

AN EXAMINATION OF THE VOWELS AND FINAL CONSONANTS IN CORRESPONDENCES BETWEEN PRE-ANGKOR AND MODERN KHMER

Preparation of Table 1

Summary of the information provided by Table 1

PA-MK correspondences and OK Phonology

Appendix of examples with reference to Table 1

This study is intended to be complementary to a paper on the correspondences between Old and Modern Khmer initial consonants (Jacob: 1976). Only Pre-Angkor Khmer (PA) is dealt with here, however, and not the Angkor dialect (A). It seemed desirable to limit the investigation to PA, partly because of the inclusion of A, with its different vowel-notations, would cause confusion and partly because the author now has a complete card-index of PA,¹ whereas that for A is still in progress.

The majority of correspondences between Old Khmer (OK) and Modern Khmer (MK) involve the same final consonant at both stages of the language. Two regular exceptions to this are final r, which has turned to zero in MK (except in the Battambang area) and final s, which has completely merged with the final aspirate in MK. An example of each final consonant of PA with its MK correspondence is given below:

Final consonant	PA orthography	MK pronunciation	Meaning
k	sruk	/srok/	<i>inhabited area, district</i>
ṇ	sroṇ	/sroṇ/	<i>bathe</i>
c	roc	/rô:c/ ²	<i>wane</i>
ñ	añ	/ʔaɲ/	<i>I</i>
t	ket	/kaət/	<i>wax, be born</i>
n	mān	/mi:ən/	<i>have</i>
p	cap	/cap/	<i>sieze</i>
m	psam	/phsəm/	<i>unite</i>
y	toy	/daoy/	<i>along</i>
r - zero	dār	/ti:ə/	<i>claim v.</i>
l	jmol	/chmô:l/	<i>male</i>
v	jāhv	/ci:əv/	<i>barter</i>
s	thās	/tha:h/	<i>tray</i>
h	vrah	/prəəh/	<i>holy; god</i>
Zero	lvā	/lvi:ə/	<i>fig</i>

These regular correspondences between 15 PA and 13 MK final consonants were taken as the basis of the comparison. A table was made, using over 200 well-established correspondences, so as to find out their frequency and versatility of occurrence with vowels and arrange them in order. This is the order in which they are presented in Table 1, except

that h is placed next to s for easy comparison.

Up to this point, the enquiry had been made with only established vocabulary. When the validity of certain empty slots in the table was tested by reference to some less certain correspondences, however, it became apparent that a much wider variety of vowels and final consonants was probably in operation. The PA card-index was therefore searched for additional probable correspondences, as much in order to avoid claiming empty slots mistakenly as to try to fill more slots. This led to the preparation of Table 1, which forms the basis of this study.

PREPARATION OF TABLE 1

The vocabulary used comprises:

ESTABLISHED CORRESPONDENCES. These consist of (i) correspondences established by the occurrence of the PA form in a grammatical context with clear meaning and (ii) correspondences established by analogy, the PA form being in a context which clearly indicates the kind of word to be expected. In a place name, for example *vrai forest* and *stuk pool* are regularly followed by names of trees. Thus, a word such as *ramteñ*, which on K. 430 follows *vrai*, and which also has a form which suggests the correspondence, is held to be an established correspondence for MK /rùmde:ŋ/ *amomum galanga* (zingibéracées).

NAMES. Although, as has just been stated, words occurring in place-names may be held to be established when the context makes their nature clear, other words occurring either as place names or personal names or parts of such names may be held to be probable but not established correspondences. Cambodian names, even now, are often names of animals, plants or objects; or they may be descriptive of physical or mental characteristics. Where such words are used as material for the present study the PA word is followed by 'N.' in the Appendix and, if the vowel-symbol in the table depends entirely on examples which are names, it is followed by an asterisk.

In identifying correspondences of the two categories just described, certain regular relationships between PA and MK initial clusters were regarded as being dependable. These are:

(i) The relationship between a MK base and a PA form consisting of base with name-prefix, kN. This prefix, which consists of initial k, neutral vowel a, as junction, and nasal consonant, was tentatively included in an analysis of OK affixes (Jacob:1963, pp.69-70). This now seems well substantiated by the preponderance of names beginning with kN in contrast to other prefixes and by information supplied by Mr. Kuoch Hak Srea, that a kN name-prefix is used as a term of endearment before girls' names still. Some examples are given below with a reference to the number of an inscription on which they occur and the MK equivalent:

kañcañ 562 /cap/ *malaria*
kañjāhv 1030 /ci:əv/ *barter*

kandai 561 /tēy/ *cloth bag*
kansuc 582 /soc/ *N. of insect*

Vowels and final consonants in Khmer

kantri 748	/trɿy/ <i>fish</i>	kan-a 808	/ʔɔ:/ <i>flute</i>
kanden 926	/tɿən/ <i>candle</i>	kan-ek 18	/ʔaek/ <i>noisy device attached to a kite</i>

(ii) The relationship between a MK base and a PA form consisting of base with infix *-an-*. This correspondence was mentioned before (Jacob: 1976) but more examples have now been found, of which some are given here:

kanmoy 38	/kmu:əy/ <i>nephew, niece</i>	canmat 126	/chmat/ <i>milch (cow)</i>
kanmau 357	/khmau/ <i>black, dark</i>	ransi 134	/resvy/ <i>bamboo</i>
tuñnot 9	/tnaot/ <i>sugar-palm</i>	suññay 9	/snāy/ <i>salvadora capitulata</i>
danhum 424	/thum/ <i>scented, smell</i>	anlik 480	/ʔolvk/ <i>melon</i>

(iii) The relationship in which the PA form has the 'wrong' consonant as the first consonant of an initial sequence, i.e. surd where one expects sonant or vice versa. This type of relationship was accounted for as being due to loss of voicing in this pre-consonantal context and examples were given (Jacob:1976).

Table 1 represents the result of examining over 550 correspondences. Down the left side are arranged all MK vowels, the pairs of vowels produced on the two registers being kept together in accordance with the written symbol with which they are now spelt, since the written tradition is held to represent a development which has taken place from a time when the surd and sonant initial consonants genuinely represented surd and sonant initials and the vowel-symbols did not yet represent vowels diverging according to register. In each slot is placed one or more vowel-symbols, representing PA spellings found in the correspondences. An asterisk indicates that the only examples available are names. For symbols without an asterisk, established correspondences are offered. The Appendix gives as far as possible two examples for each vowel-symbol in the table, reading from left to right.

Notes with reference to Table 1

- (i) It is held that the vowel occurring before y, v, c and ñ and having in those contexts, in MK, the realisations ay/ëy, au/ÿu, ac/ëc and an/ën, according to register, may best be regarded as being a plus final consonant. Strictly according to the conventions of the present table, their representations on the second register would be: èay, èav, èac and èan.
- (ii) Short e/è and i in MK occur, in native words, apart from è in èn and èy mentioned in (i), only before h. Since MK long e: and i: cannot occur before h, the few examples of MK eh, èh and ih are entered along the e:è: and i: lines to save space.

SUMMARY OF THE INFORMATION PROVIDED IN TABLE 1

1. USE OF THE PA VOWEL-SYMBOLS

- (i) Consistency. It will be observed that in the case of two MK vowel-pairs,

PA correspondences were represented consistently by one vowel-symbol with all final consonants. Thus PA vowels ~ MK *ao/ô:* were exclusively represented by *o* and PA vowels *aə/ȳ:* were exclusively represented by *e*. Two other pairs were almost as consistent: PA vowels ~ MK *i:ə* were exclusively written with *ā*, (though a few PA words of which the vowel ~ MK partner vowel *a:* were written with *a*) and PA vowels ~ MK *ae/ê:* were all represented by *e*, with the exception of *kamratān* (written *kamrateñ* in the A period, however) and one non-established word.

The short-vowel symbols, *i* and *u*, were fairly consistently used to write respectively the vowels ~ MK *ɪ/û* and *o/ũ*. In each case, however, some confusion of spelling with the more open vowels, *e* on the one hand and *o* on the other, took place. Open *i* and *u* also represent vowels ~ MK *ɪy/î:* (open) and *o:v/ũ:*. The extent to which *i* and *u* occur apart from these uses is minimal.

While *ā*, *i* and *u* were chiefly used to write vowels ~ one MK vowel-pair, *a*, *o* and *e* were used to write vowels corresponding with a variety of MK vowel-pairs. Table 2 summarises these uses.

(ii) Register difference. PA vowels ~ MK vowels of one register are sometimes represented by one vowel while correspondences with the MK partner vowel on the other register are not. It seems that this may indicate the beginning of a differentiation between the vowels of the two registers. The details are therefore summarised here:

(i) As was mentioned above, *a* occurs as well as *ā* to represent PA vowels ~ MK *a:*, but not *i:ə*.

(ii) *u* occurs alongside *o* or *a* to represent the vowel ~ MK *ũə*, but not *ɔ*.

(iii) The experimental *va*, *vā* were used in the PA period to write the diphthong ~ MK *ũ:ə* in second register words only.

(iv) The experimental *ya*, *ye* were used in the PA period to write the diphthong ~ MK *iə* in first register words, while *ya*, *yā* occur in words ~ MK second register words.

2. MK VOWELS AND FINAL CONSONANTS FOR WHICH PA HAS NO CORRESPONDENCES

(i) The first observation which must be made is that MK *uə/ũə* and *ə:* have no entries in the Table. To the best of the writer's knowledge, no correspondence for any of these vowels occurred in PA or A. The first occurrences which are datable are probably the following, all Thai loanwords, found in the Middle Khmer inscriptions (Inscriptions Modernes d'Angkor): *mũəŋ* on No. 8 (1625 A.D.). 19; *krũəŋ* and (*rũŋ*) - *rũəŋ* on No. 12 (1638 A.D.), 11. 16 and 19. *lv:n(-lŋ)* occurs on No. 38 (1701 A.D.), 1.26.

Mk *ũ* is represented by only one correspondence in PA, *gi*, *gui*, ~ */kũ:/* that is, *is*. In MK, although it is not widely distributed, *ũ:* occurs before *ñ*, *t*, *p* and *h*.

(ii) An examination of the MK vowels and final consonants which are not

represented in PA correspondences showed that the chief lack of correspondence occurred in connection with MK forms having the vowels *ao/ò:*, *o:/ù:*, and *u:ə/ù:ə* and having palatal final consonants, *c*, *ñ* or *y*. It happens that many PA words ending in *oñ* seem to have no correspondence with MK.

3. CORRESPONDENCES FOR WHICH TABLE 1 DOES NOT PROVIDE A SLOT

Although generally speaking the correspondence between 15 PA and 13 MK final consonants is regular and reliable, there are some exceptions:

(i) In spite of regular correspondences between PA and MK *ñ* and PA and MK *ñ̃*, as in *tiñ* - /*dṽñ*/ *know*, *duñ* - /*t̃ɛ̃ñ*/ *buy*, etc., there is an instance of *ñ* going to *ɲ*: *tmiñ*, *tmiñ̃* 557 (cf. MK. /*deɲ*/ *pluck strings*) *player of stringed instrument*. MK /*ṽɛ̃ñ*/ *back, again* also goes back to an old form with velar nasal final consonant. When this is considered in conjunction with the variation between *ñ* and *ñ̃* in the final consonant of several OK titles (*tāñ* and *tañ̃*, *mratañ* and *mratañ̃*, *steñ* and *steñ̃*), it seems probable that we are dealing here with dialectal differences.

(ii) One PA word is written both with and without final *r*. Thus we have *camkā* 426, 115 and *camkār* 664 ~ MK /*cəmka:*/ *plantation, market-garden*. This may be a dialectal variation or a mistake. In Middle Khmer poetry *r* rhymed with *l* (Jacob:1966,232); this would suggest that at least it was not absent in the pronunciation of speakers in the earlier PA and A periods. One or two words which have in MK final *l* were written with *r* in PA:

kantor N. 1030 /*kəndol*/ *rat, mouse*
sampur N. 910 /*səmbol*/ *complexion*
knur N. 557 /*khno*/ *jack-fruit*

(iii) Written *s* and *h* as final consonants, now both realised as the aspirate, were also rhymed together in Middle Khmer poetry. It is possible that already there was a merging of pronunciation of the two final consonants at the Middle Khmer stage and that it was after that that *s* was used in writing to indicate certain long vowels preceding it, while *h* indicated a short vowel preceding it. In any case, certain correspondences between PA *s* and MK written *h* seem acceptable. M. Cœdès identified PA *pas* with MK /*bəh*/, written *poh*, for example, in interpreting PA *pamas* as *grinder*; and some names suggest such a correspondence, e.g. *trases* 765 /*trəseh*/, written *traseh* N. *of a kind of woodpecker* and *kañcus* 956 /*kəɲco*/, written *kañcu* N. *of a smallfish with two spears*.

PA-MK CORRESPONDENCES AND OK PHONOLOGY

The question of what vowels were actually operating at the phonological level in PA times now faces us. In an earlier study (Jacob: 1960) the writer attempted to analyse OK phonology from a synchronic viewpoint. She would, however, be the first to admit that more progress has been

made by diachronic methods. The combined vowel phonology of PA and A has been admirably tackled by Professor Sakamoto in a series of four articles (Sakamoto:1970-4). He uses two methods to analyse his material. One method is the examination of the spelling of the vowels in individual words corresponding with a given MK vowel, to show where there was confusion and where not. The confused spellings, taken in conjunction with the MK corresponding vowel, show that a comparable distinction was already in operation but that it was a distinction for which symbols were lacking. The second method is the examination of the initial and final consonants of correspondences to show that where OK vowels, written with one symbol, correspond with MK words involving more than one MK vowel (quite apart, that is, from the question of MK divergence according to register), if no explanation of the divergence can be found in the initial or final consonants of the OK words, and if no correlation can be seen between particular vowels and particular final consonants, then one is at liberty to suppose that OK had the same distinctions as MK and that spelling ambiguities were tolerated.

Sakamoto's use of the first method was highly successful in sorting out the *a* and *ā* vowels so as to establish the phonemes which he writes **ɒ* and **a*. It was also successful in separating his **ɔ* (~ *ao/ô:*), **o* (~ *o:/û:*) and **uo* (~ *u:ə/û:ə*). The second method was used to establish that **ɛ* (~ *ae/ê:*) and **ə* (~ *aə/ÿ:*) were separate phonemically from **e* (~ *e:/ê:*). Here Sakamoto did not refer to initial consonants but his implication is that they provide no explanation of the MK differences. We have, for example, PA *tem*, *tek* ~ MK /*daəm*, *daek*/; PA *ceñ*, *cer* ~ MK /*caeñ*, *ce:*/; PA *vek*, *ver* ~ MK /*vê:k*, *vê:*/; PA *pre*, *preñ* ~ MK /*praə*, *pre:ŋ*/.

In some parts of his analysis, however, it seems that Sakamoto did not apply his methods where he might have done. In 'e de khmer ancien' he sets out to use the confused or non-confused spellings of individual words to define phonemes written with *e*. Having found no confused spellings for PA *tamre*, *ampel*, *et*, *vañe*, *ber* or *pi*, *ti* *piñ*, *siñ*, he deduces that the A spelling *ya*, which all these words later have, represented a fusion of two distinct PA sounds, **i* and **e*. In fact he had an example of confused spelling among his few words, in the word *tamre*, which was spelt two ways in PA times, with *ɾ* as well as with *e*, and he knew that *vñe* had later spellings *vñi* and *vñya*. He could therefore have allowed these cases of confused spellings to assign the *tamre* set to **i*. Similarly, in 'i, ī, ya, yā de khmer ancien' p. 498, he concludes, in spite of the confused A spellings *i*, *ī*, *ya* of **i* and *ya*, *yā* of **iə*, that the same diphthong phonetically was heard in the pronunciation of these two phonologically distinct vowels, **i* and **iə*, and that they were somehow distinguished again later so as to yield two separate MK vowels. It still seems to the present writer more satisfactory to assume that there was at least a difference in A between **ia* (spelt *ya* and *yā*) and previously spelt *e*, *ya*, *ye* and *yā* in PA) and **i* (spelt *i*, *ī* and *ya* and previously spelt *i*, *e* in PA). The distinction made (Jacob:1961,359) between the short and long A diphthongs *iə*, *īə* still seems therefore to be valid.

With most of Sakamoto's conclusions, however, the writer heartily agrees. His second method might now be applied further to the analysis of *a and *ɒ. In paragraph 6 of 'a and ā de khmer ancien' Sakamoto examines his examples with reference to their final consonants to see whether short and long pairs may be substantiated in each case and decides that his twelve instances in which a PA vowel corresponds with both a short and a long vowel before the same consonant in MK are not enough to make a satisfactory conclusion. However, PA examples in the Appendix to this study indicate the occurrence of:

PA *a ~ both MK a: and MK a before k, ñ, m, p, l, s, y, t, c, ñ.

PA *a ~ both MK i:ə and MK ɛə ~ ɔə before ñ, n, m, p, y, v.

PA *ɒ ~ both MK ɔ: and MK ɔ before k, ñ, m, p.

PA *ɒ ~ both MK ɔ: and MK ɔə before k, ñ, n,

Pre-vocalic consonants may – in one case only! – assist the conclusion. PA soñ 493 /sɔ:ŋ/ *pay back* may be compared with PA sañ 137 /sɔŋ/ *build*.

APPENDIX OF EXAMPLES WITH REFERENCE TO TABLE 1

As far as possible, two examples are given for each PA vowel-symbol entered on the table, reading from left to right along each line. When possible, different words have been chosen to illustrate different spellings of vowels corresponding with one MK vowel. N. = name. Pl.N. = place name. Numerals give a reference to an inscription, MK pronunciation is given between sloping lines.

a:k	cāk N. 24 /ca:k/ corypha pilearia. skāk N. 109 /ska:k/ shelf, rack.
a:ŋ	kantrāñ N. 748 /tra:ŋ/ ficus pilosa. tanlāñ N. 74 /thla:ŋ/ large earthenware cooking pot.
a:	kralā 557 /krəla:/ court. pkā 21 /phka:/ flower.
a:m	hām N. 129 /ha:m/ forbid.
a:p	c-āp N. 559 /chʰa:p/ smelling of fish. ^a sāp N. 877 /sa:p/ woven basket for catching small fish. tarap 56 /dəra:p/ all the way, always.
a:l	kantāl 79 /kɔnda:l/ middle. āl N. 357 /ʰa:l/ be hasty. ampall 389 /ʰɔmbal/ all.
a:h	thās 505 /tha:h/ tray. kmās N. 11 /khma:h/ bashful.
a:y	tañhvāy 9 /tɔŋva:y/ offering. svāy 134 /sva:y/ mango.
a:	skār N. 76 /ska:/ weasel. cpar 562 /cba:/ garden. cmar 424 /chma:/ fine, small.
a:t	tmāt N. 49 /tma:t/ vulture.
a:c	trāc 726 /tra:c/ N. of large tree of dipterocarpus family, producer of excellent oil. tralāc 51 /trəla:c/ N. of a variety of gourd.
a:ŋ	tmāñ 956 (cf. /tba:ŋ/ weave v.) weaver. kravāñ N. 561 /krəva:ŋ/ cardamum. tpāñ, tpañ N. 18, 66 /tba:ŋ/ weaving.

i:əŋ	jān N. 24 /ci:əŋ/ <i>artisan</i> . vān N. 149 /pi:əŋ/ <i>sterculia foetida</i> .
i:ə	nā 79 /ni:ə/ <i>at a time when, at, with regard to</i> . ^a mā 1029 /mì:ə/ <i>uncle</i> .
i:ən	mān 154 /mì:ən/ <i>have</i> .
i:əm	marām N. 149 /mri:əm/ <i>finger</i> . amvām Pl. N. 451 /pi:əm/ <i>place where stream runs into river or river into sea</i> .
i:əp	prāp N. 562 /pri:əp/ <i>pigeon</i>
i:əl	gvāl 689 /khvi:əl/ <i>herd</i> . v.
i:əh	mās 388 /mì:əh/ <i>gold</i> .
i:əy	kajāy N. 149 /khci:əy/ <i>Kaempferia pandurata</i> .
i:ə	dār 493 /ti:ə/ <i>claim</i> . dmār 79 (cf. /ti:ə/ <i>claim</i>) <i>claimant</i> .
i:əv	jāhv 79 /ci:əv/ <i>buy, barter</i> . jamnāhv 811 (cf. /ci:əv/ <i>barter</i>) <i>barter n</i> .
ak	canlakk 79 /cəmlak/ <i>sculpted object</i> . prak 388 /prak/ <i>silver</i> . cpāk Pl. N. 76 /cbak/ <i>place where roots are exposed</i> .
aŋ	pnañ 155 (cf. /baŋ/ <i>screen v.</i>) <i>screen n</i> . prañ 24 /praŋ/ <i>dry (of weather, rice-growing)</i> . lpāñ 155 /rəbaŋ/ ³ <i>shelter, screen</i> . grāñ 877 /kraŋ/ <i>hill on flat plain</i> .
an	tlann 561 /thlan/ <i>cobra</i> . santan N. 137 /səndan/ <i>Garcinia Merguensis</i> . cān. N. 66 /can/ <i>sandalwood</i> .
am	cam 438 /cam/ <i>guard</i> . praṃ 607 /praṃ/ <i>five</i> . tāṃ 689 /dam/ <i>cook v</i> . lkām N. 560 /rəkam/ ³ N. <i>of a tree with very long branches and strong thorns</i> .
ap	cap 44 /cap/ <i>sieze</i> . kracap 1029 /krəcap/ <i>edible water-creeper</i> . snap Pl. N. 689 /snap/ <i>thicket</i> .
al	cal N. 138 /cal/ <i>jealous</i> .
ah	cas, ^a cas 493, 726 /cah/ <i>old</i> . panlas 137 /bənlah/ <i>exchange</i> .
ah	kanlah 416 /kənlah/ <i>half</i> . klah 726 /khlah/ <i>some</i> .
ay	tñai 38 /thŋay/ <i>day, sun</i> . tlai 133 /thlay/ <i>expensive, costing</i> .
at	kan-at N. 134 /kʔat/ <i>tadpole</i> . snat N. 423 /sŋat/ <i>quiet</i> . chvātt 341 (cf. /chvat/ in /chvat-chviəl/ and /chvat-chvaŋ/ <i>criss-cross</i>) <i>mark out</i> . sāt N. 18 /sat/ <i>drift</i> .
ac	srac 555 /srac/ <i>achieved, finished</i> . stac N. 560 /sdac/ <i>king; pre-verbal particle in royal vocabulary</i> . kēc 790 /kac/ <i>cut off</i> . hēc N. 138 /hac/ <i>restlessly looking for something new and different</i> .
au	krau 18 /krau/ <i>outside</i> . cau 51 /cau/ <i>grandchild</i> .
aŋ	añ 561 /ʔaŋ/ <i>I</i> . tarañ 341 /traŋ/ <i>small flat grass-covered area</i> . kantāñ N. 689 /kəndaŋ/ <i>curly</i> . krāñ N. 557 /kraŋ/ <i>unwilling</i> .
ək	^a nak 422 /nək/ <i>person</i> . vnāk 21 (cf. /pək/ <i>be attached, wear</i>) <i>adornment, attachment</i> .
əŋ	glāñ 505 /khlēŋ/ <i>storehouse</i> . remañ 129 /rəmēŋ/ <i>roe-buck</i> . plāñ 1029 /phlēŋ/ <i>thatching grass</i> . kandāñ N. 11 /kəntēŋ/ <i>part of N. of three plants</i> .
ən	jamnan 561 (cf. /cən/ <i>tread on</i>) <i>causeway</i> .
əm	ramaṃ 557 (cf. /rəm/ <i>dance v.</i>) <i>dancer</i> . naṃ 137 /nəm/ <i>lead, bring</i> .

ðəp	raṇap N. 557 /rəŋðəp/ <i>calmed down</i> . raṇṇap N. 66 /rṇṇəp/ <i>apease, silence v.tr.; kill</i> .
əəh	vraḥ <i>passim</i> /prəəh/ <i>holy; god</i> . hvaḥ 502 /vəəh/ <i>cut open</i> .
əy (strictly əəy)	bhai 582. cf. /məphəy/ <i>twenty</i> . vraɪ 18 /prəy/ <i>forest</i> . vanli 561 /pṇṇəy/ <i>Zingiber cassumunar</i> .
ðət	mat N. 66 /mðət/ <i>mouth, edge</i> .
əc (strictly əc)	luc 38 /ləc/ <i>sink, set; west</i> . kandec N. 904 /kəntəc/ 1. <i>scabies</i> 2. <i>part of name of plant which stings when touched</i> . vlac N. 11 /phləc/ <i>forget</i> .
ʔu (strictly əəv)	dau 76 /tʔu/ <i>go</i> . tvau N. 54 /thpʔu/ <i>sorghum millet</i> . nu, nuv 424, 939 /nʔu/ <i>and, with</i> .
ən (strictly əən)	duñ 424 /tən/ <i>buy</i> .
ək	kak N. 129 /kək/ N. <i>of a rush grass</i> . kantok 557 /kəndək/ <i>Cyatula genicolata (Nyctogynées)</i> . cəmpok 438 /cəmbək/ <i>Buchania fastigiata</i> .
əŋ	sañ 137 /səŋ/ <i>build</i> . snañ 137 (cf. /səŋ/ <i>build</i>) <i>foundation</i> . sroñ 124 /srəŋ/ <i>bathe</i> .
əm	cəṇ 561 /cəm/ as in /riəp cəm/ <i>make ready, provide</i> . psəṇ 127 /phsəm/ <i>unite</i> .
əp	tap 388 /dəp/ <i>ten</i> . trap 21 /trəp/ <i>egg-plant</i> .
əl	tnal 493 /thnəl/ <i>main road</i> . kañval N. 22 /kəŋvəl/ <i>trouble</i> . cañol N. 138 /chŋəl/ <i>surprised</i> .
əh	klas 505 /khləh/ <i>parasol</i> . tras. N. 502 /trəh/ N. <i>of tree which grows in wet places; medic</i> .
əh	səmtəh N. 8 /səmdəh/ <i>spittle</i> . səh N. 24 /səh/ <i>exhausted</i> .
ək	lak 22 /ləək/ <i>sell</i> . caruk 124 /crək/ <i>pickle</i> .
əŋ	kamvañ 421 /kəmpṇəŋ/ <i>waterfront</i> . grañ 155 /krṇəŋ/ N. <i>of tree with brittle wood</i> . yuñ N. 79 /yṇəŋ/ <i>gleaming</i> . camdoñ N. 424 /cəmtṇəŋ/ <i>adolescent</i> .
ən	pandan 726 /bəntṇən/ <i>tame v.tr</i> . lahvan N. 137 /lvṇən/ <i>graceful</i> .
əl	candal 877 /cəntṇəl/ <i>support, stand n</i> . rahval N. 926 /rəvṇəl/ <i>busy</i> . pradul Pl. N. 557 /prətṇəl/ <i>opposite</i> .
əh	tnas 877 (cf. /thnṇəh/ <i>object contrived with branches used to channel fish into the place where they are to be caught</i>) <i>means of directing water in gutter (?)</i> . kvas N. 24 /khpṇəh/ <i>tall, high</i> . kavos. N. 910 /khpṇəh/ <i>tall, high</i> .
əh	jmaḥ 557 /chmṇəh/ <i>name</i> . vlah 561 /phlṇəh/ <i>double</i> .
ət	rat 66 /rṇət/ <i>run</i> .
ək	clək N. 138 /chlək/ N. <i>of animal of weasel family</i> . səmpok N.

- 562 /sɔmbɔ:k/ *bark*.
- ɔ:ŋ kañ 21 /kɔ:ŋ/ *bracelet, anklet*. coñ 341 /cɔ:ŋ/ *put together, tie*.
phoñ 38 /phɔ:ŋ/ *all, too*.
- ɔ: ka 137 /kɔ:/ *construct*. ta *passim* /dɔ:/ *the one which, the*. tmo 21
/thmɔ:/ *stone*. so 79 /sɔ:/ *white*.
- ɔ:m kan-am N. 648 /kʰɔ:m/ *pitcher*. kraham N. 41 /krəhɔ:m/ *red*.
- ɔ:p ckop 44 (cf. /kɔ:p, prəkɔ:p/ *equipped with*) *involved (in debt)*.
- ɔ: tampar N./ 155 /dɔmbɔ:/ *foursome, 4*.
- ɔ:t trat N. 22 /trɔ:t/ *hurrying, though weary, in quick spurts*.
- ð:k mok 341 /mð:k/ *come*. svok 124 /spð:k/ *tray*.
- ð:ŋ cgoñ N. 137 /chkð:ŋ/ *imperfect*.
- ð: lño 124 /lɲð:/ *sesamum*. kambho 438 /kɔmphð:/ *N. of variety of fish, barbus macrolepidotus*.
- ð:n mon N. 149 /mð:n/ *mulberry*.
- ð:m kadaṃ N. 424 /khtð:m/ *hut*. sagoṃ N. 357 /skð:m/ *thin (of human physique)*.
- ð:p karap 21 /krð:p/ *cover n*.
- ð: bhar N. 664 /phð:/ *tell a lie*.
- ao sno 904 /snao/ *sesbania paludosa*.
- aom karom 137 /kraom/ *below*. caṃnom 44 (cf. /caom/ *enclose, enclosure*).
- aol sramol N. 18 /srəmaol/ *shadow*.
- aoy oy *passim* /ʔaoy/ *give*. toy 590 /daoy/ *along, by*.
- ao kantor N. 1030 /kɔndao/ *mouse, rat*. Alternative pronunciation in MK: /kɔndol/.
- aot tuñnot 9 /tnaot/ *sugar-palm*. sot 79 /saot/ *in addition*.
- aoc kmoc Pl. N. /khmaoc/ *ghost*.
- ò:ŋ moñ N. 138 /mò:ŋ/ *N. of area between Byo and Pursat*. yoñ N. 451 /yò:ŋ/ *draw water in bucket at end of rope*.
- ò:l jmol 127 /chmò:l/ *male*. yol Pl. N. 134 /yò:l/ *swing*.
- ò:c roc 451 /rò:c/ *period of waning moon*. samvoc N. 816 /sɔmpò:c/ *civet-cat*.
- o:ŋ toñ 424 /dɔ:ŋ/ *coconut*. antoñ, antvoñ 124 (cf. /ʔɔndo:ŋ/ *well n.*) *beehive, container for oil*.
- o:n kon, kun 66 /ko:n/ *child*. paon 76 /phʔo:n/ *younger sibling*.
- o:m smom N. 127 /smo:m/ *beggar*.
- o: canhor, canhvar 904, 341 /cɔŋho:/ *stream*. vnur 341 /phno:/ *mound*. hvar 726 /ho:/ *flow*.
- o:t vnot N. 422 /phno:t/ *birthmark*. slot N. 940 /slo:t/ *good-natured*.
- o:c kroc 757 /kro:c/ *citrous fruit*. ptoc 726 (cf. /dɔ:c/ *like, as*) *equivalent*.
- o:v plu 76 /phlo:v/ *way, path*. sru, srū 424, 726 /sro:v/ *paddy*.

ù:k	dok, dvak 44, 341 /tù:k/ <i>boat</i> .
ù:ŋ	tmoñ 415 (cf. /tù:ŋ/ <i>beat drum</i>) <i>drummer</i> .
ù:	ru, rû 341, 664 /rù:/ <i>like, as</i> .
ù:n	jon, jvan 30, 74 /cù:n/ <i>offer</i> . jamnon 689 /cùmnù:n/ <i>offering</i> .
ù:	ñarrior, ñrañor 689, 124 /rəŋù:/ <i>syrup</i> .
u:e	tao, taor N. 559, 149 /tʰu:ə/ <i>terminalia tree</i> .
u:ən	kalmon 124 /krəmu:ən/ <i>wax</i> . pon 90 /bu:ən/ <i>four</i> .
u:əh	pos 44 /bu:əh/ <i>enter the religious life</i> .
u:əy	kanmoy 38 /kmu:ey/ <i>nephew, niece</i> . troy N. 137 /tru:əy/ <i>new leaf</i> .
ù:ək	vnok, vnvak 134, 7 (cf. /pù:ək/ <i>group</i>).
ù:ə	mo. N. 24 /mù:ə/ <i>wild rice</i> .
ù:əy	moy 137 /mù:əy/ <i>one</i> .
ù:ət	kaṃdot N. 109 /tù:ət/ <i>great-grandparent</i> . vot N. 149 /pù:ət/ <i>join forces, help at work</i> .
ù:əɔ	lvāc 341 /lù:əc/ <i>steal</i> .
ok	saṃruk 21 (cf. /səmrək/ <i>sink deep in</i>) <i>repoussé</i> . sruk 79 /srok/ <i>inhabited area, district</i> . saṃlok 22 (cf. /səmlə:-səmlək/ <i>variety of cooked dishes</i>) <i>cooking</i> .
oŋ	kaṃluñ 44 (cf. /kəmləŋ/ <i>group, place</i>) <i>inside</i> . kurun 388 /kroŋ/ <i>king</i> .
om	kñum <i>passim</i> /kɲom/ <i>servant</i> . klamuṃ 24 /krəmom/ <i>maiden</i> . kaṃ 724 /kom/ <i>do not</i> . kantrom N. 711 /trom/ <i>N. of kind of egret</i> . som 939 /som/ <i>ask for</i> . tvaṃ 22 /dom/ <i>piece</i> .
oh	cuh 557 /coh/ <i>go down, put down in writing</i> . uḥ N. 24 /ʰoh/ <i>firewood</i> . kantvoh N. 134 /doh/ <i>grow</i> .
oy	canhoy 877 (cf. /cəmhoy/ <i>steamer; steamed food, container for burning in making perfume</i>). sa-uy N. 28 /sʰoy/ <i>putrid</i> . uy N. 562 /ʰoy/ <i>little basket</i> .
ot	kaṃput N. 561 /kəmbot/ <i>having lost a limb</i> .
ùk	duk 904 /tùk/ <i>put, reserve, keep</i> . vuk N. 8 /pùk/ <i>beard</i> .
ùŋ	ruñ 76 (cf. /rùŋ/ <i>in</i> /rùŋ-rùəŋ/ <i>grand, splendid</i>) <i>big</i> .
ùn	mun N. 24 /mùn/ <i>spotty</i> .
ùm	gmum 124 /kɣmùm/ <i>bee</i> . danhum 424 /thùm/ <i>scented</i> . paṅgaṃ 44 /bəŋkùm/ <i>greet respectfully</i> . vnaṃ 44 /phnùm/ <i>hill</i> . voṃ 154 /pùm/ <i>not</i> . klavom N. 357 /krəpùm/ <i>bud</i> .
ùp	dap 38 /tùp/ <i>block, impede</i> . damnap 689 /tùmnùp/ <i>dam, barricade</i> .
ùl	jul N. 137 /cùl/ <i>mend</i> .
ùh	noḥ 79 /nùh/ <i>that</i> . loḥ, lvāḥ 561, 341 /lùh/ <i>as far as</i> .
ùy	duy N. 24 /tì:tùy/ <i>owl</i> .
ùt	mut 451 (cf. /mùt/ <i>cut, pierce</i>) <i>harm</i> . vut N. 11 /pùt/ <i>pretend</i> .
aək	t-ek N. 149 /tʰaək/ 1. <i>N. of a creeper</i> . 2. <i>hiccough</i> .
əeŋ	takeñ N. 357 /thkaəŋ/ <i>lofty</i> .

- aə pre 561 /praə/ *use, order*. paṃre 561 /bəmraə/ *servant*.
 aən camren 451 /cəmraən/ *increase, prosper*.
 aəm tem 560 /daəm/ *tree*. phem 79 /phaəm/ *with young*.
 aəh pares Pl. N. 9 /praəh/ *deer*.
 aəy ley 557 /laəy/ *at all*. trey Pl. N. 1029 /traəy/ *the far side*.
 aət kan-et N. 155 /ʔaet/ *strain neck to see*. ket 44 /kaə/ *wax (of moon); be born*.
- ʔ:ŋ jeŋ 79 /cʔ:ŋ/ *foot, lower part (of hill, etc.)*. vleŋ 877 /phʔ:ŋ/ *fire*.
 ʔ: jhe 66 /chʔ:/ *wood*. tve 127 /thvʔ:/ *do*.
 ʔ:m kamvem N. 109 /khpʔ:m/ *despise*.
 ʔ:p dep 726 /tʔ:p/ *then*.
 ʔ:l vrel N. 163 /prʔ:l/ *careless*.
 ʔ: der 149 (cf. /cəmtʔ:/ *middle-sized*) *adolescent, middle-sized (?)*.
- aek tek 388 /daek/ *iron*. santek 689 /səndaek/ *bean*. cacāk (cf. /caek/ *divided* (?)).
 aen kamraten 400 /kūmdaen/ *lord*. prahveŋ 424 /prəvaen/ *length*.
 kammrataŋ 561 /kūmdaen/ *lord*.
 ae ple 561 (cf. /phlae/ *fruit*) *produce, revenue*. sre passim /srae/ *ricefield*.
 aen pen N. 877 /baen/ *thresh*.
 aem pa-em N. 127 /phʔaem/ *sweet*.
 ael tel 66 /dael/ *which, who*.
 ae taŋker N. 134 /dɔŋkae/ *tick, acarus*. her 44 (cf. /hae/ *go in procession*) *flow*.
 aev cehv N. 560 /caev/ *row a boat*. slev. N. 357 /slaev/ *having a squint*.
- è:k ahvek 124 /vè:k/ *ladle*. tvek N. 480 /thpè:k/ *bald*.
 è:ŋ reŋ 426 /rè:ŋ/ *weave, plait*.
 è: vave 562 /pəpè:/ *goat*.
- iək canlek, canlyak 561, 7 /səmliək/ *clothing*.
 iəŋ camreŋ 557 (cf. /criəŋ/ *sing*, /cəmriəŋ/ *song*) *singer*. kanteŋ N., Pl. N. 562, 76 /kəndiəŋ/ *commelina communis*.
 iəm hyam N. 109 /hiəm/ *have a discharge*.
 iəp tkep N. 8 /thkiəp/ *pinch, nip*.
 iəl trel N. 563 /triəl/ *N. of a creeper*. kryel 134 /kriəl/ *crane n*.
 iə kantyar N. 755 /kəndiə/ *white ant*. yer Pl. N. 421 /ʔiə in ʔiə-məmiə/ *go carefully along an edge*.
- iəŋ deŋ N. 149 /tiəŋ/ *exact*.
 iən den 388 /tiən/ *candle*. rmmen N. 424 (cf. /riən/ *learn*) *student*.
 iəp tgyap N. 904 /thkiəp/ *pinch, nip*.
 iəh chdyās 723 (cf. /cəntiəh-cəntè:ŋ/) *hampered*.
 iəv kandehv N. 808 /tiəv/ *blue jay*. vñau 561 /phɲiəv/ *guest*.

e:k	trasek Pl.N. 560 /trəse:k/ peltophorum dasyrachis.
e:ŋ	kanmeñ, kanmiñ 49, 423 /kme:ŋ/ young. pareñ 451 /pre:ŋ/ oil.
e:h	ces N. 137 /ce:h/ cotton thread.
eh	ceh N. 137 /ceh/ know how to. treh N. 149 /treh/ pluck stringed instrument.
e:	cer 38 (cf. /ce:/ long, as time proceeds/ go, transgress. cmer 502 (cf. /ce:/ long, as time proceeds) transgressor. tmir 137 (cf. /de:/ sew) one who sews, attaches. sir 133 /səse:/ write.
è:	ge passim /kè:/ person. danle 904 /tuənlè:/ river, Tonle Sap.
è:p	vep N. 357 /pè:p/ stick out lower lip.
è:h	dves N. 607 /thvè:h/ careless.
è:h	veh N. 76 /vèh/ slip off, avoid an encounter.
è:	hvera 127 /vè:/ help in turn, form a rota.
ɤk	slik 560 /slyk/ 400. anlik N. 480 /ʔolyk/ melon.
ɤŋ	ktiñ 451 (cf. /kəmdɤŋ/ owing) pay (back). piñ 557 /bɤŋ/ lake.
ɤn	sin 24 /sɤn/ further, too.
ɤp	crip 726 /crɤp/ detach.
ɤl	ampel 940 /ʔəmbɤl/ salt.
ɤh	is 562 /ʔɤh, ʔəh/ all.
ɤy	krapɤ 11 /krəbɤy/ buffalo. pi 388 /bɤy/ three. tmī Pl. N. 493 /thmɤy/ new. kmī 11 /khmɤy/ reclaim. tamre, tamrɤ 21, 388 /dəmɤy/ elephant. tɤ 25 /trɤy/ fish. camɤnya 341 /cəmnɤy/ food, pasture.
ɤt	kampit N. 562 /kambɤt/ knife. spit 137 (cf. /svt/ pour) libation. samrat 30 /səmrɤt/ husk, clean (rice).
u:k	dik 137 /tū:k/ water.
u:ŋ	cdiñ 134 /stū:ŋ/ river. kajiñ N. 648 /khcū:ŋ/ lamprey, numb-fish.
u:n	uden 389 /ʔo:tū:n/ container for fish sauce ⁴ tvin N. 726 /thpū:n/ blindfold. vin N. 562 /pū:n/ topmost, best.
u:m	dnem 560 /thnū:m/ yoke, pair.
u:l	valvel 877 /pəpū:l/ taper-holder. amvil 129 /ʔəmpū:l/ tamarind.
u:h	vis. N. 11 /pū:h/ venom, poison.
u:h	sgih N. 133 /skū:h/ slow.
u:t	kamvit N. 155 /pū:t/ true. jit. N. 76 /cū:t/ near.
ì:ŋ	vreñ 790 /pri:ŋ/ Syzygium. kanden N. 8 /khti:ŋ/ wild buffalo.
ì:	amvi 79 /ʔəmpi:/ from. ^a ji 451 /ci:/ grandparent, ancestor. vnè 134 /phni:/ flower. ye 562 /ni:/ female (?) laye N. 66 /lɤni:/ douroucoul monkey (?).
ih	neh 388 /nih/ this. gnih 555 id.
ì:	ber 388 /pi:/ two.
u	gi, gui 561 (both) /kū:/ is, that is.

Uses of the PA Vowel-Symbols, in relation to the MK vowels with which they corresponded, before all final consonants

[illegible]

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TABLE 2

Summary of the MK correspondences with PA Vowel-Symbols

PA vowel-symbol	MK correspondences		
	Usual	Unusual	Exceptional
ā:	a:/i:ə	a/ĕə ~ əə	ae
a	a/ĕə əə	a:	
a,o	ə/ūə ə:/ə:	o/ū	
o	ao/ô:		o/ū
o, u, ū, va	o:/ū:		
o, va, vā	u:ə/ū:ə		
e	e:/ê: aə/ÿ: ae/ê:	ɣ/ũ i:	
e.ya, ye, yā	iə/iə		
i (closed) i (open)	ɣ/ũ ɣy/i:	i (+ h)	e: (+ r)
u (closed) u (open)	o/ū o:v/ū	ūə (+ k, ŋ, l)	
ai	ay/èy		
au	au/ÿu		

NOTES

1. This includes the texts published by G. Coédès plus the texts of K. 1029 and 1030 kindly supplied by Monsieur C. Jacques of the Ecole Pratique des Hautes Etudes, Paris.
2. The accent indicates second register.
3. r and l are not in opposition in this pre-consonantal context.
4. I am grateful to Mr. Kuoch Hak Srea for suggesting this correspondence.

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