

PROTO-KATUIC PHONOLOGY AND THE SUB-GROUPING OF MON-KHMER LANGUAGES¹

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Summary

The Katuic languages are a branch of the Mon-Khmer (MK) family spoken by more than one million people living in Thailand, Cambodia, Laos and Vietnam. While the majority of Katuic speakers live in eastern Thailand and Cambodia, the greatest diversity of Katuic languages lies in the Salavan and Sekong provinces of Laos and adjacent border areas of Vietnam, part of a complex patchwork of small ethnic communities. From a comparative-historical point of view Katuic has particular importance, as between them the languages appear to have conserved some very ancient phonological and lexical features. At the same time some Katuic languages have been remarkably innovative and developed some of the richest vowel systems in the world. The recent advances in the reconstruction of Proto Katuic (Sidwell 2005) potentially allow us to investigate the sub-grouping of Katuic within Mon-Khmer on the basis of comparative phonology. However, the results are somewhat ambiguous, and do not support any special sub-grouping of Katuic within Mon-Khmer.

Classification of Katuic with the Mon-Khmer family

During the first major phase of comparative-historical work on the MK languages, which lasted into the 1960s (effectively beginning with the work of Schmidt (1901, 1904, 1905 etc.) until Pinnow (1959) and Shafer (1952, 1965)), there was no coherent account of the real extent and internal structure of the Mon-Khmer family.

Thomas and Headley (1970) established a new paradigm when they successfully applied lexicostatistics to the emerging body of new field data, distinguishing nine branches: *Pearic*, *Khmer*, *Bahnaric*, *Katuic*, *Khmuic*, *Monic*, *Palaungic*, *Khasi* and *Viet-Muong*. Adding *Aslian* and *Nicobarese* (not examined by Thomas and Headley although already long recognised as MK), Diffloth's (1974) expanded listing became the received classification². The Munda languages of India are also generally recognised as related to MK, although opinion is divided over how close that relationship is. All together they are recognised as forming the Austroasiatic phylum, but in this paper I am only concerned with analysis up to the MK level.

¹ I would like to thank Mark Alves for valuable advice and comment on this paper, in addition to his ongoing cooperation and encouragement in respect of my broader Mon-Khmer research activities. This paper was also made possible by assistance from the Department of Linguistics of the Max Planck Institute (Leipzig) in the form of stipend support during 2005.

² Since the 1980s some minor languages of China have come to light that may or may not constitute a new branch.

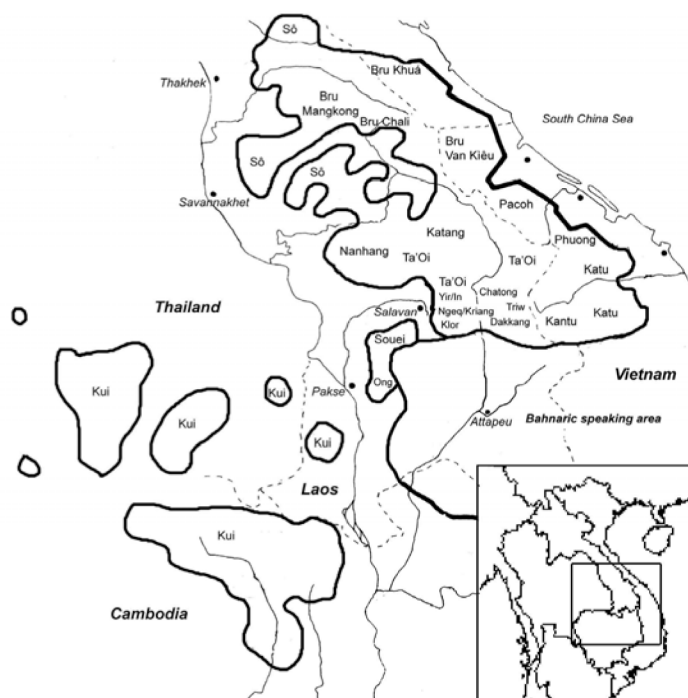


Figure 1: Map showing approximate locations of Katuic languages

There is no yet general agreement among specialists concerning how the MK branches further sub-group with each other. Peiros (1998) also applying lexicostistics, identified five coordinate MK groups (plus Munda):

1. Central (Bahnaric, Katuic, Aslian, Monic)
2. Vietic
3. Northern (Palaung-Wa, Khmuic)
4. Khmer
5. Khasi
6. Munda

Figure 2: Austroasiatic classification of Peiros (1998)

In contrast Diffloth has developed a model, based largely on identifying lexical innovations (lexicostistics counts only retentions, at least as practiced by Peiros), that distinguishes only three coordinate MK groups (plus Munda), which in their most recent incarnation (2005) are designated “Khasi-Khamuic”, “Khmero-Vietic” and “Nico-Monic” (see Figure 2).

One notes that the placement of Katuic is radically different in each the above schema: Peiros grouping it with Bahnaric, Aslian & Monic, while Diffloth sub-groups it with Vietic (*Viet-Muong*). Alves (this volume) also cites lexical evidence in favour of Diffloth’s hypothesis. However, it is striking that two different lexical approaches, one based upon identifying retentions (Peiros) and the other innovations (Diffloth) reach such contrary results. In these circumstances a fresh approach is called for. I have recently completed a comprehensive phonological reconstruction of Proto-Katuic

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(Sidwell 2005), and a preliminary phonological reconstruction of Proto-Mon-Khmer is also available (Shorto f.c.), so an attempt at a classification based upon historical phonology is possible. Diffloth (1991) did invoke some phonological data in respect of the claim of Vieto-Katuic subgrouping, so this will be discussed first before moving on to presenting my historical-phonological analysis.

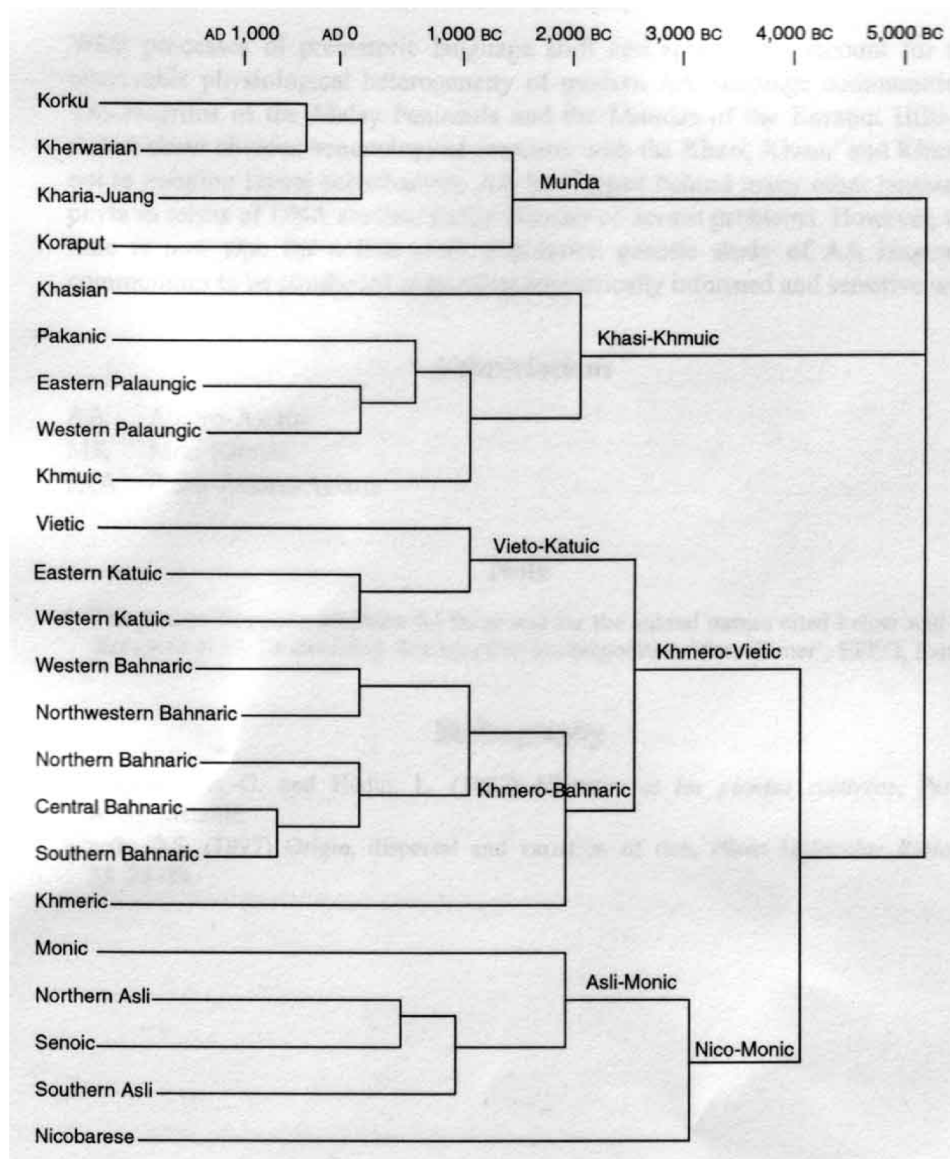


Figure 2: *Sub-grouping of Mon-Khmer (and Austroasiatic) languages according to Diffloth (2005)*

Diffloth’s Vieto-Katuic hypothesis

Diffloth (1991) proposes that in some cases, conditioned by unknown factors, prevocalic *ʔ became *h in Proto-Vieto-Katuic, and subsequently *s in Vietic. The changes are attested in a small number of well distributed MK etyma, e.g.:

Khmer	Katuic	Vietic
<i>chʔɤŋ</i> ‘bone’	Katu <i>ŋhaaŋ</i>	Ruc <i>saŋ</i> , Viet. <i>xuong</i>
<i>kʔaep</i> ‘centipede’	Katu <i>kahip</i>	Maleng <i>kasiip</i>

It is argued that phonetically it is more likely for Vietic *s to have come from a Proto-Katuic-Vietic *h, rather than independently from PEMK *ʔ. However, the potential counter-examples to this rule outnumber the examples, e.g. there was no such change in etyma such as PK *kaʔaaʔ ‘crow’, *ʔŋʔuur ‘wasp’, *sʔaap ‘yawn’, *ʔuus ‘fire, firewood’ and others which have solid MK etymologies. In the absence of a motivated phonetic change it is very difficult to explain this h:s correspondence. My own hypothesis is that it resulted from some cluster reduction, but in what language and at what stage? The very limited lexical attestations of the change may rather indicate that the affected words were borrowed, perhaps a case of dialect mixing or a language shift. Borrowings from one or more related language can create small odd clusters of correspondences that stand out as in this case. On balance I suggest that this h:s correspondence is simply too ambiguous in its significance to base a classification upon it, and instead I suggest that the strongest weight should be placed upon clearly motivated systemic changes. This requires a well developed model of the historical phonology.

The Proto-Katuic consonants and PMK

The comparative phonological reconstruction of Proto Katuic (Sidwell 2005) reveals a mostly conservative system. The proto-consonant inventory is equivalent to what Shorto (f.c.) posits for PMK, with the addition that a palatal implosive is indicated, which I provisionally reconstruct to PMK—it appears that Shorto did not have extensive Katuic sources and missed the distinction.

*p	*t	*c	*k	*ʔ
*b	*d	*ɟ	*g	
*ɓ	*ɗ	*f		
*m	*n	*ɲ	*ŋ	
*w	*r *l	*j		
	*s			*h

Table 2: *Proto Katuic consonant inventory*

The major changes in the consonant system that occurred as PMK split into separate branches of two types: 1) reorganisation of the system of oral stops, and 2) lenitions/mergers of palatals and fricatives. The sonorants appear to have been much more stable, and are therefore less useful for discussion of sub-grouping.

It is significant that Katuic retains the PMK three stop series intact—in fact it survives unaltered in various Katu dialects, but is reduced to two series by the merger of plain voiced and voiceless stops in the rest of Katuic. Outside of Katuic the old three series distinction is maintained in Bahnar, and in the orthography of Old Mon (see Shorto 1971 *Introduction* for discussion). In most MK languages it has reduced to two

series: the merger of plain voiced and voiceless stops that occurred in Most of Katuic is also typical of Northern MK and Vietic, while merger of the plain voiced and implosive stops into a single voiced series occurred in Aslian and most of Bahnaric. However, the fate of the three stop series in Vietic is somewhat problematic. While it is clear that there was a devoicing of proto plain voiced stops in Vietic, leading to a register split (and ultimately the Vietnamese tones) it is not straightforward to reconstruct the voicing contrast to the Proto Vietic level. Strict application of the comparative method forces one to reconstruct a small number of exceptions with voiced initials, leading Ferlus (1998) to suggest that Vietic formed by the mixing of two MK dialects, one of which had already undergone a devoicing (perhaps a Northern MK language)—but I shall ignore such exceptions for now and concentrate on the most solidly regular phonological correspondences.

In various languages PMK palatal stops (*c and even secondarily devoiced *j) have merged with the reflexes of *s. Also there have been various mergers of *s and *h. Depending upon the sequence the above changes, sub-groups differ in their correspondence patterns among these segments, even though they may have a full set of palatals and fricative corresponding superficially to the PMK inventory.

Therefore, we can potentially gain some insight into the way PMK broke up by looking at the patterning of correspondences among the initial stops and fricatives in CVC words. The apparently regular correspondences and reconstructed PMK values are summarised as follows³:

PMK	Old Mon	Aslian: Semai	Car (Nicobar)	Pearic: Kasong	OKhmer	Bahnar	Proto-Katuic	Ruc/Viet. Khmu: Uu	Palaung /Riang	Khasi
*p	p	p	f	ph	p	p	*p	p/ɓ	p	p/p ph~p
*ɓ	ɓ	b	p	p	b	ɓ	*ɓ	b/m	b	b/b b
*b	b	b	p	p	b	b	*b	p/ɓ	b	b/p p
*t	t	t	t	th	t	t	*t	t/d'	t	t/t th~t
*d'	d'	d	r	t	d	d'	*d'	d/n	d	d/d d
*d	d	d	t	t	d	d	*d	t/d'	d	d/t t
*c	c	c	s	ch	c	s	*c	c/c	s	s/s s
*f	f	f	(?)	c	f	f	*f	c/c	f	f/c f
*j	j	j	c	s	j	j~c	*j	c/c	(?)	j/c (?)
*s	s	s	s	s	s	s	*s	s/th	h	h/h ʃ
*k	k	k	k	kh	k	k	*k	k/k	k	k/k kh~k
*g	g	g	k	k	g	g	*g	k/k	g	g/k k
*h	h	h	h	h	h	h	*h	h/h	h	h/h h
*ʔ	ʔ	ʔ	ʔ	ʔ	ʔ	ʔ	ʔ	ʔ/ʔ	ʔ	ʔ/ʔ ʔ

Table 3: *Correspondences of MK initial stops*

First of all some remarks about my reconstruction of the PMK *f/*j distinction—this is based upon my reconstruction of the same in Proto-Katuic, a

³ The table is based upon the equivalent in Shorto (f.c.), modified to account for subsequent advances in reconstruction, e.g. Shorto, writing in the 1970s, had no access to adequate Vietic or Katuic reconstructions.

tendency in Bahnar to devoice reflexes of *ɟ but not *f, and the failure of *f to merge with /s/ in Pearic (although the latter is based upon on a couple of examples, and the Pear consonants otherwise pattern differently to Katuic and Bahnaric).

If we group the branches according to their developments in the stops and fricatives the closest matches with Katuic are Bahnaric and Monic, particularly in respect of the retention of imploded stops. We also note that while Bahnar has /s/ from *c, this is a Central Bahnaric innovation and Proto-Bahnaric *c is indicated. Vietic, suggested by Diffloth (2005) and Alves (this volume) as sub-grouping with Katuic, is not excluded—it is evident that there was a general devoicing of stops in (or before) Proto-Vietic, and a retention of the imploded stops as plain voiced stops, and reversing these changes reveals a system directly corresponding to Old Mon.

However, the retention of the imploded series may not be a good indicator of sub-grouping. It is apparent that the loss of implosion and consequent merger with other series has occurred independently at time in MK. For example, within Bahnaric it is only (apparently) Bahnar that retains the etymological imploded series, while others have merged them with the voiced stops. The northern languages (Khasi, Palaungic, Khmuic) pattern neatly in respect of the palatals and fricatives (confirming this sub-grouping as suggested by both Diffloth 1974 and Ferlus 1974), and while most of the languages lost contrastive implosion, distinct reflexes of the imploded series remain in, for example, Khasi and the Riang stops, indicating that the PMK consonantism survived intact into Proto-Northern-Mon-Khmer (after the northern lenition of palatals began).

It is also clear that various devoicings of stops occurred independently. Generally devoicing of stops in MK is an areal trend shared with the intrusive Tai languages, while those located out of contact (such as Aslian), or attested before Tai contact (Old Khmer, Old Mon) do not show it. We are therefore left with no apparent evidence among the stop correspondences for distinguishing any sub-grouping among the non-northern languages.

The Proto-Katuic vowels and PMK

The comparative phonological reconstruction of Proto Katuic (Sidwell 2005) reveals a conservative system that most likely lacked tones or voice quality distinctions. I reconstruct the Proto Katuic vowel inventory as follows:

*i	*ɨ	*u	*ii	*iɨ	*uu	*ie	*iə	*uo
*e	*ɛ	*o	*ee	*eɛ	*oo	*ia	*ia	*ua
*ɛ	*a	*ɔ	*ɛɛ	*aa	*ɔɔ			

Table 4: *Proto Katuic vowel inventory*

The reconstruction of PMK vowels is more problematic. Shorto (1975, ms.) suggested the following based upon the set of regular correspondences between Mon and Khmer:

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<i>*i</i>		<i>*u</i>		<i>*ii</i>		<i>*uu</i>		<i>*iə</i>	<i>*ai</i>	<i>*uə</i>
<i>*e</i>	<i>*ə</i>	<i>*o</i>		<i>*ee</i>	<i>*əə</i>	<i>*oo</i>				
	<i>*a</i>	<i>*ɔ</i>		<i>*aa</i>	<i>*ɔɔ</i>					

Table 5: *Shorto's Proto Mon-Khmer vowel inventory*

At this time I am not able to present a comprehensive tabulation of MK vowels as I have done for the consonants above—even Shorto (f.c.) does not attempt it, instead basing his vocalic reconstruction upon Old Mon and Khmer (see Shorto 1976 for discussion). In the discussion that follows I will simply try to demonstrate that underlyingly Proto-Katuic vocalism is readily derived from PMK. The innovations I have reconstructed are not evident in any other MK branch, although further research may well reveal more relevant facts.

Shorto's PMK **ai* alternates occasionally with **aa*, so I suspect that it reflects a special development of **aa*—it is not discussed further here. PK **ia* and **ua* often reflect Shorto's PMK **iə* and **uə* although this is not always the case (the picture is complicated by the fact that some of Shorto's **iə* and **uə* reconstructions are underdetermined and may actually reflect PMK **ii* and **uu* or some perhaps even diphthonged PMK **εε* and **ɔɔ*). The lack of **εε* or **ε* in Shorto's reconstruction is not definitive—front vowels are less frequent than central or back vowels in MK (and some other SEA families) and the shortage of examples makes it difficult to demonstrate a mid versus low front vowel contrast at the PMK level.

Given the above considerations, it appears that PK or its immediate ancestor innovated the diphthongs **ie*, **uo*, **iə*, **ia* and the monophthong **ii*. Comparison between PK forms with these vowels and their wider MK cognates may shed light on this question.

The PK diphthongs **ie*, **uo* were specifically reconstructed to account for correspondences that were identical to **ii* and **uu* except that the reflexes in Pacoh are tense vowels [ɔo] and [εe] instead of the regular reflexes of **ii* and **uu*. It may also be that my PK **ie*, **uo* are artifacts, and that there was a conditioned split in Pacoh, but I doubt this as there is no indication that the Pacoh registers arose with a general split in the vowel system (vis. Khmer) but rather a vowel shift (vis. North Bahnaric).

Below are comparisons between relevant PK forms with these diphthongs and MK etymologies extracted from Shorto f.c. Note that for brevity I have not included semantic values for the various MK daughter reflexes.

Examples of PK **uo* and **ie* with MK etymologies/reconstructions:

PK **muoj* 'one'

Sh. PMK 1495. *muuj*, *muəj* 'one'

Cf. Khmer *muuj*, Chrau *muəj*, Khmu *mooj*

PK 1292 **puol* 'prophesise'

Sh. PMK 1753. **pul*, **puul*, **puəl* 'to divine, take an augury'

Cf. Khmer *pool*, Chrau *pɔəl*, Viet. *bói*, [Chamic: Roglai *pual*]

PK 1294. *ʔasuom ‘shrimp’

Sh. PMK 1419a. *sum, *suum ‘shrimp, prawn’

Cf. Viet. tôm

PK 1299. *huor, *hool ‘singe with flame’

Sh. PMK 1685. *hur ‘to expose to heat’

Cf. Stieng, Srê, Bahnar *huur

Sh. PMK 1812. *[r]huul, *[r]hə[]l ‘to grill’

Cf. Biat Stieng nhool, Golar Bahnar həhəəl, Khmer rool

PK 765. *ʔieh , *fieh ‘sew’

PMK 1897. *[]jiis, *[]jiəs, *[]jəs ‘prick’

Cf. Car Nicobar iciih-[hətə], L Mon jeh, Bahnar jah, Khmer jas, Semang cəs

PK 767. *cieh ‘cut open’

PMK 1982. *cih, *ciəh ‘to split’

Cf. Lawa saih, Palaung səh, Viet. chẻ, Bahnar ceh

PK 779. *ʔariew ‘bell’

PMK 1870. *krhiəw ‘small bell, jingle’

Cf. Mon hərea, Khasi [sha]kuhiaw

The results of these comparisons are mixed, and perhaps say as much about the limitations of Shorto’s vowel reconstruction. In many cases MK reflexes do not allow one to distinguish clearly between a monophthong or a diphthong in PMK, hence Shorto offers variant reconstructions that he called “alternances” e.g. *uu ~ *uə, *ii ~ *iə. Underlying these is a hypothesis (see Shorto 1976) that the “alternances” existed in the proto-languages (perhaps expressing derivational or other functions). Unfortunately there is no clear patterning between Katuic and Shorto’s PMK vocalism that allows us to distinguish a deeper origin for PK *uo, *ie—and I suspect that they are basically Katuic internal innovations resulting from diphthongisation of high vowels.

More interesting are PK diphthongs *iə, *ia and *ii—where it appears that wider comparisons are able to shed some light on the matter.

Generally speaking, it appears on my reading of the data that Shorto was correct in not reconstructing PMK high central vowels—where they do occur in MK languages it is apparent that they are secondary, arising from diphthonging and/or raising of low and/or mid-vowels, and less frequently from centering of high vowels.

The raising of low central vowels is very common in MK, and may occur several times in the history of a given language (or sub-group)—and this is particularly evident in the case of Katuic.

I found that for Katuic there are many comparisons that unambiguously indicate *ii and *i—the modern reflexes show few conditioned changes so I would not expect any dispute about these. External comparisons generally suggest that they reflect raised allophones of PMK *əə and *ə. By contrast the reconstruction of PK *iə and *ia are less straightforward, and a summary of the supporting correspondences follows:

PK	Kui	Bru	Ta'Oi	Kriang	Katu	Pacoh	
*iə	-	ua~ɔa	ia	ia	ia	oo	/_m
	-	ia~ɔa	ee	ii	ia	oo	/_r
*ia	ii/ᵛia	ia/ᵛia	ii	ii~ee	ii~ia	ia	/_Ø
	ii	ia/ᵛia	ii	ᵛi	ii	ia~ea	/_ʔ
	-	-	-	ia	ia	ia	/_c
	ii	ia/ᵛia	ii	ᵛi	ia	ia	/_h
	-	ia/ᵛia	ii	iə~əə	-	ea ~ia	/_s

Table 6: *Correspondences supporting PK *iə and *ia*

As can be seen in the above table, the distinction between ***iə** and ***ia** is based upon contrasting reflexes in Pacoh, and (like ***uo**, ***ie**) could be disputed, but that is not the important point here because I am arguing that in any case ***iə** and ***ia**, whether they are one or two phonemes in PK, are ultimately secondary, and derived from PMK ***aa**. In some case the raising is very old, in other cases it is more recent. The latter is seen in the reconstruction of PK ***aa/*ia** and ***aa/*iə** doublets. All examples of ***aa/*iə** go back to unambiguous PMK ***aa.**, while the one case of ***aa/*iə** occurs in a Katuic lexical innovation ('husband'). E.g.:

PK 88. *kajaal, *kajial 'wind'

PMK 1782. *kjaal 'wind'

PK 38. *ksaac, *siac 'scoop/splash (water)'

PMK 872. *sac, *saac 'to bale out'

PK 85. *ʔᵛhaal, *ʔᵛhial 'light weight'

PMK 1801. *saal 'light weight'

PK 78. *kajaak, *kajiəl 'husband'

Additionally there are etyma with solid MK etymologies that support the reconstruction of PK ***iə** and ***ia**, suggesting a much earlier raising. E.g.:

PK 481. *ʔatiəm, *ʔatəm 'right side'

PMK 1353. *st₁am, *st₁uum 'right-hand'

PK 482. *diəŋ 'stretch'

PMK 544a. *taəŋ 'to extend, stretch'

PK 484. *d̥iəs ‘break’

PMK 1903a. *d̥iəs, *d̥aas ‘to break (v.i.)’

PK 501. *miat ‘vulture’

PMK 1051. *tmaat[] ‘vulture’

PK 487. *crlia ‘thorn’

PMK 205. *ɟlaʔ ‘thorn’

PK 759. *priit, *priat ‘banana’

Old Mon braat ‘banana’, Bahnar priit ‘banana’ (< P-Bahnaric *priit)

Mostly the wider MK reflexes of these (and other relevant) etyma have low vowel reflexes or their conditioned variants, in other words there are no other MK branches that share these changes in this lexicon. The one exception I have found is the parallel in Bahnaric *priit ‘banana’, although an isolated example like this could easily reflect borrowing, and the fact that Katuic reflexes support the reconstruction of *priit, *priat doublet forms supports this.

Conclusion

In so far as I can offer any sort of conclusion at this time, my research in progress on Katuic and wider Mon-Khmer historical phonology confirms the NorthernMK subgrouping of Khasi, Palaungic and Khmuic that has longstanding acceptance by scholars. On the other hand, I have found no particular phonological evidence to support subgrouping Katuic with any other branch, or even to sub-group any of the non-northern languages.

This suggests a basically flat tree structure along the following lines (leaving aside the issue of Munda), ordered roughly from north to south:

- Northern (Khasi, Palaungic, Khmuic)
- Vietic
- Katuic
- Bahnaric
- Khmer
- Pearic
- Monic
- Aslian
- Nicobarese

Figure 3: *Mon-Khmer classification suggested by comparative phonology*

From this point one turn to lexical methods to discover any evidence of sub-grouping among the non-northern branches, and in this matter I refer readers to the paper by Alves in this volume. Alves’ conclusions are not inconsistent with Diffloth’s

model, as outlined in Figure 2, that effectively treats the non-northern branches as forming a sub-group in opposition to NMK.

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