THE RELATIVE DATING OF SOME KHMER CPĀ'PA*

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The language of the Middle Khmer period, ranging from the 14th to the 18th centuries, is represented by a fairly wide variety of texts. In addition to the so-called "modern" inscriptions of Angkor which Mme Lewitz has been publishing in the BEPEO,¹ these include a goodly number of manuscript works such as chronicles, romances, homiletic or ethical treatises, short technical manuals, and above all the Rāmāker-(ti). Now it is characteristic of most of these manuscript works that they are undated and in meter form. The circumstance that they are undated has been not a little vexing, and has thus far limited their usefulness to historical linguistic studies and retarded construction of a valid history of Middle Khmer literature. The circumstance that most of these same texts are metrical suggests the possibility of at least arranging them in an evolutionary order which may approximate their dates of composition.

The present paper describes the method and provisional results of work I have been doing for some months on the application of internal evidence to the relative dating of the Middle Khmer cpā'pa /cpap/ literature, the homiletic genre referred to above. The method of analysis I have been following involves calculating phonological growth toward a known stage of the language, namely the present. Effective use of such a method presupposes a series of undated texts.
which accurately reflects the language at the time of composition. I have chosen to work with the pa'pa or "codes of conduct" because these, besides being undated and in metrical form, are relatively short and appear to cover a fairly broad time span. While there is nothing original in the method followed, it occurs to me that essentially the same method may have wider uses and to this extent be of interest to others in Mon-Khmer studies.

Before the method and its results can be described, two general matters must be introduced by way of background.

In the first place, it is well known that the phonological system of Khmer has undergone radical changes in quite recent times. Most of us working in the field seem to agree that these changes were set off by a devoicing of the Old Khmer voiced stops. This process appears to have reached its culmination between the 16th and the 18th centuries. The Middle Khmer period as a whole, therefore, may be regarded as a time of accelerated phonological development.

The voiced or voiceless nature of the Old Khmer stops is of interest to us here only insofar as the devoicing process was accompanied by compensatory changes in the vowel system. Old Khmer vowels following originally voiced initials remained for the most part unchanged and came to assume the role of a High Register. For example, Old Khmer *[gi:] > modern kii/ while OK *[gu:] > modern /kuu/. The same Old Khmer vowels following original voiceless initials, however, were largely modified by several types of lowering and came collectively to function as a corresponding Low Register. For example, Old Khmer *[ki:] > modern /kəej/ (for *[kei:]) while OK *[ku:] >
modern /kɔo/ (for *[kɔu:]). However, in the case of Old Khmer low central *[a:], not susceptible to further lowering, the process was reversed and "compensation" was effected in the emergent High Register. Thus Old Khmer *[ka:] > modern /kaa/, but OK *[ga:] > premodern and dialectal /keeə/ (for *[kəa:]) > modern standard /kʃiə/. Hence for each syllable nucleus of Old or early Middle Khmer ⁶ we have, in principle, two nuclei in modern Khmer; this is tantamount to saying that for the single set of Old Khmer nuclei we now have two complementary subsets, the registers, which are definable in historical as well as morphophonemic terms.

In the second place, something must be said of the numerous meters in use during the Middle Khmer period. These can be defined by the number of lines in each, by syllable-count, and by rhyme pattern. While much use is made of assonance and alliteration, rhyme refers specifically to end-rhyme—the syllable nucleus together with any final consonant that may be present. For example, the bhujaṅga ṛṭa meter comprises tristichs of 6 + 4 + 4 syllables wherein the last syllable of line a rhymes with the last syllable of line b while the last syllable of c rhymes with the last syllable of a in the next stanza; in addition, there is optional rhyme between the second and fourth syllables of a. The kākagati meter consists of heptastichs of 4 syllables to the line, with rhyme between the last syllables of a and b, another rhyme between the last syllables of c, e and f, and another rhyme between the last syllable of g and the last syllable of c in the next stanza; there is optional rhyme between the last syllable of d and the second syllable of e. The brahmagīti meter, finally,
consists of quatrains of $5 + 6 + 5 + 6$ syllables, with one rhyme between the last syllable of $a$ and the third syllable of $b$, another rhyme between the last syllables of $b$ and $c$, and another rhyme between the last syllable of $d$ and the last syllable of $b$ in the ext stanza; there is optional rhyme between the last syllable of $c$ and the third syllable of $d$. The rhyme pattern of these three meters may be schematized as follows:

\[
\text{bhujanga} \ U\text{IlA}
\]
\[
a. \quad x (1) \times (1) \times 2
\]
\[
b. \quad x \times x \times 2
\]
\[
c. \quad x \times x \times 3
\]

\[
\text{kakagati}
\]
\[
a. \quad x \times x \times 1
\]
\[
b. \quad x \times x \times 1
\]
\[
c. \quad x \times x \times 2
\]
\[
d. \quad x \times x (3)
\]
\[
e. \quad x (3) \times 2
\]
\[
f. \quad x \times x \times 2
\]
\[
g. \quad x \times x \times 4
\]

\[
\text{brahmagiti}
\]
\[
a. \quad x \times x \times x \times 1
\]
\[
b. \quad x \times x \times 1 \times x \times 2
\]
\[
c. \quad x \times x \times x \times 2
\]
\[
d. \quad x \times (2) \times x \times 3
\]

In working with the Middle Khmer opā'pa I have been struck by the havoc wrought on their rhyme by the recent phonological changes referred to above. These changes may be illustrated by the following tanzas in the kakagati:
Keeping the aforesaid metrical requirements in mind, we may classify the developments that have intervened into four types:

1. In rhyme 1 the vowel of /cpap/ remains unchanged (modern /cbap/) while that of /gap/ suffers change (modern /koəp/). Except to the eye, the two syllables no longer rhyme. This type of change we may call divergent development.

2. In rhyme 2 the vowels of /krooj, qooj, dooj/ undergo the identical change (modern /kraaoj, qaoj, daaoj/). To the ear as well
as to the eye these syllables, despite the change, still rhyme. This type of change we may call parallel development.

3. As has been said, the $d-e$ rhyme of this meter is optional, and in the text cited here the poet declines to use it in over 35% of the cases where it would be possible. Hence we cannot be absolutely sure that what I have marked as rhyme 3 was an original rhyme at all. For purposes of illustration, however, I suggest that at the time this text was composed the vowel of /dɾɔɔp/ (Sanskrit *dravya 'wealth, property') may have been in the process of being centralized (as if reflecting Sanskrit *drä̃ya) and shortened to conform with the Indian theory of syllable length. It became /dɾap/ either before or after composition of this text, and eventually suffered the same change (modern /tɾɔɔp/) as the /gap/ in lines $b$ and $e$. If my view is correct, the two syllables would not have rhymed at an earlier period but did rhyme at the time of our text. This type of change, reflecting growth before the date of composition, we may call convergent development.

4. In rhyme 4 the vowel of /θaa/ rhymed originally and still rhymes with that of /suriŋja > sorəŋja/ in line $c$ of the next stanza. Since this vowel moves from the central position of Old and Middle Khmer to the front position of modern standard Khmer, we have here another case of parallel development. But in rhyme 1 of the second stanza the vowel of /blyy > plỳy/ and /ryy > rỳy/,
remaining high, undergoes no change at all. Nondevelopment of this kind we may call no change.

For the purposes of this analysis no change is limited to modern syllables with nuclei on the phonemically high level of openness:  

\[
\begin{align*}
/\text{biir} & > \text{piir}/ & : & /\text{sii} > \text{sii}/ & S 30c/31b \\
/\text{jit} & > \text{cit}/ & : & /\text{git} > \text{kit}/ & DK 8bc \\
/\text{blyy} & > \text{plyy}/ & : & /\text{ryy} > \text{ryy}/ & KC 9ab \\
/\text{slyk} & > \text{slyk}/ & : & /\text{dyk} > \text{tyk}/ & KK 22ab \\
/\text{wyo} & > \text{wyn}/ & : & /\text{kɔmtyn} > \text{kamdỳn}/ & BC 22ab \\
/\text{juur} & > \text{juur}/ & : & /\text{dduur} > \text{ttuur}/ & P 13ab \\
/\text{jum} & > \text{cum}/ & : & /\text{gmum} > \text{kmum}/ & BC 22bc
\end{align*}
\]

Included under this head are rhymes between syllables containing the high falling diphthongs, where regis-
tral contrast in the modern language is largely theoretical:

\[
\begin{align*}
/\text{criiék} & > \text{criiék}/ & : & /\text{pииěk} > \text{biiěk}/ & P 12ab \\
/\text{riiën} & > \text{ríiën}/ & : & /\text{rpiiën} > \text{rbiiën}/ & A 11de \\
/\text{diiët} & > \text{tíët}/ & : & /\text{canqíët} > \text{canqíët}/ & A 9g/10c \\
/\text{juue} & > \text{cúue}/ & : & /\text{tuue} > \text{tùue}/ & P 46c \\
/\text{puuën} & > \text{búuën}/ & : & /\text{sñuuën} > \text{sòue}/ & K 28g/29c \\
/\text{kuuac} & > \text{kùuac}/ & : & /\text{luuac} > \text{lúuac}/ & DK 29bc
\end{align*}
\]
In contrast with the foregoing examples, *phonological change* is here held to occur on the 
remaining levels of openness, notwithstanding 
course to such close transcriptions as /ée : èé/
and /öö : ơơ/ for modern Khmer. Any position taken 
this regard is perforce arbitrary, because of 
ambiguity in certain of the vowels.

Thus Middle Khmer /ée/ yields modern High 
Register /éé/ [eː ~ əː] and Low Register /èè/
e: ~ eː], the variability of which on the one hand 
permits such rhymes as /théēŋ : rëlïŋ/ (P 19ab) and 
the other tends to disqualify such original rhymes 
/wēh : srāmēh/ (A 9ab). The latter may be pro-
ounced [wǐh] and [srémēh] respectively.

Before final /h/, moreover, Middle Khmer /ée/
and /ëë/ were not in contrast, and continue to rhyme 
in the Low Register: /préôëḥ > próhaaëḥ/ : /biseēh 
pjesëh/ (PP 31ce), pronounced [préhēh] and 
pĩsēh] despite the phonemic transcription.

As for /öö/ and /ơơ/, these are respectively the 
High Register reflex of Middle Khmer /oo/ and the Low 
Register reflex of Middle Khmer /uu/, and show 
approximately the same range of openness as /ée : 
eé/. The development which has generated the back as 
well as the front pair is about as much (or as little) as that between modern /oo : œœ/ , both from 
Middle Khmer /òò/.

For our purposes, phonological change is manifested 
as parallel development, convergent development, and 
dergent development.

Parallel development is exemplified by the 
following rhymes, in which the original constituents 
syllable nucleus + optional final) change in the 
same direction and continue rhyming:

/pii > bèøj/ : /srii > srèøj/  
_P 52ab_

/gee > kée/ : /mee > mée/  
_KC 68ef_
Convergent development is exemplified by the following rhymes which involve a number of types of change which must have taken place before composition of the texts in which they occur:

(a) Replacement of an earlier /ɔ/ by /u/:
   /but > put/ : /rut > rlt/  
   /dhom > thum/ : /gumnum > kumnum/  
   /grup > krup/ : /lup > lwp/  
   /noorok > neeruk/ : /buk > puk/  

(b) The blending on the phonetic level of /-əw, -əj/ (represented by -au, -aɁ) with the modern Low Register reflexes of /-uuw, -ii/ (represented by -uva, -ʕa):
   /tew > tew/ : /pluuw > plɔow/  
   /sruuw > srdow/ : /qambeəw > qampəw/
/sɔmtli > səmdèej/ : /nəj > néj/  
S 9ab

/kjli > kəēj/ : /nəj > néj/  
DK 4bc

This type of rhyme, incidentally, belies the traditional view that -au and -ai represent a short nucleus + semivowel.

) The raising of /-oh/ to the level of modern High Register /-ôh/ [-oh ~ oeh]:

/rəh > ruh/ : /jmo̞h > cmóh/  
P 96ab

/dluh > tluh/ : /noh > nóh/  
DK 32d/33b

/noh > nóh/ : /rəh > ruh/  
DK 34ab

) The blending of modern /i/ with /ɨ/:  
/bryt > prɨt/ : /git > kit/  
BC 10ab

) The duplication of Middle Khmer /iːə/ by the High Register reflex of Middle Khmer /aa/:  
/conqiyet > conqɨiət/ : /braat > prɨiət/  
A 10ce

) The forward shift of stress and length in the High Register reflex of Middle Khmer /-aaj/:  
/ŋañj > ɲiəj/ : /ptiɪ > pdiəj/  
S 202a

) The lowering of Middle Khmer /u/ in the modern Low Register:  
/suh > soh/ : /krəqoh > kroqaoh/  
S 199c/200a

) The centralization and shortening of /ɔɔ/ in certain environments:  
/dhoɔr > thar > thoər/ : /sɔmgal > samkoəl/  
K 20ab
The muddling of vowel color before a palatal final:

/sac > sac/ : /bac > péec/  
                      P 7ab
/kpac > kbac/ : /srac > srac/  
                      A 7de
/srac > srac/ : /greek > kréec/  
                      BC 15ab
/meen > min/ : /srōlan > srōlan/  
                      KC 30ab
/ceen > cèen/ : /dīn > tīn/  
                      DK 5ab
/knān > knān/ : /dɔndan > tuntēen/  
                      S 66c/67a

Divergent development is exemplified by the following original rhymes which have since been disqualified or reduced to the status of eye rhymes by phonological change subsequent to composition of the texts in question:

/qombii > qampii/ : /ptii > pděej/  
                      S 4ab
/dheen > théen/ : /qεɛn > qaεɛn/  
                      P 22d/23b
/bryt > prýt/ : /sucɔrít > socarèt/  
                      KK 1ab
/dew > tèw/ : /klew > klaw/  
                      A 13ab
/nej > něj/ : /tлеj > tlaj/  
                      P 91bc
/praan > praan/ : /daan > tfiæn/  
                      DK 53bc
/span > sban/ : /gran > kroën/  
                      BC 27d/28b
/juur > juur/ : /qaasuur > qaas dor/  
                      S 197c/198a
/rūŋ > ruŋ/ : /quttuŋ > quťdōŋ/  
                      KK 12ab
Note the following forms with final /h/, where the development tends to be exaggerated:

/preh > prèh/ [prèh] : /rleh > rléh/ [rélíh]  
S 38ab

/quh > qoh/ [qòh] : /joh > cóh/ [tòh]  
P 26d/27b

/noh > nóh/ [ñoh] : /cuh > coh/ [tòh]  
DK 30ab

/khuh > khoh/ [khòh] : /joh > juh/ [jòh]  
P 50d/51b

The objection may always be raised that to the native or many of the above pairs still rhyme "in a sense." this connection it must be understood that rhyme a relative term and that it is only the question phonological change that interests us here.

It is not surprising, since they are all united, that the texts in question here show marked differences in the ratio of the four types of development just described. We should expect, a iori, that the earlier texts would reveal more divergent development than the later but less parallel and convergent development than the later. For divergent development manifests change away from middle Khmer and, inversely, distance from the present. Convergent development offers at most indices of phonological change down to the time of composition, but no such indices beyond that time; in a more rigorous sense, it must be regarded as rely one aspect of no change. Convergent development and no change alike provide only negative
information on limited sectors of the reorganizing vowel system. Parallel development, which perpetuates old rhymes in new guises, likewise provides negative information, though the frequency of parallel development in a series of texts shows definite increase with the passage of time. But the surest index of distance from the date of composition is the frequency of invalidated rhymes: divergent development.

It may be mentioned parenthetically that the Ker(ti) kāla, the Kūna cau and the krama have traditionally been regarded as "older cpā'pa." The Srī is usually attributed to the hand of King Ang Duong (1796-1859),13 while the Prusa is considered roughly contemporary. The 'Ariyasatthā has the general look of belonging to the early 19th century.

Computations of the kind referred to above call for no elaborate technique, but are not a little toilsome. Specifically, every single rhyme in each text must be accounted for and classified so that the total number of rhymes disqualified by divergent development can be expressed in terms of the total number of rhymes. The latter figure is also important in suggesting the relative reliability of the percentage obtained from it; thus a percentage based on the 380 rhymes of the Trīnetī would presumably be more valid than one based on the 154 rhymes of the Krama. The percentage of disqualified rhymes in a text may in any case be treated as a "rhyme factor" and used as the basis for arranging a series of texts in an order approximating their date of composition.

As to the basic method of analysis, this weighs the original metrical requirements against the
Modern reading of the text. To illustrate, the passage on pages 4 and 5 would be analyzed as follows:

<table>
<thead>
<tr>
<th>8ab</th>
<th>cpā'pa /cbap/</th>
<th>gā'pa /koep/</th>
<th>DD 14</th>
</tr>
</thead>
<tbody>
<tr>
<td>8ce</td>
<td>kroya /kraoj/</td>
<td>oy /qaoaj/</td>
<td>PD</td>
</tr>
<tr>
<td>8de</td>
<td>drabya /troep/</td>
<td>gā'pa /koep/</td>
<td>CD</td>
</tr>
<tr>
<td>8ef</td>
<td>oy /qaoaj/</td>
<td>ṭoya /daaoj/</td>
<td>PD</td>
</tr>
<tr>
<td>8g/9c</td>
<td>thāa /thaa/</td>
<td>suriyā /sorojaa/</td>
<td>PD</td>
</tr>
<tr>
<td>9ab</td>
<td>bhūrī /pīry/</td>
<td>ṛī /ryī/</td>
<td>NC</td>
</tr>
</tbody>
</table>

This is done, it is a simple matter to total the four types of rhyme and work out the percentages of each. Texts showing a higher rhyme factor (percentage of DD rhymes) must be considered of earlier composition than those showing lower factors; more precisely, the language of high-factor texts must be older than that of low-factor texts. The following table shows my findings so far. My seventeen texts are arranged by their rhyme factors, with the earliest texts first. Percentages of rhymes showing no change (NC), convergent development (CD) and parallel development (PD) are included with a view to showing their doubtful applicability.

<table>
<thead>
<tr>
<th>Text</th>
<th>number of rhymes</th>
<th>NC rhymes</th>
<th>CD rhymes</th>
<th>PD rhymes</th>
<th>DD rhymes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ker(ti) kāla</td>
<td>105</td>
<td>17.1%</td>
<td>0.0%</td>
<td>26.8%</td>
<td>52.3%</td>
</tr>
<tr>
<td>Kūna cau</td>
<td>328</td>
<td>21.4%</td>
<td>0.9%</td>
<td>25.7%</td>
<td>49.3%</td>
</tr>
<tr>
<td>Nājaneti</td>
<td>214</td>
<td>3.3%</td>
<td>4.2%</td>
<td>45.3%</td>
<td>47.2%</td>
</tr>
<tr>
<td>Krama</td>
<td>154</td>
<td>24.0%</td>
<td>1.3%</td>
<td>25.9%</td>
<td>45.4%</td>
</tr>
<tr>
<td>Hai maha-jana (I)</td>
<td>337</td>
<td>7.4%</td>
<td>5.0%</td>
<td>43.6%</td>
<td>43.9%</td>
</tr>
<tr>
<td>Kūna cau</td>
<td>297</td>
<td>11.1%</td>
<td>4.0%</td>
<td>43.1%</td>
<td>41.7%</td>
</tr>
<tr>
<td>Ipaśka (A)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vidhūra-pandita</td>
<td>225</td>
<td>2.2%</td>
<td>5.3%</td>
<td>51.6%</td>
<td>40.9%</td>
</tr>
<tr>
<td>Text</td>
<td>number of rhymes</td>
<td>NC rhymes</td>
<td>CD rhymes</td>
<td>PD rhymes</td>
<td>DD rhymes</td>
</tr>
<tr>
<td>----------------------</td>
<td>------------------</td>
<td>-----------</td>
<td>-----------</td>
<td>-----------</td>
<td>-----------</td>
</tr>
<tr>
<td>Panṭāṃ pitaś</td>
<td>295</td>
<td>11.2%</td>
<td>4.0%</td>
<td>44.4%</td>
<td>40.4%</td>
</tr>
<tr>
<td>Kūna cau īpāka (B)</td>
<td>127</td>
<td>8.7%</td>
<td>5.5%</td>
<td>45.7%</td>
<td>40.1%</td>
</tr>
<tr>
<td>Trīṇeti</td>
<td>380</td>
<td>2.9%</td>
<td>7.6%</td>
<td>50.0%</td>
<td>39.5%</td>
</tr>
<tr>
<td>Dūnmāna khlwana</td>
<td>175</td>
<td>25.4%</td>
<td>4.0%</td>
<td>28.6%</td>
<td>38.2%</td>
</tr>
<tr>
<td>Bākya cā'sa</td>
<td>97</td>
<td>8.2%</td>
<td>5.2%</td>
<td>48.5%</td>
<td>38.1%</td>
</tr>
<tr>
<td>Hai mahā-jana (II)</td>
<td>324</td>
<td>5.5%</td>
<td>12.1%</td>
<td>44.4%</td>
<td>37.9%</td>
</tr>
<tr>
<td>Panṭāṃ 'ū buka</td>
<td>291</td>
<td>11.3%</td>
<td>4.5%</td>
<td>46.7%</td>
<td>37.5%</td>
</tr>
<tr>
<td>Dūnmāna kūna</td>
<td>251</td>
<td>5.6%</td>
<td>6.8%</td>
<td>51.8%</td>
<td>35.9%</td>
</tr>
<tr>
<td>Srī</td>
<td>579</td>
<td>26.5%</td>
<td>2.1%</td>
<td>41.8%</td>
<td>25.0%</td>
</tr>
<tr>
<td>Prusa</td>
<td>298</td>
<td>11.0%</td>
<td>9.6%</td>
<td>58.5%</td>
<td>21.8%</td>
</tr>
<tr>
<td>'Ariya-sattha</td>
<td>194</td>
<td>13.4%</td>
<td>7.1%</td>
<td>68.5%</td>
<td>10.8%</td>
</tr>
</tbody>
</table>

It will be self-evident that this laborious but essentially simple technique tells us nothing regarding the calendar date of our seventeen texts. Yet we may, in time, be able to fix the date of metrical texts with some exactitude by adjusting the method to two or more reference points or by comparison with texts outside the apā'pa genre.16

The main weakness of this type of analysis is it tacit assumption, well nigh inescapable, that poets in successive periods employ language having precisely the same liability to phonological change. Note that while the percentages for PD rhymes in the above table generally increase as we move forward in time, the percentages for NC and CD rhymes exhibit no perceptible order, even when added together. It may be that this random quality is a reflection of the liability
st mentioned and expresses the chance that one poet
y use more rhyming words with voiced initials, or
re rhyming words with voiceless initials, than
other.

* My sincere thanks go to Mme. S. Lewitz for
ading an earlier version of this paper and making
uable suggestions for its improvement. For its
ults I alone am responsible.

1 Vid. Saveros Lewitz, "Textes en kmer moyen:
scriptions modernes d'Angkor 2 et 3," in BEFEO,
II (1970): 99-126; "Inscriptions modernes d'Angkor
5, 6 et 7," in BEFEO, LVIII (1971): 105-23;
scriptions modernes d'Angkor 1, 8 et 9," in BEFEO,
X (1972): 101-21; and "Inscriptions modernes
Angkor 10, 11, 12, 13, 14, 15, 16a, 16b, et 16c,"
BEFEO, LIX (1972): 221-49.

2 It should be noted that the texts I have been
king with are modern, supposedly critical, edi-
sions transcribed from palm-leaf manuscripts but
justed to conform with the official orthography
roduced with the first edition of the
cananukrama khmêra in 1938 and 1943. This adjust-
t, far from militating against reflection of the
nguage at the time of composition, points up the
ological growth at issue. Apart from a normal
ount of garbling and innovations attributable to
cessive copyists, the original rhymes have not
en tampered with. Moreover, since these are
tactic texts wherein the content is of more con-
quence than the art, there is no reason to postu-
te willful archaizing on the part of their authors;
ince they are texts meant to be chanted and learned
ote, there is no reason to allow for the possi-ility of eye-rhymes.

3 Saveros Lewitz, "La toponymie khmère," in

4 Mindful that the devoicing of the old voiced
ops cannot be dated with precision and wishing to
s the maximum possible contrast between Middle
mer and modern forms, I arbitrarily note voiced
ops in the Middle Khmer examples given hereafter.

5 Unlike my colleagues of the School of Oriental
id African Studies, I mark the register only of
ewise ambivalent nuclei, using the acute for High
cond) Register, the grave for Low (First) Register.
A reconstruction of the Middle Khmer vowel system is given in my "The Development of the Registers in Standard Khmer," Table 1, to appear in Pacific Linguistics.

The passage is from the Cpa'pa kûna cau, stanza 8 and part of stanza 9: "These words form a code [of conduct] / Which trains to fit [into society] / children and grandchildren to come. / [Your] father has no wealth / [or] aught fit to pass on / save these words, which follow / the sacred Pâli in saying: // Wisemen say that fire is bright / indeed, but / is not equal to the Sun ..." My transcription is phonemic. The consonantal change seen in /c[pap] > c[cbap]/ and the non-change seen in /dooj > d[daoj]/ involve the modern preglottalized voiced stops, which pattern with Low Register nuclei but do not otherwise have a bearing on the problem at hand. Since this paper is concerned exclusively with rhyme and phonological change, I do not gloss any of the forms cited hereafter.

This special development, which seems to have come about through a conscious reinterpretation of Sanskrit and Pâli loans in which tonic /e/ is followed by two consonants, is being studied and will be reported separately elsewhere.

In the lists to follow, the first member of each pair between slants is the hypothetical (vid. note 4) Middle Khmer form while the second is the modern form developed from it.

Such rhymes as this suggest that final /-r/ had already been reduced to zero by the time of composition; other rhymes opposing final /-r/ with final /-l/ suggest that such reduction was incomplete.

For the seventeen Cpa'pa with which this paper is concerned the following abbreviations are used: A = 'Ariyasatthâ, BC = Bâkya cã'sa, Dk = Dûnmâna kûnâ, DK = Dûnmâna khlwna, HM I = Hai mahâjana I, HM II = Hai mahâjana II, K = Krama, KC = Kûna cau, KCL = Kûna cau lpo'ka, KK = Ker(ti) kâla, P = Prusa, PP = Pântâm pitâ, PUB = Pântâm 'û buka, R = Râjânetī, S = Srî, T = Trîneti, V = Vidhûrâpândita.

As noted previously, /aa : aa/ rhymes are classed with parallel development because the vowel in question shifts from the central position of Old and Middle Khmer to the typically fronted position of modern Khmer.

This attribution appears to overlook the fact that strophe 222 assigns the Cpa'pa srî to a high-ranking mandarin by the name of Mai, who is perhaps
be identified with the *pañāṭita* Mai of the *Cpā'pa* *sa* (strophe 96).

NC = no change; CD = convergent development; PD = parallel development; DD = divergent development.

There are two distinct texts entitled *Hai māhājanā*. I mark the earlier as I, the later as II. *Kūna cau l̄pokā* is a composite work, its first part (A) consisting of a version of the *Paṇṭāṃ pitā*, its second (B) consisting of a version of the *Bākya sa*. I have analyzed these two parts separately in order to show how minor textual differences can be reflected in the rhyme factor. The implication is that "composition" of the *KCL* is somewhat later than that of the *BC*, the place of which in the table is therefore questionable and indicative of textual change.

It may be worth reporting here that some weeks after the original version of this paper was completed I had the opportunity to analyze the only other Middle Khmer metrical text available to me. This is the engaging *grande inscription d'Angkor Vat*, as Aymonier called it, registered as K.301 and published as No. 38 of the *Inscriptions modernes d'Angkor*, 2ème Edition (Phnom-Penh: Institut Cambodgien, 1958), 95-111. This text of 493 rhymes in three different meters carries the year 1623 *śaka d. 1702* and yields a rhyme factor of 42%; this places it immediately after the *Hai māhājanā I* and the "older *cpā'pa*" and immediately before the first edition of the *Kūna cau l̄pokā*. Such a high factor means specifically that 42% of the original rhymes of this text have been invalidated by regular phonological change in the course of only two centuries.