

THE TRANSCRIPTION OF SANSKRIT K AND KH
IN CHINESE

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AM: *Asia Major*.

AOH: *Acta Orientalia Hungarica*.

BSOAS: *Bulletin of the School of Oriental and African Studies*.

CYYY: Chung-kuo chung-yang yen-chiu yüan, Li-shih yü-yen yen-chiu
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HJAS: *Harvard Journal of Asiatic Studies*.

JA: *Journal asiatique*.

M.: Middle Chinese, transcribed according to the system published in Pulleyblank 1962 with the following typographical modification: *â* for *a*. This system must be regarded as provisional. I hope soon to be able to publish a revised system based on the same kind of two-term close/open vowel pattern as that postulated for Old Chinese in Pulleyblank 1963.

T.: *Taishō Tripitaka*.

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I

Among the interesting observations made by B. Csongor (1949) in his study of Chinese in Uighur script of the T'ang period was that in Middle Chinese (T'ang period) all Chinese guttural initials (plosives and fricatives) were represented by *hēth* (x) before velar, and *kāph* (k) before palatal vowels. This is like the usage in writing native Uighur words, which have *kāph* in palatal and *hēth* in velar words, but contrasts with the usage in writing Sanskrit glosses, which have *kāph* everywhere regardless of the adjacent vowel. Moreover, he points out, later Uighur spellings of Chinese words from the Sung and Yüan periods have *kāph* everywhere, like the Sanskrit glosses.

Csongor naturally correlated this with Karlgren's distinction between yodized and unyodized initials. The correspondance is not quite complete because "pure" Division IV rhymes (e.g. 先 M. -en, K. -ien), of which the *Ch'ieh-yün* initials fall into the unyodized group, must be classed with Division III as having palatal initials in Uighur script; but this can easily be accounted for as a development later than the *Ch'ieh-yün*. We know that the "pure" ("unyodized") Division IV rhymes were tending to be confused with Division IV of the mixed Division III/IV rhymes (e.g. 仙 M. -ien/yen, K. -jān) already at the time when the *Ch'ieh-yün* was compiled. The distinction between rhymes -en and ien/yen is singled out for special mention in Lu Fa-yen's preface, no doubt because it caused special difficulty and we are told that this was one of the distinctions that was found irksome by poets of the early T'ang period (*Feng shih wen-chien chi chiao-chu* 2, p. 12). By the mid-T'ang period as represented by Hui-lin's glosses, "pure" Division IV and "yodized" Division IV had completely merged.

Csongor returned to the question in 1962 in a short article in which he showed that Uighur texts in Brahmi script render Chinese gutturals in a similar fashion. They have *k* for Chinese *k* in Divisions III and IV but *q* for Chinese *k* in Divisions I and II. Though the doubled *kka* in Brahmi script was not strictly a new sign as Csongor implies, since (as H. W. Bailey informs me) it is also used for Central Asian Sanskrit and Tocharian, its use in Turkish was a special device to render their back velar *q*. Csongor concluded that Chinese in the T'ang period must have had correspondingly two kinds of guttural initials. Chinese transcriptions of Turkish show a corresponding treatment of the Turkish gutturals. Thus we have 可汗 M. *khā'-hān* = *qayan*, 達干 M. *dāt-kān* = *tarqan*, but 尉都健 *juēt-tou-kjān* = *ötükān*, 闕 M. *kjuāt* = *kül*. The earlier and later transcriptions of the name Qyrqyz are of interest. In the *Chou shu* and *Sui shu* we find 契骨 M. *khet-kuēt* and in texts relating to early T'ang we find 結骨 M. *ket-kuēt*. When the Qyrqyz became prominent in the 9th century however new transcriptions were adopted: 憂憂斯 M. *kaēt-kaēt-sie* or 黠憂斯 M. *hāet-kaēt-sje*. This is no doubt because by that time "pure" Division IV *ket* or *khet* of the *Ch'ieh-yün* period had become *kyet*, and *khyet* and their initials were no longer suitable to represent the back velar *q* of the Turkish.

There can be no denying the significance of Csongor's observations. Chao Yuanren (1940) showed quite convincingly that Karlgren's "yodized" initials do not need to be treated as separate phonemes in the *Ch'ieh-yün* system. Nevertheless it seems clear that there were markedly different, more palatal, allophones of *k-*, *kh-*, *h-* (evidence about *ŋ-* seems to be lacking) before the various semi-vowels which are included in Karlgren's -i-. This helps to explain a number of other phenomena in Middle Chinese phonology.

In the first place it makes more comprehensible the evolution of the Old Chinese voiced velar stop **g-* (K. *g'-*) which gave Middle Chinese *h*

(K. γ) in the rhymes of Divisions I, II and "pure" IV, but Middle Chinese g - (K. g' -) before $-i$ -. This is precisely parallel to the situation in Turkish, where there are front and back velar unvoiced stops (k , q) but in the corresponding voiced pair a front stop (g) and a back fricative (γ).

II

It will also enable one to account for a notable characteristic of Chinese transcriptions from Prakrit and Sanskrit which has gone curiously unremarked, that is the great predominance of "yodized" syllables used to represent Indian velar stops. This is strikingly illustrated by the way in which the very common syllables ka , $kā$, kha , $khā$ are represented. As is well known there are two special characters 迦 M. $kjā$ and 佉 M. $khjā$ used only for this purpose and never found in ordinary Chinese. It seems obvious that these characters were devised in order to represent sounds which did not otherwise occur in Chinese. The fact that for other sounds quite ordinary characters were divested of their meanings and used for their sounds alone shows that there was no disposition to mark transcription characters as such by any graphic device.

One cannot account for the special characters for $kā$, $khā$ in terms of the foreign vowel sound. This is shown on the one hand by the fact that the characters in question were used indifferently for both short and long vowels, in spite of the fact that short and long a in Sanskrit differed markedly in vowel quality as well as in length. (Short a was more centralized [ʌ], long $ā$ more open.) This is true even in *dhāraṇī* texts of Sui and T'ang times which scrupulously distinguish short and long vowels by the tones - level for long vowels, oblique for short, e.g. 夜 M. $ya\` = ya$ but 邪 M. $ya = yā$ in Jñānagupta's version of the Lotus *dhāraṇī* (T.1337). The same text writes 迦 for both ka and $kā$, but marks the former as *shang* ("rising" tone). This could be illustrated by many more examples but the principle is well known and does not need to be demonstrated further.

Furthermore there was no difficulty in representing Sanskrit a , $ā$ after other initials. The general rule was to use words in the *Ch'ieh-yün* rhyme 歌 M. $kā$ (including the *ho-k'ou* rhyme 戈 M. $kuā$ which was separated from it in the *Kuang-yün*). Thus we have 阿 M. $\cdot ā = a$, 羅 M. $lā = la$, 磨 M. $mā = ma$, 和 M. $hwā = va$, etc. When no words existed in this rhyme with appropriate initials, rhyme 麻 M. ma was used instead, e.g. 余 M. $śja = śa$, 沙 M. $śa = śa$, 茶 M. $ḍa = da$. There were plenty of words available with initials k and kh in both these rhymes. The fact that they were not normally used can only be explained if we suppose that Chinese k -, kh - in these rhymes were too far back and too dark in acoustic quality to seem appropriate to the Indian sounds.

Something should be said about the correct Middle Chinese readings of 迦 and 佉. They are naturally not included in *Grammata Serica* which in

principle is confined to words which occur in pre-Han texts. *Analytic Dictionary* gives the reading ka for 迦, but has $k'ja$ for 佉 and $g'ja$ for 伽, the transcription character for ga , gha . It is not at all clear on what these latter two readings are based. They imply that the words belong to rhyme 麻 ma , but in fact all three words appeared in the *Ch'ieh-yün* in a small group at the end of rhyme 歌 $kā$. Karlgren's readings seem to be based on an arbitrary assumption that this rhyme could not properly have Third Division words, for which he had made no provision in his system. Chao Yuanren (1940) tacitly corrected Karlgren's readings to $jā$ as required by the rhyme but it is not certain whether Karlgren would have accepted this, since it violates his general principle that $ā$, as opposed to a (regarded as being more palatal), could not occur after yod .

If it were only a question of these transcription characters one might regard it as of no real importance from the point of view of Chinese phonology but there are in fact a few actual words which fall into the same rhyme category. The principal ones are 茄 M. $giā$, Peking *ch'ieh*, "eggplant" and 靴, 鞞 M. $hiwā$ (read as $xiwa$ in *Analytic Dictionary*), Peking *hsüeh*, or *hsü* "boot". Li Jung (1952, p. 135) has shown that the latter rhymed in poetry with $ā$ rather than a in an example found in the poetry of the Emperor Chien-wen of Liang (550-51), who otherwise keeps these rhymes strictly apart. On the other hand the Peking reading and the modern pronunciation in other dialects make it clear that these were Division III words. One cannot avoid setting up a category $-jā$ for Middle Chinese, even if there were very few words in it. There were no ordinary words in k - or kh - in this category but the existence of $giā$ and $hiwā$ made it possible to construct such syllables analogically and to make up characters to represent them.

In Modern Pekingese 迦 is conventionally read as *chia* which would imply a Middle Chinese ka , like the reading which is given in *Analytic Dictionary*. Such a reading is in fact found as an alternative to $kjā$ in the *Kuang-yün* and this was no doubt Karlgren's justification in giving such a reading. Nevertheless there can be no doubt that $kjā$ is correct and that the other pronunciation only came into being because there was no support for the true reading from a living word in the language. Similarly 佉 M. $khjā$ is nowadays read as *ch'ü*, taking the pronunciation of its phonetic 去. 伽 M. $giā$, on the other hand, is given the true expected pronunciation *ch'ieh*, since it had the support of its homophone, the word for "eggplant".

When one once begins to look into the question it soon becomes overwhelmingly obvious that Division III words were normally chosen to represent Sanskrit or Prakrit k and kh in other syllables as well, and that this was so from the earliest days right up to and through the T'ang period. One finds, for example, innumerable cases of 羯 M. $kiāt$ (Karlgren $kjet$) for *kat*- or *kar*-, 鴉 M. kju (K. $kjau$), 俱 M. $kjou$ (K. kju), 矩 M. $kjou$ for

ku, 僑 M. *kjeu* (K. *kjäu*) for *kau*, etc., etc. Occasionally there is an ambiguous situation as when we find the character 拘 which can be read either as M. *ku* (K. *kəu*) or as M. *kjou* (K. *kju*), but the general pattern is so clear that there is no difficulty in choosing between the alternatives.

Rather it is the exceptional cases, where we find other types of syllables used to represent Indian *k* and *kh*, that are of most interest and that require explanation.

III

One such exception, which conforms exactly to Csongor's observations, is the use from about the beginning of Sui and T'ang onward of "pure" Division IV words to write *ke*, *khe*. According to my observations "pure" Division IV words are extremely rare in the early transcriptions but become common about the beginning of T'ang. A good example of the change in practice is found in the versions of the *dhāraṇī* of the Lotus Sutra of Jñānagupta (T.264, T.1337) and Hsüan-tsang (Hsüan-ying, *I-ch'ieh-ching yin-i* 6) from the early sixth century. There we find 雞 M. *kei* (K. *kiei*) for *ke* in *ukke mukke* but in the earlier version by Kumarajiva (T.262) we find 积 M. *kye* (K. *kjie*) in the same position. In this we can see the evidence of a phonetic change taking place in Chinese which we have already had reason to postulate on quite other grounds.

IV

The rare cases in which we find Division II words used to represent syllables in *kā* are of great interest. Except for a few cases in which 加 M. *ka* is obviously simply a corruption of 迦, I have found this only when the following consonant is *ʃ* or *kʃ*. Thus, for *dantakāṣṭha* we have 憐哆家瑟訶 (*dān-tā-ka-ṣjit-ṭha*) (I-ching, *Nan-hai chi-kuei nei-fa chuan* 1, T.2125 v. 54, p. 208c) and 那哆家瑟訶 *nā-tā-ka-ṣjit-tā* (*Fan-yü tsa-ming* 48a in Bagchi 1926, p. 95). A very familiar example, found from the earliest period onward, is the common transcription of *kāṣāya*, the monk's robe, 袈裟 M. *ka-ṣa*. Here, we again have characters which do not occur in any other context but in this case it seems clear that the cloth radical is added to both characters simply as an additional signfic and without any implication of a special pronunciation. 袈 is treated in the *Kuang-yün* as a homophone of 加 and, as far as I can discover, is never read in any other way. A third example that I have found is in the *Mahāmāyūri* as translated by Sanghabhara (or Sanghavarman?) (T.984, Levy 1915) where we find 倚哥覺叉 *ye-kā'-kauk-tṣha* = Ekakakṣe. (I shall comment below on the irregular use of a first division syllable for the first *ka*.)

The association of Division II syllables with retroflexion is quite mystifying if we accept Karlgren's definition of the distinction between the vowels of Divisions I and II in terms of "ā-grave" and "a-aigu". A more

palatal vowel would be entirely inappropriate before *ʃ*. Recent discoveries by S. Yakhontov and myself have however pointed the way out of the dilemma. Yakhontov 1960 argued that Division II in Middle Chinese could be associated with the loss of "l" in initial clusters. I came independently to the same conclusion (Pulleyblank 1962) but I have successively modified my view of the situation as follows: (1) It soon became clear on comparative grounds that the lost consonant was *r, not *l. (*r gave Chinese l when it survived in initial position - Sino-Tibetan *l has other reflexes in Chinese.) This is consistent with the fact that the retroflex affricates and fricatives (*tʃ*, *tʃh*, *dʒ*, *ʃ* and *ʒ* (rare)) are exclusively found in Division II in the rhyme tables. (2) To explain *hsieh-sheng* pairs like 京 M. *kjāŋ* 涼 M. *liāŋ* Yakhontov assumed that medial -l- (read: -r-) could exist before *j*. He did not however associate this with reflexes in the rhyme part of the syllable. In 1962 I argued that one could in fact do so, at least in certain rhyme categories. We were however in agreement on the essential point: that there were two types of words with initial consonant and liquid clusters. One could write them CRV- and CRlV-, where C stands for any consonant, R for liquid, l for *yod*, and V for vowel. (3) In 1963, arguing mainly from structural analogies between the types of rhymes with -r- and -y-, I proposed to reinterpret these two types by reconstructing sonants before and after the nucleus, thus: CVR-, CRV-, the definition of R being now extended to include *y* (and possibly *w*). I was able to adduce some direct supporting evidence from Han dynasty transcriptions and also to suggest in a tentative way how one might account for the phonetic evolution of Division II rhymes from Old to Middle Chinese. I still did not however depart essentially from Karlgren's interpretation of the actual phonetic value of the Division II vowel for the *Ch'ieh-yün* period.

The evidence now brought forward (and further evidence to be discussed below) indicating that Division II was associated with retroflexion even at the time of the *Ch'ieh-yün*, now indicates that this was too conservative. Evidently the characteristic feature of Division II was not fronting but was retroflexion, not only when the initial was itself retroflex but with all initials. Instead of *ā* (implying [æ] or [ɛ]), one can write (in accordance with I.P.A. principles) *aɣ*, or even *ar*. In other words, the consonantal *r* which we reconstruct for Old Chinese had not really been lost at all in *Ch'ieh-yün* Chinese. It has ceased to be a discrete consonantal element but it has spread as a blend into the vowel. In the case of sibilant initials it has spread into the initial also, so that *sar-* becomes *ʃar-* (also *srə-* > *ʃrə*). The same thing happened more slowly with the alveolar stops. In the *fan-ch'ieh* of the *Ch'ieh-yün* (as distinct from the *Kuang-yün*) and in other *fan-ch'ieh* of the early T'ang period retroflex *ʃ* is not sharply distinguished from alveolar *t*, but by mid-T'ang this change had been completed.

In the case of Middle Chinese ξ and $t\text{ʃh}$ the story is a little more complicated, since, as I have shown elsewhere (1962, 128 ff.) it is probable that they had a double origin in Old Chinese. In part they reflect, not an $-r-$ in the syllable, but initial clusters which I reconstructed provisionally as $*\text{ŋh}$, $*\text{skh}$. I now suspect that $*\text{ks}$, $*\text{khs}$ may be a better reconstruction – cf. 殺 M. ʃaət “kill”, Tib. *gsod-pa*. Whatever may be the Old Chinese form, one has to suppose that the retroflex initials resulting from the cluster induced a retroflexion in the following vowel, so that $\text{ʃar-} < *\text{ksa-}$ coincided with $\text{ʃar-} < \text{sar-}$.

If this represents the true picture in Division II words in Middle Chinese, we can readily see the reason for the use of M. ka (= kar) to represent $kā(\text{ʃ})$. Evidently the dark quality of the following retroflex consonant was so marked that the Chinese preferred to use a retroflex vowel to represent it, even though it meant also using their back velar k- , rather than the more fronted $\text{k}(\text{i})$ which was normally regarded as appropriate to the Indian consonant. It is extremely interesting to find that for $kā\text{śāya}$ Hui-lin gives as the ‘correct’ form 迦羅沙曳 M. kjā-lā-ʃa-yei , with the normal spelling for Sanskrit ka followed by an intrusive $-lā-$ which has no justification except to replace the retroflexion in the syllable before $-ʃ-$ that had been expressed by the Division II speller. (See T. 2128, v. 54, p. 339c). It is noteworthy that this anticipation of a following retroflexion only occurs before $-ʃ-$, occasionally before $-k\text{ʃ-}$. It would seem that ξ was accompanied by a greater spread of retroflexion than the other retroflex consonants.

The Japanese scholar Mizutani Shinjō has recently (1960) quite independently shown an association between Division II (and also Division III of mixed Division III/IV rhymes) and the representation of Sanskrit retroflexion (making use of the articles of W. S. Allen on the prosodic nature of retroflexion in that language). He has used for this purpose four versions of the *dhāraṇī* of the Lotus Sutra, two due to Jñānagupta (end of 6th century), one to Hsüan-tsang (early 7th century) and one to Amoghavajra (mid 8th century). In such material of course there can be no doubt whatever that we are dealing with attempts to represent Sanskrit sounds as accurately as possible in Chinese. In many cases special *fan-ch'ieh* spellings are given to ensure the right pronunciation. Mizutani has gathered together and analysed all the syllables representing Sanskrit retroflex consonants followed by the vowels a , e , i . The overwhelming predominance of Division II words or Division III of mixed rhymes in both transcription characters themselves and the *fan-ch'ieh* used to spell them is very striking. It is not necessary to reproduce his whole discussion but I should like to comment on certain salient features with particular reference to the transcriptions due to Jñānagupta.

It is of course not surprising to find that Division II words are used when the initials desired are found only there – hence 沙 M. ʃa , 茶 M. ʃa , etc., common transcription characters from the 2nd century A.D. onward. More significant are some of the special *fan-ch'ieh* spellings used to give pronunciations which could not be readily represented exactly by existing Chinese words. This is particularly noticeable with the vowel e . As we have already seen above, the normal way at this period of representing e after non-retroflex initials was by rhyme 齊 M. $-\text{ei}$ (K. $-\text{iei}$), e.g. 雞 M. $\text{kei} = \text{ke}$, 抵 M. $\text{tei} = \text{te}$, 泥 M. $\text{nei} = \text{ne}$, 迷 M. $\text{mei} = \text{me}$, 黎 M. $\text{lei} = \text{le}$, 鞞 M. $\text{bei} = \text{ve}$, 西 M. $\text{sei} = \text{se}$, 隴 M. $\text{hei} = \text{he}$. Retroflex initials were not found in this rhyme and instead recourse was had to the Division II rhyme 皆 $-\text{a}\text{ei}$ (K. $-\text{ai}$), e.g. 諫 M. $\text{ʃa}\text{ei} = \text{te}$. This is a rare character but is found in the *Ch'ieh-yün*. The special *fan-ch'ieh* 都皆 $\text{tou-ka}\text{ei}$ is sometimes added. No daei or naei existed, so to represent de or ne , special devices had to be adopted. In some instances de is written with 第 M. dei with the special *fan-ch'ieh* 徒皆 M. $\text{dou-ka}\text{ei}$. It is highly significant that the retroflexion is not indicated by the initial, which is an ordinary alveolar, but by the rhyme. This agrees with other evidence that the distinction between alveolar and retroflex stops had not become fully phonemic at the time of the *Ch'ieh-yün*. Another way of writing de was by means of 茶 (normally read M. ʃa) with the addition of the same special *fan-ch'ieh*. The syllable ne was written with 孃 M. nae (rhyme 佳) with the addition of the special *fan-ch'ieh* 奴皆 M. $\text{nou-ka}\text{ei}$ to give the reading naei . For te we also have 書, a rare character for which the *Ch'ieh-yün* gives the reading dzei . Here however it must simply be an alternative way of writing 諫, since it has the same added *fan-ch'ieh* 都皆 M. $\text{tou-ka}\text{ei}$, indicating a reading $\text{ʃa}\text{ei}$.

The spellings of $k\text{ʃ-}$ are of great interest. For $k\text{ʃa}$ the most common equivalent is 叉 M. $\text{t}\text{ʃha}$ or $\text{t}\text{ʃhae}$. This in accordance with the practice from the earliest transcriptions onwards. It is, I suppose, generally assumed that this is merely a sound substitution but it is remarkable that the syllables employed for the purpose in the early stages are mostly those in which I wish to reconstruct Old Chinese $*\text{khs-}$. That is the *hsieh-sheng* series to which they belong have ʃ- , $\text{t}\text{ʃh-}$, sometimes h- , s- , ŋ- , but very rarely $\text{t}\text{ʃ}$, dz . Thus from transcriptions of the early period:

刹 M. $\text{t}\text{ʃha}\text{ət}$, used for $k\text{ʃet-}$, $k\text{ʃat-}$: 殺 M. $\text{ʃa}\text{ət}$, 擗 M. sāt .

鼻 M. $\text{t}\text{ʃhan}$ or $\text{t}\text{ʃhaən}$, used for $k\text{ʃān}(\text{ti})$: 羴 M. haən , 鮮 M. ʃien .

闕 M. $\text{t}\text{ʃhju}\text{k}$ ($< -p$), used for $-k\text{ʃo}(\text{bhya})$: 众 M. ŋjim , 震 M. $\text{ŋa}\text{ei}$, ŋjim .

叉 M. $\text{t}\text{ʃha}$, $\text{t}\text{ʃhae}$, has few derivatives; apart from ones with the same initial the *Kuang-yün* has only 叉 M. thae .

This suggests that in the 2nd and 3rd centuries (and possibly later) Chinese may still have had khs- or $\text{kh}\text{ʃ}$ in such words rather than $\text{t}\text{ʃh}$. By

the time of the *Ch'ieh-yün* it must have merged with **tsh** < **tshr**, **tsh-r**. It is interesting to note that in one case Jñanagupta gives a special *fan-ch'ieh* for 刹 M. **tshaet**, used for *kṣa(ni)*, namely 駝察 M. **khjou-tshaet**, apparently implying **kshaet**.

For *kṣi*, *kṣi* (*kṣe* does not happen to occur in the material) Jñanagupta employs syllables with initial **kh**, but always with Division III of mixed Division III/IV rhymes, thus: 器 M. **khji** and 綺 M. **khje** for *kṣi*, 鞞 M. **khje** for *kṣi*. Note also 憇 M. **khjay**, with the special *fan-ch'ieh* 敬債 M. **khje-tṣae** for *kṣa(y)* in *kṣaye*, *akṣaye*, *mantrākṣayate*. This is extremely interesting as it shows that Division III in such cases also had a retroflex semivowel and confirms the view that this class of syllables, as well as Division II, reflects Old Chinese **-r**. Again we find confirmation in special *fan-ch'ieh* to indicate **-i** after other retroflex initials, e.g. 稚 M. **dji**, spelt 徒寄 M. **dou-kje**, for *di*, 膩 M. **nji**, spelt 奴寄 M. **nou-kje** for *ni*, 致 M. **tji**, spelt 都寄 **tou-kje** for *t(y)* (= *l(y)*) in *nrtye*. This agrees with the evidence given in Pulleyblank 1962, pp. 111-112 about the *fan-ch'ieh* spellings in the *Ch'ieh-yün* of words with retroflex initials.

The special *fan-ch'ieh* 楚我 M. **tshjo'-ṅā'** for 又 = *kṣa* in T.1337 is anomalous since it gives a retroflex initial with a Division I rhyme. It is the reverse of what we have observed in the spellings of *de*, *te*, etc., where an alveolar initial is combined with a retroflex rhyme. It seems to confirm the view that the retroflex sibilant and affricate initials were fully phonemic, while the retroflex stops were not at this period. Evidently a Chinese retroflex **tsh-** was in itself sufficient to express the retroflexion in *kṣa*, but in *te* and *de* the only way to ensure that it was expressed was through the rhyme.

I shall not pursue here further the question of revising the reconstruction of Middle Chinese in the light of the new insights we have gained into the nature of the distinctive features present in what were later analysed by Chinese phonologists as Divisions II and III. I merely want to draw attention to the striking agreement with what has already been proposed about the source of these distinctive features in Old Chinese. It is also interesting to note the possible confirmation we find for the theory that sonants could occur after the nucleus as well as before it.

Though I wish to acknowledge Mizutani's perspicacity in noting the relation between Divisions II and III and the representation of Sanskrit retroflexion, I cannot agree with all his conclusions. He regards rhyme 佳 M. **ae-** (K. **-āi**) as the normal equivalent of Sanskrit [ax] and rhyme 麻 M. **a**, as non-retroflex. As far as I can see this distinction is not supported at all by his evidence. Rhyme 麻 is as frequent or more frequent in representing retroflex syllables.

V

Finally it must be noted that there were transcribers who departed altogether from the usual pattern in representing Sanskrit *k* and *kh*. Thus in the version of the *Mahāmāyūri* by Sanghabhara (Sanghavarman?) (Levy 1915) Division I words are normally used for this purpose, e.g. 柯, 譌 M. **kā**, 罽 M. **kā'**, 个 M. **kā**, 甘 M. **kām**, 干 M. **kān** 高, M. **kāu**, 鉤 M. **ku**, 割 M. **kāt**, 珂 M. **khā** 看 M. **khān**, etc., etc. Division III words are found only for *ki*, *khi* and the like, except in a few well known names such as Kapilavastu, Kalinga, Kauśalya, etc., where the translator has evidently taken over well-established forms from his predecessors rather than transcribed directly.

It seems evident that we have to do with a dialect phenomenon. Sanghabhara was a native of Funan (Cambodia) born in 460 A.D. who came to China and lived at Nanking, the capital of the southern dynasties. He worked under Southern Liang from 506 to 520. It is significant that we find similar features in the *Pu chih i lun* (T.2033) translated by Paramārtha, an Indian from Ujjayini who came to South China via Fu-nan in the middle of the 6th century. For example, we find 阿輸柯 M. **·ā-śjok-kā** = Aśoka, and a number of other examples of the same character for *ka*. In 高俱胝柯 M. **kāu-kjou-tji-kā** = Kaukuṭikāḥ, we have Division I syllables for *kau* and *kāḥ* but a Division III word for *ku*. A thorough examination of different transcription systems used in the period between Han and T'ang would no doubt reveal a great deal about regional varieties of speech during those centuries and might throw light on the later development of dialects.

VI

What are the implications for Chinese historical phonology of the discovery that there were markedly fronter and backer allophones of the velar initials in Middle Chinese? This question has far-reaching ramifications. It may have a bearing for example on the question of the final velars also. Is the allophonic difference in Middle Chinese to be regarded as a purely phonetic phenomenon - a speech habit, perhaps influenced by contiguity with speakers of languages like Turkish? Or does it perhaps reflect a stage in the merging of distinct velar and uvular phonemes? These problems must be left aside for the moment. I also leave aside the question of the implications of the new insights we have gained into Middle Chinese phonology for the subsequent history of the language.

Meanwhile the present enquiry has shed light at a number of points on the history of Chinese speech sounds. It may serve as an illustration of the valuable, indeed indispensable, part the study of transcriptions has to play. It is not that the way the Chinese transcribed foreign words or the way foreigners wrote Chinese give us direct information about the phonetic values of Chinese phonemes. We can expect no more than a best fit, the nearest approximation possible between two distinct phonemic systems. But

the way in which such matching was done can often then be used to suggest solutions to problems about the phonology of one language or the other, or to test hypotheses suggested on other grounds.

ADDITIONAL NOTE

The theory advanced in this article about the front and back allophones of the velar stops provides an explanation for a puzzling use of the terms "back tooth sounds" (*ya-sheng* 牙聲) and "throat sounds" (*hou-sheng* 喉聲) found in the anonymous *Pien tau wu yin fa* 辯字五音法 prefaced or appended to editions of the *Yü-p'ien* 玉篇 and appended to the *Kuang-yün*. In the standard classification of the "36 initials" attributed to Shou-wen 守溫 (late T'ang) which we find in the rhyme tables, the *ya-sheng* are the velar stops - *k*, *kh*, *g* - and the nasal *ŋ*, and the *hou-sheng* are the glottal stop, the voiced and unvoiced fricatives *h* and *ḥ* (K. *γ* and *χ*) and the voiced onset before the semivowels of Divisions III and IV (K. *j* and *i*). In the *Pien tau wu yin fa* however, the examples given of a *ya-sheng* are 迦 M. *kjâ* and 佉 M. *khjâ*; those of *hou-sheng* are 剛 M. *kâŋ* and 各 M. *kâk*. This double appearance of velar initials has usually been thought to be simply the result of some confusion but in fact there is a quite consistent principle involved. The more fronted *k* and *kh* of Division III are classed as *ya-sheng*, while the Division I initials, articulated farther back, are called *hou-sheng*. Evidently the author of this article based his classification on allophonic criteria, in contrast to the phonemic classification used by Shou-wen.

A similar classification of velar stops is found in the *Pien shih-szu sheng li fa* 辯十四聲例法, also included in the *Kuang-yün* and *Yü-p'ien*. There we find: . . . (11) *ya-sheng* 迦 M. *kjâ*, 佉 M. *khjâ*, 俄 M. *ŋâ* . . . (13) *hou-sheng* 鴉 M. 'a, 加 M. *ka*, 兼 M. *hâ* [all Division II!]. Here the phonetic distinction between the two kinds of velars seems even more explicit, since the Division II word *ka* is not merely dissociated from the Division III words *kjâ* and *khjâ* but is classed with glottal stop and *ḥ*. It is interesting to note that the initial *ŋ* is classed as *ya-sheng* even in Division I (unless 俄 is a mistake for 伽).

There are of course other problems about the early history of the five terms - *hou* "throat", *ya* "back tooth", *ch'ih* "front tooth", *she* "tongue" and *ch'un* "lips" - used to classify initials. For example, the *Hsi-t'an tsu chi* 悉曇字記 of Chih-kuang 智廣 (mid-T'ang), applying them to the five vargas of the Sanskrit alphabet, uses *hou* to refer to the dentals! Presumably this was because *she*, used for both dental and retroflex stops and nasals in Chinese, was applied to the retroflex line of Sanskrit and on the other hand there was no uvular or laryngeal line to which the term *hou* could be attached. This implies of course that the five terms were originally devised for Chinese and only secondarily applied to Sanskrit. This is not an unreasonable assumption, in spite of the presumption that Chinese phonetics was stimulated by Sanskrit models, since the particular terms used are certainly not directly based on traditional Sanskrit terminology.

Another eccentric use of the terms *hou* and *ya* is found in the *Wu yin-sheng lun* 五音聲論, attributed to the monk Shen-kung 神珙 (ninth century), found in the *Yü-p'ien* but not in the *Kuang-yün*. Eight words are given as examples of each: (a) *hou* 何 M. *hâ*, 我 M. *ŋâ*, 伽 M. *kâŋ*, 鄂 M. *ŋâk*, 詞 M. *kâ*, 可 M. *khâ*, 康 M. *khâŋ*, 各 M. *kâk*; (b) *ya* - 夏 M. *kaŋ*, 烟 M. *ŋaŋ*, 牙 M. *ŋa*, 格 M. *kak*, 行 M. *hâŋ*, 幸 M. *hæŋ*, 亨 M. *hæŋ*, 客 M. *khak*. Here we have both laryngeal and velar initials in both groups. Nevertheless there is a consistent distinction - Division I words are called *hou*, Division II words are called *ya*. This may simply be because the words *hou* and *ya* themselves belong to these respective categories. There is no way of telling how Division III and IV words would have been classified.

We do not know who first used the five terms or how they were first applied. Evidently they were taken over by other scholars who, either through misunderstanding or because of a different analysis of the data, felt free to use them somewhat differently. The same is unfortunately true of other terms used in the rhyme tables and it greatly complicates the problem of understanding what they mean in any particular instance.