /prɔɔm/ 'agree' KGT *brom* [prɔ:m]

Khmer *d = Cham *d

- dā'ta* /toat/ 'kick' KGT *dēt* [tɛt]⁹
dā'la /toal/ 'be stumped' KGT *děl* [tɛl]
dā'na /toan/ 'on time' KGT *děn* [tɛn]
dā'ka /teak/ 'trap' KGT and CHD *dǎk* [tək]

⁷ Other words of this type are CHD *bual* 'army', KGT *bəl* 'time', KGT and CHD *bet* 'medicine', KGT *duih* 'fault', and KGT and CHD *dop* 'army'.

⁸ Khmer forms are given first in a transliteration used by Jenner and Pou (1980–81) and based on the traditional Anglo-American system for romanising the devanagari writing system and then in a modern phonemic version enclosed in slants; the Western Cham forms are given first in a phonemic form followed by a phonetic form in square brackets.

⁹ Old Khmer *ā' became /ɛ/ before final dentals in Western Cham. Since the phoneme /ɛ/ is rare in Modern Cham, could this mean that there was already some allophonic change in the Khmer vowel *ā' /C _____C when the borrowing took place?

[+voice]	[+cor]
[-son]	[+ant]
	[-cont]

dāhāna /tiehien/ ‘soldier’ KGT and CHD *dahan* [təhɑ:n]¹⁰

dram /troam/ ‘endure’ KGT *dröm* [trɔ̃m]

drunga /truŋ/ ‘cage’ KGT and CHD *drüŋ* [trʊŋ]

Khmer *j = Cham *j

jāla /ciel/ ‘kind of basket’ KGT and CHD *jal* [jɑ:l] ‘cast net’

jamnwsa /cumnuəh/ ‘substitute’ KGT *jamnuaih* [jamnuaih] or [jumnuaih]

jhnah /cneah/ ‘win’ KGT *januh* [caniɰh] CHD *chanuh* [caniɰh]¹¹

pañjūna /bañcu:n/ ‘send’ KGT *pajun* [pacu:n]

jam /coam/ ‘bruised’ KGT *jöm* [cɔ̃m]

jhli /cli:/ ‘rub’ KGT *jali* [jəli:]

jrula /crul/ ‘exceed’ KGT *jrül* [crʊl]

jra'ka /crwək/ ‘pickle’ KGT *jröc* [crɔ̃k]

Khmer *g = Cham *g

ga'la /kwəl/ ‘stump’ KGT and CHD *göl* [kɔ̃l] ‘trunk/stump’

gara /kɔ:/ ‘kapok’ CHD *go* [kɔ:]

guka /kuk/ ‘jail’ KGT and CHD *gūc* [kuk]

gā'ta /koat/ ‘he, she’ KGT and CHD *gēt* [kət]

greca /krɪc/ ‘sprain’ KGT *grëik* [kəɾɛik] or *garëk* [kəɾɛk]

grā'na /kroan/ ‘enough’ KGT *gën* [kɛn]

gum /kum/ ‘grudge’ KGT *gūm* [kum]

Crucial to the argument put forth in this paper is the assumption that, when a language borrows a word, some attempt will be made to reproduce the pronunciation of the donor language as accurately as possible. In this way the pronunciation of the word at the time it was borrowed will be preserved or fossilised in the borrowing language. For example, if Western Cham borrowed the word for ‘field’ as *val* /va:l/ from Khmer, it was probably, at the time of borrowing, pronounced very much like /va:l/ by the Khmers. The evidence above suggests that Western Cham borrowed a large number of words from Khmer before the devoicing of the initial stops. It also suggests that the restructuring of the Khmer vowel

¹⁰ Jenner and Pou (1980–81:389) derive Khmer (KH) /tiehien/ from the MK base *hānā*. Eastern Cham apparently does not have this word, but it occurs in Rade and Jarai as *than* and *tōhan* respectively.

¹¹ The /i/ in Western Cham is usually a reflex of Proto Chamic (PC) *ā; in this word it may be due to the preceding nasal.

system took place after the devoicing. If the diphthongisation of the Khmer \bar{a} had taken place before the borrowing and therefore before the devoicing, we would expect the Western Cham form to be something like **veal*. There is additional evidence from other Western Cham borrowings from Khmer that the borrowing was made before the restructuring of the Khmer vowel system, for example *tanot* /tano:t/ 'sugar palm' (KH *tnota* /t \bar{n} o:t/), *kamot* /kam \bar{o} :t/ 'ghost' (KH *khmoca* /k \bar{m} o:c/), *ran* /ra:n/ 'platform' (KH *rāna* /ri \bar{n} /), *tə* /tə:/ 'only' (KH *te* /t \bar{e} /), *kīn* /kin/ 'to mill rice' (KH *kina* /k \bar{a} n/), *yam* /ya:m/ 'to patrol' (KH *yāma* /yi \bar{e} m/). In later borrowings from Khmer by Western Cham, the vowel modifications which took place in Khmer after the devoicing of the initial stops are reflected, for example *jeang* /c \bar{e} aŋ/ 'more than' (KH *jānga* /ci \bar{e} ŋ/), *bēl wēlea* /p \bar{e} :l v \bar{e} :lea/ 'time' (ultimately from an Indic source through KH *bēla v \bar{e} lā* /p \bar{e} :l v \bar{e} :lie/).¹²

5. CONCLUSIONS

Based on the study of a corpus of Western Cham borrowings from Middle Khmer, it appears that at the time these borrowings were made Middle Khmer still had voiced initial stops. This stage probably equates with Huffman's Stage 1. Western Cham borrowed these words with the voiced stops intact. These then joined native initial voiced stops in their regular historic development in Cham. That the Khmer vowel nuclei following the original voiced stops were maintained in the Western Cham borrowings with little or no change suggests that the restructuring of the Khmer vowel system had not yet begun. It is very difficult to determine the date these borrowings were made, but, based on their absence in Eastern Cham, it is believed that the bulk of the borrowings took place after the break-up of Champa in the mid-late fifteenth century AD and the separation of Western and Eastern Cham. If this is an accurate date, then Standard Khmer passed through Huffman's five stages in less than 400 years.

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¹² The diphthong /ea/ in recent Western Cham borrowings is a reflex of original Khmer \bar{a} following a voiced consonant and is clearly distinct from the diphthong /iə/, which reflects original *ia*; for example *phian* [p \bar{h} iən] 'opium' (ultimately from Chinese through KH *phiana* /p \bar{h} iə \bar{n} /), *chakial* [cəkiəl] 'to scrape' (KH *chkiala* /c \bar{k} iəl/).

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