

# LATE MIDDLE CHINESE

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## PART II

### IV

#### *Reconstruction of the four grades*

As outlined above, we postulate medial /i/ before the nucleus as the characteristic feature of all syllables classified as Grade III or Grade IV in the rhyme tables. Where there is no tense semivowel following the nucleus, we should expect this medial to have had the effect of raising and fronting the nucleus giving /ia/=[iɛ] and /iə/=[i] (or perhaps a somewhat slacker [ɪ]). This reflects itself in the ancient borrowings as follows.

(a) Kan'on has -e- for /ia/ in both Grade III and Grade IV in the /aj/ /aw/ /an/ /am/ rhyme groups. That is, it ignores the broken, diphthongal character of /ia/=[iɛ] which was foreign to Japanese phonology and records instead the fronted character of the nuclear vowel which, in Chinese, was allophonic and non-distinctive. By contrast Kan'on has -a- in Grades I and II in these rhyme groups. In the corresponding "inner" rhyme groups —/əj/ /əw/ /ən/ /əm/—/iə/=[i] is represented by *i*, contrasting with *o*=*o*<sup>2</sup>, *i.e.* a central unrounded vowel, for /ə/ on Grade I. For Grade II in these rhyme groups see Part I p. 220.

(b) Sino-Korean similarly has *e* or *je* in Grade III and *je* in Grade IV *v. a* in Grades I and II in the /aj/ /am/ /an/ groups. The contrasts between the two grades will be dealt with below. In the /aw/ group we find /jo/ in Grades III and IV contrasting with *o* in Grade I and *o* or *jo* in Grade II. The divergence from the usual pattern here is no doubt to be explained by the absence of -w diphthongs in Korean. In the "inner" groups in /əj/ /ən/ /əm/ we find *i* or *ji* for /iə/ /jiə/ in Grades III and IV, *v. ə* or *i* for /ə/ in Grades I and II. The lack of -w diphthongs in Korean again led to a departure from the pattern in the /əw/ group, where we find *u*=[y] and *ju*=[jy] for /iəw/ /jiəw/ *v. o* or *u* in Grades I and II.

(c) Vietnamese was typologically the most similar of these languages to Chinese and we regularly find -iɛ- [iə] for Chinese /ia/ in Grades III and IV in the "outer" rhyme groups *v. -a-* in Grades I and II; except that -ɛ [e] replaces the non-existent \*iɛi for Chinese /iaj/. In the "inner" rhyme groups, apart from the /əj/ group where we get the expected -i (also spelt -y) for Chinese /iəj/, Vietnamese normally fails to show palatal

vowels in Grades III and IV. For Chinese /iən/ /iət/ /iəm/ /iəp/ /iəw/ we get *-ân, -ât, -âm, -âp, -âu* (also *-u'u, -u*), where *â=|ə|*. This is analogous to the Cantonese treatment of these rhymes, as in 斤 *kân v. Man. chin*. This suggests that the Middle Chinese dialect on which Sino-Vietnamese was based was related to proto-Cantonese and had already developed in this direction. Note that Vietnamese still usually distinguishes Grades I and II from Grades III and IV in these rhyme groups, having a more open vowel *â* (=|a/ as opposed to *a=|ai/ [a:]*) in the former. Modern Cantonese does not have such a distinction.

The evidence of hP'ags-pa is similar to that of Kan'on or Sino-Korean. That is, we find *e* for /ia/ and *i* for /iə/ *v. a* for /a/ and *hi* for /ə/ (where *h* has no consonantal value but is a special orthographic device to represent a Chinese high or mid central vowel).

By the Mongol period (and indeed by Northern Sung) Grades III and IV of the /aj/ group had closed up and merged with the /əj/ group, so that we get *-i* for such words in hP'ags-pa: e.g. 雞 /kjiəj/ > /kjiəj/ hP *gi*, 低 /tiaj/ > /tiəj/ hP *di*, 世 /sriəj/ > /sriəj/ hP *s'i*. This shift can be explained in terms of the same raising effect of the tense medial /i/ on a following /a/ that we have noted as a phonologically non-distinctive effect in other rhymes—only in this case the raising was of such a degree as to lead to confusion and merger with the corresponding close rhyme. As will be noted below, the tense medial /u/ in Grade I *ho-k'ou*, had a similar effect in this rhyme group: /uaj/ > /uəj/.

In the rhyme groups reconstructed with /ai/ and /əi/ we find different patterns of correspondence for Grades III and IV in the ancient borrowings.

Kan'on shows the simplest and clearest pattern. We find *-yau, -yaku, -ya* (spelt *-iya-*) for /iaij/ /iaik/ /iai/; *-you, -yoku, -yo* (spelt *-iyo-*, where *o=ə=|ə|*) for /iəij/ /iəik/ /iəi/.

Sino-Korean sometimes has *-ja-* for /iai/, as in 嬌 *kjak*, but often ignores the medial and simply has *-a-*, as in 驪 *kan*, 脚 *kak*. /iəi/ not followed by a consonant is represented by *e* or *je*. One might be tempted to infer that Korean *e* was already becoming centralized towards its modern value [a] but the other evidence about its value in Sino-Korean points overwhelmingly to its being a front vowel. It is noteworthy that words in this category are mostly transcribed with *-i* in Tibetan (occasionally *-e* or *-u*) and that they often rhyme with /iəj/ [i] in popular poetry of the late T'ang period. For /iəik/ Sino-Korean occasionally has *-ek* or *-jek* but more usually *-ik* or *-jik*, and for /iəij/ it always has *-ij* or *-jij*. This no doubt points to the simplification of /iəij/ /iəik/ to /əj/ /ək/. This was part of the process involved in the merger with the /aij/ rhyme group, which had taken place by Northern Sung times and which may have already been under way in some advanced forms of speech in late T'ang.

Sino-Vietnamese has simply *-a* for /iai/ not followed by a consonant,

as in 且 /ts'iai/ SV *thə*, 惹 /riai/ SV *nhə*; but we find some irregularities in the representation of initials which may be attributable in some way to the Chinese medial, e.g.: 者 /tsriai/ SV *gia* (instead of *ch-*), 舍 /sriai/ SV *xä* (instead of *th-*). For /iaij/ and /iaik/ Sino-Vietnamese had *-uəng, -u'oc*, where *u* represents a non-palatal medial /i/. This suggests that Sino-Vietnamese may have been based on a conservative Chinese dialect in which medial /i/, which had existed in the Chinese of the *Ch'ieh-yün*, had not yet fronted to /i/ in these rhymes. Similarly we find Sino-Vietnamese *-u, u'ng, -u'c* (sometimes *-əng, -əc*) for /iəi/ /iəij/ /iəik/. There are certain difficulties about the supposition that Vietnamese *u* here represents Chinese /i/, notably the fact that we already find labial fricatives in words like 方 /p'waiəj/ > /fiuəj/ > /faiəj/ SV *phu'əng*, etc. (see Part 1 p. 217). The discussion of this problem will be put aside here, but at least it is clear that this evidence supports a tense medial /i/ or /i/ and not a lax glide.

By the time we come to the hP'ags-pa, /iəij/ had simplified to /iəj/ hP *-ij*, /iəik/ had become /iəj/ hP *-i*, and /iəi/ had merged with /iuəi/, then lost its final element and become /iuə/ [y] hP *-ju*. In the open rhyme also /iai/ had lost its final element and become /ia/ with a fronted realization [iə] as in /ian/, etc. In hP this is spelt *-e* or *-ja* (representing /jja/), as in 謝 *ze*, 也 *me*, 車 *č'ja*, corresponding to the spellings *-en, -jan*. In the *Meng-ku tzu-yün* such words are still kept in the *-a* rhyme but in the *Chung-yüan yin-yün* they are separated off. Compare the way in which the /ian/ rhyme is separated from the /an/ rhyme in both dictionaries and the *Chung-yüan yin-yün* also separates /iam/ from /am/, while the *Meng-ku tzu-yün* keeps the latter two together.

In the /aij/ rhyme, on the contrary, we must infer that the /i/ element remained, for instead of tending to separate Grades III and IV from Grades I and II by its fronting effect on the nucleus medial, /i/ was reduced to /j/ or zero by dissimilation from the postnuclear tense semivowel. In both the *Meng-ku-tzu-yün* and the *Chung-yüan yin-yün* originally Grade III words with velar initials, like 江 /kjaij/ > /kjaij/, have become homophonous with originally Grade II words like 江 /kjaun/ > /kjaun/, though in other rhyme Grades II and III are still kept apart. The hP spelling *gyan* (which is quite clear on the inscriptions, though confused with *-jan* in the dictionary) is appropriate to Grade II rather than Grade III (see below). After retroflex initials hP'ags-pa shows a loss of medial /i/, as in 賞 /srhiaiəj/ > /sraiəj/ hP *šan*. This did not lead to any loss of phonemic distinction and hence is not apparent in the *Chung-yüan yin-yün*. Originally Grade II words with which there might have been confusion had by this time developed, a central glide between the initial and the nucleus which them became rounded to /w/: 霜 /sraiəj/ > /sriaiəj/ hP *s'han* (cf. /sriə/ hP *s'hi*, etc.) > /srwaiəj/.

The representation of Grades III and IV in the /aij/ rhyme group was quite similar to that in the /an/ group. KO has *e* for /iai/, as for /ia/, but the

use of *-i*, *-ki*, instead of the usual *-u*, *-ku* for /ŋ/ /k/ may reflect the palatalization at the end of the syllable, as Hashimoto suggests.<sup>71</sup> SK has throughout *-je-* in Grade III as well as Grade IV in this rhyme group, which probably reflects indirectly its more palatal character compared to the /an/ or /am/ groups. SV has mostly *-inh*, *-ich*. The close vowel here probably does not mean that /iaŋ/ /iaik/ had already closed up to /iəŋ/ /iək/ in the underlying Chinese dialect, since Vietnamese phonology does not offer any other possibility of a medial /i/ before the nucleus combined with palatal finals.

The closing up and merger with /iəŋ/ had occurred by Northern Sung and is, of course, reflected in hP'ags-pa, which has *-ij* for /iəŋ/ < /iaŋ/ or /iəŋ/.

The Grade III/IV part of rhyme *tung* 東 is described as *k'ai-k'ou* in the *Yün-ching* and by Shao Yung (contrasting with the *ho-k'ou* rhyme *chung*). On this basis it is to be reconstructed as /iəŋ/ /iək/, phonetically [iəŋ] [iək]. Some of the foreign equivalents—SK *-uŋ*, *-uk* (where u = Middle Korean [y]), SV *-ung*, *-uc*, Tibetan *uŋ*, *-ug*—would be rather more in favour of a *ho-k'ou* reconstruction /iuaŋ/ /iuaək/, phonetically [yŋ] [yək]. On the other hand KO *-yuu* and *-iku* or *-yuku* agree well with the *k'ai-k'ou* reconstruction. Compare KO *-iku* for /iək/ with *-iu* for /iəw/ and contrast *kyuu* for 宮 /kiəuŋ/ with *ku* for 俱 /kiuəi/ and *kun* for 君 /kiuən/, etc.

The matter is complicated by the fact that labial initials (but not /m/) became fricatives in this rhyme, implying that they had once been followed by /iu/. This will be discussed below.

With the metathesis of /əuŋ/ to /uəŋ/ that affected the *t'ung* rhyme during Sung *k'ai-k'ou* /iəuŋ/ became /iuəŋ/, merging with the *ho-k'ou* rhyme.

#### Grades III/IV *ho-k'ou*—medial /iu/

In Grades III/IV, *ho-k'ou*, I assume that medial /i/ combined with a tense /u/ to give a front-rounded tense medial /iu/ [y]. It is useful to indicate the two features of palatalization and rounding separately, though they were no doubt realized simultaneously. The ordering of the elements is, in this case, irrelevant and one could equally well write /ui/. It might strictly be preferable to mark the simultaneity in some way such as /iu/ but in the absence of any contrasting /i/+ /u/ realized sequentially one can state a general rule and omit any special mark.

An alternative way of reconstructing Grades III/IV, *ho-k'ou*, would be to postulate /wi/, rather than /iu/, at least in some cases. It is difficult to find absolutely decisive arguments to settle this point but after careful consideration of all the evidence it seems to me that to reconstruct /iu/ uniformly is the best solution. The apparently contrary indications that appear, especially in Sino-Vietnamese, but also to some extent in Kan'on and hP'ags-pa, can be regarded as resulting from the exigencies of foreign phonemic systems

<sup>71</sup> Hashimoto, 1964.

and orthographic conventions. This, in essence, was also Karlgren's solution, though he vacillated between thinking that his *-ju-* or *-iw-* represented simultaneous blends or sequentially discrete elements.<sup>72</sup>

The sort of evidence which might incline one to reconstruct /wi/ (with /jwi/ in Grade IV) rather than /iu/ is: (1) Vietnamese *-uyên*, *-uyêt*, *-uynh*, etc. (phonetically [çi-] in North Vietnamese) and *v-* for initial *yü* /y/ *ho-k'ou*, (2) early Kan'on forms which indicate the labial element in Grade III *ho-k'ou* words (omitted in standard Kan'on) by spellings such as *kuwiyān*, *kuwiyāu*, invariably putting the labial element first, and standard Kan'on forms like *wen* for 遠 /yuan/ and 冤 /'yuan/, (3) hP'ags-pa *-wja-*, *-we*. On the other hand hP'ags-pa has *-ju*, no doubt standing for [y] as in Mongolian, in the "inner" rhyme groups, and the spelling *-jon* in certain Grade III words is no doubt also based on the convention whereby *-jo* stands for [ø] in Mongolian. In Chinese it must be a device for representing /iua/ (= [yε] or [yə]) paralleling the use of *e* for /ia/ [iε]. Where *-wja-* contrasts with *-jo-*, the former belong to Grade IV and stands therefore for /jjuā/ [jyε] or /jwja/ [çiε]. The phonetic difference implied is not very great. If one assumes that Late Middle Chinese like modern Mandarin already had /iu/ = [y], then the fact that this simultaneous blend was sometimes expressed orthographically or in foreign borrowing as a sequence in which the labial element was put first is not very significant.

Only in the /əŋ/ rhyme group is there some suggestion of an actual distinction between /wəŋ/ and /iəŋ/ at an early stage of Late Middle Chinese. In standard Kan'on we have a difference in treatment of Grade III, *ho-k'ou*, words which came from the *Ch'ieh-yün* rhymes *chen* 眞 and *wen* 文:

<i>chen</i> III:	麴 <i>kin</i>	隕 <i>win</i>	奇 <i>win</i>
<i>wen</i> III:	君 <i>kun</i>	云 <i>un</i>	緜 <i>un</i>

To postulate /kwəŋ/ /çwəŋ/ /'wəŋ/ for the first set *v*. /kiuən/ /çyuan/ /'piuan/ for the second set might help to account for the fact that the former were left in the *chen* rhyme when a separate *ho-k'ou* rhyme, *chun* 諄, was set up in the *T'ang-yün*. Unfortunately the genuine early Kan'on glosses do not show such a clear picture. We find spellings like *kuwin* or even *kin* for words like 郡 and 訓 from rhyme *wen*. Even in standard Kan'on 韻, from rhyme *wen* (departing tone) is *win*, not *un*. Conversely 筠 and 殞 from rhyme *chen* are read *un* as well as *win*.

<sup>72</sup> Karlgren, 1915-24, p. 628, n. 2, remarks that, although he places the labial element after the palatal for typographical reasons, the two articulations were probably simultaneous. In 1954, p. 251, however, he gives substantive arguments for placing the palatal element first. The point which he regards as decisive is the Sino-Korean treatment of words like 均 SK *kjun*, 圭 SK *kju*. These are Grade IV words—Late Middle Chinese /kjiuən/ /kjiuaj/—and the Korean palatal glide stands for the Grade IV palatal glide, not the palatal part of the tense medial /iu/ = [y] common to Grades III and IV. See also Wenck, 1954-9 Vol. III, pp. 84-5, for a discussion of the question with reference to the opinions of Arisaka and Kōno.

Sino-Korean also tends to differentiate between Grade III words from rhymes *chen* and *wen*:

Wen III: 君 *kun* 云 *un*

Chen III: 雲 *kjun* 困 *kjun* 筠 *jun* (like 均 *kjun*, Grade IV) but also 蒼 *kun* 殞 *un*.

This would indicate, however, not a reading /wian/ or /iuən/, but a shift to a Grade IV reading /jiuən/.

The Hui-lin glosses group all these Grade III words together. Thus 鷹 and 軍 have equivalent *fan-ch'ieh* spellings and both are said to be homophones of 君. Evidently any vacillation that may have existed in the eighth century has not left clear enough evidence on which to postulate a stable phonological distinction.

The *Ch'ieh-yün* rhyme *chung* 鐘 (and its counterparts in other tones) is treated by Shao Yung as the *ho-k'ou* counterpart of rhyme *tung* 東. In the *Yün-ching* also the table in which it is placed is called *k'ai-ho* "open-close" in contrast to the table with rhyme *tung* 東 which is called *k'ai-k'ou*. The designation *k'ai-ho* can be explained by the fact that the same table contains rhyme *tung* 冬 in Grade I, originally distinct from rhyme *tung* 東 in the *Ch'ieh-yün* but merged with it by late T'ang. Later rhyme tables from the *Ssu-sheng teng-tzu* onward have a single table for the *t'ung* rhyme group in which rhyme *chung* overlaps the Grade III and IV parts of rhyme *tung*. This shows that there had been a merger by some time in the Sung dynasty but Kan'on, Sino-Korean and Tibetan transcriptions all show clearly that there was indeed a distinction at an earlier stage. We must reconstruct /iuəu/, phonetically [yɔŋ] [yok].

KO *-you*, *-yoku* (with old spellings like 共 *kuwiyou*, 曲 *kuwiyoku*, showing the rounding of the medial) give the clearest supporting evidence. Tibetan transcriptions mostly have *-uŋ* for the words with nasal finals but in *ju-sheng* we find the rounded medial sometimes represented by *-w-*, as in 足 *cwag*, 續 *swog*, 曲 *k'wag* (but note also 欲 *yog*, 觸 *č'og*). Some of this evidence might suggest a more open head vowel, not merely a different medial from that of the *k'ai-k'ou* rhymes /iəuŋ/ /iəuk/. This would agree with the earlier relationship between these rhymes in the *Ch'ieh-yün* language. As far as Late Middle Chinese is concerned, however, it is best to follow the internal evidence of the rhyme tables and of poetic rhyming and assume the same head vowel.

By the Mongol period the metathesis of the post-nuclear backrounded feature that affected the /əuŋ/ group led to the merger of *k'ai-k'ou* /iəuŋ/ and *ho-k'ou* /iuəuŋ/ as /iuəŋ/, merging also with Grade III, *ho-k'ou*, of the /əŋ/ group (</iuaiŋ/). In hP'ags-pa the spelling in the *-uŋ* rhyme is *juŋ*. A slight complication arises from the fact that words with certain initials in Grade IV, *ho-k'ou*, from the /aiŋ/ group, though spelt *-juŋ*, are separated from other words with identical spelling and placed in the *-iŋ*

rhyme. Since hP does not elsewhere maintain a distinction between /jiuə-/ (Grade IV) and /iuə-/ (Grade III) it is difficult to suppose that this could be the distinction here. Such a distinction in any case should not mean a difference in rhyme. Note that with initial *y-* itself all the words of whatever origin are spelled *yjuŋ*, implying /yjiuəŋ/, and are placed in the *-uŋ* rhyme. It seems likely that the separation of two types of word with the spellings *giuŋ*, *k'juŋ*, *kjuŋ*, *hjuŋ* was artificial, based on traditional categories. A possible explanation of the way in which the separation was made might be sought in the fact that in current speech some words which had been in Grade IV, *ho-k'ou*, in the /aiŋ/ group had actually lost their labialization. This is found for example in Mandarin 傾 *ch'ing*, from Late Middle Chinese /k'jiuaiŋ/. In the *Chung-yüan yin-yün* this is already a homophone of 輕, earlier /k'jiain/ (as well as being given a separate reading as a homophone of 穹 /k'iuəŋ/).

In the rhymes /iəuŋ/ and /iuəuŋ/ there was a loss of /i/ after retroflex initials paralleling that in the /aiŋ/ rhyme, as in 中 /triəuŋ/ > /tsruəŋ/ or 鐘 /tsriuəuŋ/ > /tsruəŋ/, both hP *juŋ*. The distinction between hP *čjuŋ* for 崇, originally Grade II /tsrɕiəuŋ/, and *čjuŋ* for 蟲, originally Grade III /trɕiəuŋ/, and other similar words is probably artificial. It is not maintained in the *Chung-yüan yin-yün*. Though hP'ags-pa does not show it, the same loss of /i/ took place somewhat less consistently after velar initials so that, for example, 弓 /kiəuŋ/ > /kuəŋ/, 恭 /kiuəuŋ/ > /kuəŋ/ and 公 /kəuŋ/ > /kuəŋ/ all became homophones in the *Chung-yüan yin-yün*. We can probably attribute the loss of /i/ in this rhyme group to the same cause that led to its loss or weakening in the /aiŋ/ group, namely the dissimilatory effect of tense semivowels on both sides of the nucleus.

The development in Grade III of the /əuŋ/ rhyme group in *ju-sheng* largely paralleled that of the nasal finals: /iəuk/ > /iuək/ > /iuə/, /iuəuk/ > /iuəuk/ > /iuək/ > /iuə/, giving the spelling *-ju* in hP'ags-pa. As in the case of /aik/, however, medial /i/ was not lost, and, for example, 竹 /triəuk/ gave /tsriuə/, hP *čju*. The *Chung-yüan yin-yün* agrees in most cases but exceptionally we find 六 /liəuk/ > /liəw/, 肉 /riəuk/ > /riəw/, forms which are ancestral to Mandarin *liu<sup>4</sup>*, *jou<sup>4</sup>*.

Rhyme 虞, which by its place in the rhyme tables has to be reconstructed as /iuəi/, implying a pronunciation [yɤ], is represented as KO *-u*, SK *-u*, *-ju*, SV *-u* and as *-u* in the Tibetan transcriptions, giving little evidence of the /əi/ [ɤ] which we must suppose to have been the rhyme vowel: Here we must rely on the internal Chinese evidence, including the fact that it rhymed with /uəi/ and /iəi/ in poetry. With the loss of final /i/ we get /iuə/ = [y], which agrees with the hP'ags-pa value *-ju*.

In the /aj/ rhyme group words in Grades III and IV, *ho-k'ou*, participated in the same closing up under the influence of the tense medial that affected *k'ai-k'ou*. That is, /iuaj/ > /iuəj/. Thereafter there was a dissimilatory

loss of the first palatal element under the influence of final /j/, affecting both original /iuəj/ and /iuəj/ < /iuaj/. Thus 歲 /siuaj/ > /siuəj/ > /suəj/ hP *sue*, homophonous with 選 /siuəj/ > /suəj/ and 碎 /suaj/ > /suəj/ (see below).

In the /aiŋ/ rhyme /iu/ simplified to /w/ by Mongol times, parallel to the weakening of /i/ to /j/. Hence 誑 /kiuaiŋ/ > /kwaiŋ/ hP *gway*, 王 /ɣiuaiŋ/ > /ɣwaiŋ/ hP *?way*, etc. This did not affect the corresponding /aik/ rhyme where we have 獲 /kiuaik/ > /kiuaw/ hP. *gwjaw*, etc.

*Labial initials in Grade III in the /əw/ and /əwŋ/ groups*

The fact that labial fricatives developed out of /p/ /p'/ /pʰ/ in the rhymes that have been reconstructed as Late Middle Chinese /iəw/ /iəwŋ/ /iəuk/ (that is, as *k'ai-k'ou*) is, on the face of it, difficult to reconcile with the theory that 'dentilabialization' was conditioned by the presence of the Grade III/IV *ho-k'ou* medial /iu/. A full discussion must await detailed consideration of the *Ch'ieh-yün* system proper. Briefly, the explanation is that these rhymes were originally *ho-k'ou*, having the structure /uəw//uəwŋ/ /uəwk/. The general fronting of /i/ to /i/ and /u/ to /iu/ in the early T'ang period would have caused them to become /iuəw//iuəwŋ//iuəwk/. Except after labials these structures soon simplified to /iəw//iəwŋ//iəuk/. Labial stops, however, must have become fricatives more or less concurrently with the fronting of /u/ to /iu/: /puəw/ > /piuəw/ > /fiuəw/, etc. By regular rule /fiuəw/ then became /fuəw/. Hence such forms as 浮 /fiuəw/, KO *huu*, SK *pu*; 風 /fiuəŋ/, KO *huu*, SK *puŋ*; 復 /fiuək/, KO *huku*, SK *puk*. Note that in these rhymes, unlike all other rhymes where /p/ > /f/, the labial nasal /m/ did not become a fricative. We must suppose that in words like 謀 /muəw/, 夢 /muəwŋ/, 目 /muək/ the shift of /u/ to /iu/ never occurred. Indeed KO and SK both show forms that imply that there was an early loss of medial /u/ leading to a merger with Grade I: /muəw/ > /məw/, KO *bou*, SK *mo*; /muək/ > /mək/, KO *boku*, SK *mok*, etc.

In rhyme 鍾, which remained *ho-k'ou*, labial stops also became fricatives (/m/ did not occur). In this case the *Ch'ieh-yün* rhyme was /uaŋ/ /uauk/, giving /iuaŋ//iuauk/ and subsequently closing up to the Late Middle Chinese values /iuəŋ//iuək/. Since, by regular rule /Fiua-/ gave /Fa-/, we should expect /puaŋ/ to give /fiuaŋ/ > /faŋ/ > /fəŋ/. This agrees exactly with what we find in such forms as 封 /faŋ/ KO *hou*, SK *poŋ*. Paradoxically this meant that in the case of labial initials the positions of rhyme 東, Grade III, and rhyme 鍾 were reversed. The former became *ho-k'ou* and the latter *k'ai-k'ou*. This is not shown in the *Yün-ching*, since it would have meant too great a departure from the *Ch'ieh-yün* rhyme scheme.

*Grade II—k'ai-k'ou, velar and labial initials—medial /j/*

According to Karlgren Grade II was characterized by a low front

vowel [a] (a-*aigu*), contrasting with a back [ɑ] in Grade I. After the period of Ancient Chinese a palatal glide developed parasitically after back initials before this vowel leading to the palatalized forms we find in Modern Mandarin. As Karlgren himself points out, this process must have started already during the T'ang dynasty.<sup>73</sup> Sino-Vietnamese regularly has palatalized initials—*gi-* [z] or [j], *x-* [ɣ(j)], *nh-* [n]—for Chinese /k/ /k'/ /ŋ/ in this Grade and nowhere else. Karlgren did not attempt to explain this paradox. No doubt it was because tense -i- of Grade III, as in *kiên*, did not have the same effect as the palatal glide of Grade II, and -ji- of Grade IV was either never distinguished from -i- after velar in Vietnamese, or simplified to -i- without affecting the initial.

Sino-Korean also provides some evidence. Generally speaking Grade II is not distinguished from Grade I but -jo (Grade II) as opposed to -o (Grade I) is regular in the /aw/ rhyme group and we sporadically find such forms as *hjej hjej* in the /aj/ group. Finally, hP'ags-pa provides an absolutely clear *terminus ante quem*. Grade II is invariably spelt with -y- after velar initials, or with initial y- in the case of Middle Chinese /ŋ/ and /ʃ/.

Karlgren was aware of some of this evidence but regarded it as irrelevant to his problem of reconstructing the Sui dynasty pronunciation recorded in the *Ch'ieh-yün*. From our point of view, however, it is clearly highly relevant since it points to the very period when the rhyme table phonology was being worked out.

Karlgren's reconstruction of a low front vowel for Grade II in the *Ch'ieh-yün* language is undoubtedly correct. It is directly confirmed by both Go-on, which usually has -e- in Grade II—*馬 me*, *家 ke*, *山 sen*, etc.—v. -a- in Grade I, and by the earlier stratum of Vietnamese borrowings such as *keo* "glue" (for 膠 SV *giao*), *hé* "summer" (for 夏 SV *ha*), *ken* "choose" (for 揀 SV *gian*). At this period Grades I and II (or, strictly speaking, the rhymes which were later assigned to these grades) were not permissible rhymes in Chinese poetry. In mid and late T'ang, however, the situation was different. By this time it was possible for poets like Li Ho to rhyme such words and, as we have already noted, none of the foreign evidence for this period makes any distinction in head vowel between Grades I and II. The conclusion seems obvious. In the new standard language the distinction between the two grades was not in the head vowel but at least as far as back initials were concerned, in the palatal glide between the initial and the vowel. And this, not the earlier distinction which they were probably quite unaware of, must have been the criterion on which the rhyme table phonologists based themselves.

Karlgren's assumption that the palatal vowel as found in the *Ch'ieh-yün* stage was the source of the palatal glide which we find later in northern

Chinese is extremely plausible and supported by the relative chronology. It is not, however, the only possibility. As was suggested at the beginning of this paper, the north Chinese dialect out of which the mid and late T'ang standard developed was probably not directly descended from the more southerly based earlier standard language. It has been argued elsewhere that the Grade II category as a whole went back to a medial /r/ in Old Chinese. In this case /kja-/ may have developed directly out of /kra-/ and been retained unchanged in northern dialects while going over to /kai/ (i.e. [kæ]) in some southern dialects in the post-Han period. Direct confirmation of such a hypothesis would be difficult to find, since there is very little evidence about non-standard dialects before recent times. It would, however, offer a somewhat simpler and more natural account of the loss of medial -r- than has been suggested hitherto. Much discussion in the past has, of course, been vitiated by the assumption that Grade III had a palatal glide as its characteristic, which seemed to preclude the same type of element elsewhere. Our revision of Karlgren's hypothesis regarding Grade III removes this obstacle.

According to Karlgren's hypothesis, a palatal glide developed only after back initials in Grade II. This assumption is no longer satisfactory if we are to make the nuclear vowel the same in Grades I and II in the rhyme tables. The problem appears most acutely in the case of labial initials. One possible way out would be to suppose that the contrast in this case was between *ho-k'ou* in Grade I and *k'ai-k'ou* in Grade II, or, as we shall do for *ho-k'ou* with back initials, between medial /u/ in Grade I and medial /w/ in Grade II. The first of these suggestions would fail to account for the fact that a word like 巴 remained /pai/ in early Mandarin, although Grade I words in -ai, like 哥 /kai/ 多 /tai/ rounded to /kau/ [kɔ], /tau/ [tɔ]. The second suggestion would provide a possible conditioning factor, the lax medial /w/, but a contrast between /pu/ and /pw/ seems inherently improbable. Neither suggestion would help very much in the case of the -aw rhyme, which had no *ho-k'ou* before the secondary development of forms like 郭 /kwaw/ < /kwaik/ through loss of final -k.

There is, in fact, some scanty but definite, direct evidence in favour of the supposition that at the time the rhyme tables were set up there was a /j/ glide after labials as well as back initials in Grade II. It must have been lost quite early, since there is no trace of it in hP'ags-pa spellings, but, as we shall see below, /j/ was also lost in Grade IV after labials between T'ang and Yüan.

Sino-Korean mostly makes no distinction between Grades II and I after labials (any more than after velars). In the /aw/ rhyme group, however we find 菊 *p'jo* and 卯鼻郭 *mjo* in Grade II besides the more usual 包 *p'o* 茅 *mo*, etc. It is, of course, just in this rhyme group that we find *kjo* for Grade II after velars.

<sup>73</sup> Karlgren, 1954, p. 241.

Grade II words are very rare in Buddhist transcriptions but one that occurs as a standard form over a long period is 瓊 /mjauk/ (Grade II) for *-myak-* in the phrase *samyak sambuddha* "perfect enlightenment". It is first found as early as the third century and was still in use in T'ang times. In the Tibetan transcription of the *Chin kang ching* we find variously *hmeg, meg, hyag, yag*, forms which are abnormal in their treatment of the Chinese initial and are probably influenced by the underlying Sanskrit form. In the *Ch'ien-tsu-wen*, however, we find the homophonous character 瓊 read independently as *hbyag*. Unless we suppose a reconstruction such as /mjauk/, with initial /mj/, it is very difficult to explain the choice of this character to write *samyak*. It would have been quite easy, after all, to transcribe *sam-yak*, making the break before the *y*. On the other hand, the reconstruction of such a form as /mjauk/ in the third century A.D. can only be justified on the basis of the hypothesis outlined above, namely, that /j/ after the initial was the first development and the front vowel of the *Ch'ieh-yün* was secondary.

Another case of a Grade II word in a Buddhist transcription is 巴 /pjaɪ/ in 阿路巴 for *rūpya* "silver". This occurs in the *Fan-i ming-i chi* of Fa-yün 法雲 (Northern Sung) but I have not so far traced it to an earlier source. (*Taishō shinshū daizōkyō*, v. 54, p. 1105b.)<sup>73a</sup> The same work also provides another independent example of /mjauk/ = *mya* in the expression *Puruṣadamyasārāthi* (p. 1057a). This comes from the *Ta chih tu lun*, translated by Kumārajīva (A.D. 340-413) *ibid.*, v. 25, p. 133a).

Finally the Manyōgana usage of Grade II words like 賈, which I would reconstruct as /mjaɪ/, later /maj/, for the Japanese syllable *me*<sup>1</sup> would support my hypothesis, if we accept (as I believe we should) Hattori's view that *e* was /je/.

The fact that the direct evidence of the supposed /j/ glide after labial initials in Grade II is so fragmentary is not as damaging to the hypothesis as it might appear at first sight. If /j/ had been lost after velars in Grade II in the Sung period instead of surviving into modern Mandarin, the evidence for its earlier existence would be only slightly greater.

#### Grade II—Retroflex Initials—Medial /r/

Though the palatal glide after velar and labial initials in Grade II probably had a common origin with the retroflexion of dental stops and

<sup>73a</sup> The occurrence of a prothetic vowel in Chinese transcriptions of foreign words beginning with *r-* is, of course, not uncommon. See *The background of the rebellion of An Lu-shan* (1955) pp. 15, 111 n. 37. In Buddhist transcriptions of early T'ang it was the fashion to use the syllable 羅, Early Middle Chinese /lat/, with voiced onset, for this purpose. Cf. *Taishō shinshū daizōkyō* 54, 1188b and examples from Hsüan-tsang and I-ching in articles by S. Lévi, JA 1915/1, and S. Mizutani, *Tōyō Gakuhō* 40/4 (1958). An example with 阿 as the prothetic vowel will be found in a transcription of *rahyasa* in T. 54, 765a. See also Mochizuki, *Bukkyō Daijiten* 4957b.

sibilants found in the same Grade,<sup>74</sup> this cannot have been known to the constructors of the rhyme tables. They were no doubt influenced by the fact that these words were all found in the same *Ch'ieh-yün* rhymes. Nevertheless there were good phonological reasons justifying the analogy that was in effect being drawn between retroflexion and palatization. Though from one point of view the retroflex initials might be (and were) regarded as unitary phonemes, from another point of view they were treated as sub-classes of the plain dental stops and sibilants. It does, in fact, help to explain certain otherwise anomalous developments if we treat them, as I have done, as combinations of stop or sibilants plus lax /r/ glide (an analysis which corresponds not only to the phonemic treatment of the retroflex consonants of modern Pekingese by Hartman and Hockett, but also to the orthographic convention adopted for writing Vietnamese initial *tr*).

The first obvious advantage of treating /r/ as a glide is that it allows us to account for the difference in development of the /ai/ rhyme groups as between Grades I and II by a general rule without the necessity of postulating different head vowels. In Grade I /ai/ > /au/ [ɔ], /uai/ > /wau/ [wɔ]. In Grade II, under the influence of the lax medial glides /j/ /r/ /w/, this change did not take place and /ai/ remained. One might argue that the fact that the *Yün-ching* made separate tables for the Grade I rhymes *ho* 歌 and *ho* 戈 on the one hand and the Grades II/III/IV rhyme *ma* 麻 on the other, treating them as separate rhyme groups, indicates a difference of head vowel. Nevertheless these two groups rhymed freely in Li Ho's poetry in the ninth century and continued to do so in the *ta'u* poetry of the Sung period.<sup>75</sup> Nor are they distinguished, apart from features that belong to the initial or medial, in any of the foreign evidence. Later rhyme tables, from Shao Yung onwards, combine them into a single category. Any tendency for /ai/ to shift to /au/ in Grade I words was probably still at the subphonemic level.

Apart from this rather difficult point, the effect of /r/ as a lax medial is seen in the *ho-k'ou* words of the /əɪ/ rhyme group. The way in which /iaɪ/ closed up to /iaɪ/ during the Sung period under the influence of the tense medial /i/ of Grades III and IV has already been alluded to and it will be shown below that this also happened in Grades I and III/IV, *ho-k'ou*, under the influence of medials /u/ and /iu/: /uaj/ > /uəɪ/, /iuaj/ > /iuəɪ/. In Grade II /jaj/ /waj/ and /raj/ were unaffected. In Grade II, *ho-k'ou*, of the /əɪ/ group just the opposite took place. /rəɪ/ opened up to /rəɪ/, shifting into the /aj/ group. The number of words affected was quite small but the development was quite regular. The shift was complete by the Mongol period and is found both in the *Chung-yüan yin-yün* and in *hP'ags-pa*: 摧 *c'way*, 帥 *sway*.

<sup>74</sup> Pulleyblank, 1962, p. 110 ff.

<sup>75</sup> Pulleyblank, 1968 and Chou Ts'u-mo, 1943.

In *k'ai-k'ou* this shift of /əj/ to /aj/ after retroflex glide did not take place. Instead words with retroflex initials early developed a tense /j/ as in modern Mandarin: 節 /srəj/ > /srəj/.<sup>76</sup> There is, however, an exact parallel to the *ho-k'ou* development in one of the patterns of the loss of *ju-sheng* in words like 色 /srəik/ > /srəj/ > /srəj/, as in the Mandarin reading *shar*<sup>3</sup>. hP'ags-pa shows the intermediate stage, with its spelling *k'hiy*=/srəj/. *Chung-yüan yin-yün* already has fully opened /srəj/.

An alternative development was the loss of /r/ when it occurred directly before /ə/, as in: 色 /srəik/ > /srəi/ > /səi/, 瑟 /srət/ > /srəi/ > /səi/, 穉 /srəp/ > /srəi/ > /səi/ (all Man. *sə*); 潤 /tsrəik/ > /tsəi/, Man. *tsə*; 森 /srəm/ > /sən/ Man. *sen*; 岑 /tsr'əm/ > /ts'ən/ Man. *ts'en*, etc. This type of change also illustrates the propriety of treating the retroflex sibilants as related to the plain sibilants by the addition of a feature.

#### Grades I and II, *ho-k'ou*—Medial /u/ and /w/

By strict analogy we might expect to reconstruct a combined palatal-labial lax medial /jw/ [ɥ] in Grade II, *ho-k'ou*, after back initials. Whether or not this ever existed as a transitional stage, there is no direct evidence for it in the period between T'ang and Yüan. The evidence points rather to a distinction between a tense medial /u/ in Grade I v. a lax medial /w/ in Grade II for all initials. Labial initials in Grade II normally behave as *ho-k'ou*, i.e. as followed by /u/.

This contrast between the two grades emerges most clearly in the hP'ags-pa spelling in the /an/ group, which has *-on* for Grade I and *-wan* for Grade II. To write *-on* for /uan/ is evidently exactly parallel to writing *-en* for /ian/ in Grade III. In the *Meng-ku tsu-yün* words spelt *-on* are still placed in the *-an* rhyme but in the *Chung-yüan yin-yün* they form a separate rhyme.

Kan'on treats both Grades exactly alike. Sino-Vietnamese also makes no distinction in the /an/ and /ai/ groups but in the /aj/ group has *-di* (= /əj/) in Grade I v. *-oi* (= /wəj/) in Grade II. Sino-Korean shows a similar, though less consistent, tendency, with mostly *-oj* in Grade I v. *-oaj* in Grade II. This evidence for a closer realization of the nucleus in Grade I under the influence of the tense medial points the way to the structural shift of /uəj/ to /wəj/ that had moved Grade I out of this group altogether by the Mongol period. The change was quite parallel to the shift of /iaj/ to /iəj/ and /iuaj/ to /iuəj/ in Grades III/IV but somewhat later in time. Shao Yung (tenth century) still has Grade I, *ho-k'ou*, in the /aj/ group, though Grades III/IV have moved into the /əj/ group. In hP'ags-pa the change is complete. Such words are placed in the *-i* rhyme with the spelling *-ue*, which I interpret as /uəj/.

<sup>76</sup> As shown by SK 13, SV 11'.

#### Grade IV—Medial /ji/ and /jiu/

Though it has occasioned great controversy, the nature of the distinction between Grade IV and Grade III is actually a simpler problem than Grade II. There is ample evidence, especially from Sino-Korean and hP'ags-pa but also from Tibetan transcriptions, that the contrast between Grades IV and III after velar and laryngeal initials in both *k'ai-k'ou* and *ho-k'ou* was based on the presence or absence of a palatal glide after the initial. This is essentially the solution first proposed by Mineya Tōru in 1953.<sup>77</sup> By quoting Korean forms in such transcriptions as *kien* (Grade IV) v. *kan* (Grade III) Karlgren gives the impression that they support his reconstruction of a "vocalic" *i* in Grade IV. In fact the phoneme he transcribes as *-i-* is a glide. The main vowel transcribed as *-ə-* is now centralized but was almost certainly a front vowel in Middle Korean. The distinction between forms with *-j-* in Grade IV and forms without in Grade III is very consistent throughout all rhyme groups in Sino-Korean and applies equally to words in "pure" Grade IV *Ch'ieh-yün* rhymes and to words in *Ch'ieh-yün* rhymes that contain Grade III words as well.

hP'ags-pa also maintains the distinction very consistently. In "outer" rhymes Grade III is spelled with *-e-* after velar initials and Grade IV is spelled with the letter which I transcribe as *-j-*.<sup>78</sup> This is a modified form of Tibetan subscript *-y-* which was used in Mongolian as a helping device to spell the palatal vowels. This has led people to suppose that it is a vowel sign. It is, however, a subscript consonant. The convention of using *-y-* to spell Turkish palatal vowels was already established in Brahmi writing and is undoubtedly the source of the hP'ags-pa convention, hP'ags-pa introduced the modified form of the letter to distinguish it from ordinary subscript *-y-* which did not indicate a fronting of the vowel. As applied to Chinese we get, for example, *gen* for /kian/ (Grade III) v. *gian* for /kjian/ (Grade IV). Similarly in the "inner" rhyme groups we find *gi* for /kiaj/ (Grade III) and *gi* for /kjiəj/ (Grade IV).

The clearest proof that this is the distinction implied comes from the way in which words with "zero" initial (derived from earlier /ʔ/ and /ŋ/ as well as /ʎ/) are spelt. Grade IV words are spelt with initial *y*, or the modified *y'* used when the word had formerly had initial /ʔ/ and was therefore in the upper tone register. Grade III words are spelt with *ŋ*, if the original initial was /ʔ/, or *g*, if the original was /ŋ/ or /ʎ/. Thus we have:

Grade III	Grade IV
衣 <i>ŋi</i> (< /ʔiaj/)	伊 <i>y'i</i> (< /ʔjiaj/)
疑 <i>ŋi</i> (< /ŋiaj/)	以 <i>y'i</i> (< /ʎjiaj/)
矣 <i>ŋi</i> (< /ʎiaj/)	藝 <i>y'i</i> (< /ŋjiaj/)

These distinctions are consistently maintained through all rhyme groups.

<sup>77</sup> Arisaka 1962. See also Mineya, 1953.

<sup>78</sup> On the value of this letter see Pulleyblank, 1970.



The distinction between Grades III and IV with back initials was on the point of being lost in the Mongol period. It is no longer found in the *Chung-yün yin-yün*. It must have still been sufficiently alive in the thirteenth century, however, to have been correctly identified phonetically by the originators of the hP'ags-pa script.

The Tibetan transcription of Chinese in late T'ang were, of course, much less systematically done. Nevertheless they too show the distinction between Grades III and IV after back initials with remarkable consistency. Words which fall in Grade IV, no matter what their *Ch'ieh-yün* rhyme, regularly appear with *-y-* after the initial, as in the following: /k/—/k'iaj/ 雞 *kye* 計 *kye*; /k'jian/ 堅 *kyen* 肩 *kyen* 見 *kyan* 堅 *kyen*, /k'jiaŋ/ 經 *kyen* 肩 *kyen*, /k'jiat/ 繫 *kyar*; /k'/—/k'jiaj/ 稽 *k'ye* 溪 *k'yali* 啓 *k'ye*, /k'jiam/ 謙 *k'yam*, /k'jian/ 遣 *k'yan*, /k'jiaŋ/ 輕 *k'yen* 啓 *k'ye*; /k'β/—/k'βjiaŋ/ 厥 *gyi* (also *gi*); /β/—/β'jiaŋ/ 伊 *'yi*, /β'jiaj/ 鷄 *'yehi*, /β'jian/ 譖 *'yan*, /β'jiaŋ/ 因 *'yin* (also *'in*), /β'jiaw/ 嬰 *yefu* (also *'efu*); /x/—/x'jiuat/ 血 *hyar*; /xβ/—/xβ'jiuat/ 惠 *hywa* (also *hwa*), /xβ'jian/ 絃 *hyan* 現 *hyan* 現 *hyen*, /xβ'jiaŋ/ 刑 *hye* 形 *hyen* (also *hen*), /xβ'jiap/ 俠 *hyab*; /ɣ/—/ɣ'jiaj/ 耶 *ya* 也 *ya* 野 *ya*, /ɣ'jiaj/ 以 *ye* (also *hi*) 已 *yi* 異 *yi* 貽 *yi*, /ɣ'jiuaŋ/ 維 *yu* 惟 *yu*, /ɣ'jian/ 疑 *yim*, /ɣ'jiaŋ/ 筵 *yan*, /ɣ'jiaŋ/ 引 *yin* (also *'in* ?), /ɣ'jiaŋ/ 禮 *yen*, /ɣ'jiaŋ/ 歸 *yay* 養 *yay*, /ɣ'jiaw/ 遙 *yahu* 緜 *yefu*, /ɣ'jiaw/ 由 *yifu* 猷 *yu* 猶 *yu* 遊 *yu* 教 *yifo* 輟 *yifo*, /ɣ'jiaj/ 譽 *yi* 與 *yi* 譽 *yu*, /ɣ'jiuaŋ/ 喻 *yu*, /ɣ'jiuaŋ/ 用 *yoy* 用 *yoy*, /ɣ'jiap/ 業 *yab*, /ɣ'jiat/ 逸 *yir*, /ɣ'jiaik/ 易 *yig* 亦 *yig* 易 *yig*, /ɣ'jiaik/ 藥 *yag*, /ɣ'jiuaŋ/ 欲 *yog*. Exceptions, in which *-y-* is omitted, are few. In addition to those noted above we have: /ŋjiaj/ 藝 *gehi*, /k'jiuaŋ/ 傾 *k'we*, /β'jian/ 厭 *'em*, /β'jiaŋ/ 纓 *'a*, /β'jiaik/ 益 *'ig*, /β'jiat/—/β'ir'zi. It would be otiose to attempt to list in full the more numerous cases of words in Grade III. The following examples will serve as illustration: /kiaŋ/ 機 *hi*, 既 *gi* /kiəm/ 今 *him*, /kiaŋ/ 驚 *heŋ* 境 *heŋ* 京 *ke*, /kiap/ 劫 *keb* 結 *ki* 起 *ki*, /k'iaŋ/ 慶 *k'eg*, /k'fiaŋ/ 其 *gi* 其 *ki*, /k'hiəm/ 禽 *gim*, /k'hiəw/ 求 *gifu*, /ŋjiaŋ/ 疑 *gi*, /ŋjian/ 言 *gen*, /β'iaŋ/ 衣 *'i* 意 *'i*, /β'iam/ 音 *'im* 蔭 *'im*, /β'iaŋ/ 英 *'e*, /β'iaŋ/ 嬰 *'ifu*, /kiaŋ/ 希 *hi* 培 *hi*, /xiaŋ/ 香 *hoŋ*, /xiaw/ 休 *hiŋu*. The only case I have noted in which *-y-* appears is 記 /kiaŋ/, once spelt *gyi* but elsewhere *kidi* *kehi*.<sup>79</sup>

Kan'on and Sino-Vietnamese make no distinction between Grades III and IV after back initials except for /β/ and /ɣ/. Here Kan'on has, for example: 遺 *wen* (for /ɣiuan/, Grade III) v. 緣 *en* (for /ɣjiuan/, Grade IV) and 寃 *wen* (for /βiuan/, Grade III) v. 淵 *en* (for /βjiuan/, Grade IV). In Sino-Vietnamese /ɣji/ and /ɣjiu-/ in Grade IV always appear as *d-* [z, j]. /ɣjiu/ in Grade III, *ho-k'ou* appears as *v-*. In *k'ai-k'ou* /ɣji/ is sometimes also represented by *v-*, as in 尤 /ɣiw/ *vwu*, 炎 /ɣiam/ *viem*. In some words, how-

<sup>79</sup> For details concerning these forms see Csongor, 1960. Note that I have taken no account of the two forms of the letter *i* which have been alleged to represent different old Tibetan phonemes but which appear to be used quite indiscriminately.

ever, it is represented by *h-*, as in 矣 /ɣji/ *hi*, 有 /ɣiw/ *hūu*, 維 /ɣiaŋ/ *hūng*. Sino-Vietnamese usually ignores the distinction between /βji/ (Grade III) and /βji/ (Grade IV) but it is no doubt this underlying distinction that explains the anomalous forms taken by two very common words: —/β'jiat/ 軀 *nhât*, 因 /β'jian/ *nhân* (contrast 乙 /β'iat/ *ât*, and 般 /β'ian/ *ân*). Another case is 咽 /β'jiat/ *nhiet* (as well as *yêt*). We may compare this with the Grade II word 鴉 /β'jai/ *SV nha*. These forms might reflect a late form of Middle Chinese in which /β/ was becoming confused with initials /ɣ/ and /ŋ/. However we account for the nasal, the appearance of an initial palatal in Vietnamese seems clearly to be based on the palatalization of the initial in Chinese.

The evidence for /j/ after labial initials in Grade IV is less abundant than after velar and laryngeal initials. Sino-Korean fails to make a distinction and the distinction had been lost by the Mongol period so that it is not shown in hP'ags-pa. Tibetan transcriptions sometimes appear to make a distinction similar to that with back initials but much less consistently. Nevertheless there can be no doubt that the distinction existed. The strongest evidence comes from Sino-Vietnamese which represents /βji/ and /β'ji/ by *t-*, /β'ji/ by *th* or *x*, and /mjji/ by *d-*, as in: 比 /β'jiaŋ/ *ti*, /β'jiaŋ/ 并 *tinh*, /β'jian/ 體 *tiên*, /β'jian/ 實 *tân*; /β'jiaŋ/ 毗 *ti*, /β'jiaŋ/ 頻 *tân*, /β'jiaŋ/ 幣 *tê*; /β'jiaŋ/ 屆 *thi*, /β'jiaŋ/ 匹 *thât*, /β'jiaw/ 漂 *xiêu*; /mjjiə/ 彌 *di*, /mjjiəŋ/ 名 *danh*, /mjjiəŋ/ 民 *danh*, /mjjiaw/ 妙 *diêu*, etc.<sup>80</sup> The full explanation of this phenomenon must await more knowledge than we yet have of the internal history of Vietnamese but it is quite evident that the hypothesis of a palatal glide in the Chinese forms provides the necessary precondition. *d* in Vietnamese, pronounced [z] in Hanoi, [j] in the South, is the regular equivalent for Chinese /ɣji/ (earlier a palatal fricative), *th* is the equivalent of the corresponding voiceless initial (i.e. the Grade III part of initial /s/ which was earlier a palatal) and *x* is the equivalent for the Chinese voiceless aspirated palatal affricate. Vietnamese *t* for Chinese /βji/ /β'ji/ does not correspond to the representation of the unaspirated palatal aspirate, which appears as *ch* in Vietnamese, but at least we know that Vietnamese *t* stands for Chinese sibilants.

It must be noted that the Vietnamese evidence only partly matches the rhyme tables. Only those Grade IV words which were in *Ch'ieh-yün* rhymes which also contained Grade III words (the so-called *ch'ung niu*) are treated in this way. Grade IV words from pure Grade IV rhymes in the *Ch'ieh-yün* are treated as ordinary labials in Vietnamese. This must represent a peculiarity of the dialect on which Sino-Vietnamese was based, which in other ways also shows features that diverge from the northern standard.

A vestige of the distinction between Grades III and IV after labials

<sup>80</sup> For further examples see Arisaka, 1962 or Nagel, 1942.

survived in the /iəj/ rhyme group. Grade III words like 悲 /piəj/ 美 /miəj/ lost their palatal medial and became /puəj/ /muəj/, hP *bue mue*, in early Mandarin. Grade IV words lost the palatalization of the initial but retained the palatal medial, as in 比 /pjiaj/ > /piəj/, hP *bi*, 迷 /mjiaj/ > /miəj/ hP *mi*. hP-ags-pa adheres to this rule very regularly. The *Chung-yüan yin-yün* shows the same pattern, as in 披 /p'iaj/ > /p'uəj/ which is a homophone of 醅 /p'uaaj/ > /p'uəj/ and distinct from 紕 /p'iaaj/ > /p'iaj/ or in 眉 /miaj/ > /muəj/, homophonous with 梅 /muaj/ > /muəj/ and distinct from 彌 /miaj/ > /miəj/. Similarly with former *ju-sheng* words 密 /miət/ > /muəj/ and 墨 /maik/ > /muəj/ are homophones, distinct from 蜜 /mjiaj/ > /miəj/ and 寬 /mjiaik/ > /miəj/, which are homophones. There are a fair number of exceptions, however, and this is even more true of modern Mandarin, where a good many words from Grade III have retained the palatal medial, as in 彼 *pe<sup>3</sup>*, 度 *p'ü<sup>2</sup>*, 密 *mi<sup>4</sup>*, etc. Cases in which Grade IV words have followed the Grade III pattern are less common but we have 卑 Man. *pei<sup>1</sup>* and 婢臂 Man. *pi<sup>4</sup>* or *pei<sup>4</sup>*.

Shao Yung treats words like 非微 as Grade IV. I therefore reconstruct them as /fjiaj/ /vjiaj/, etc. This receives support from Tibetan transcriptions which invariably show a medial-*y*- in such words. Following the pattern of other Grade IV words with labial initials, they became /fjiaj/ /vjiaj/ by the Mongol period and they are spelt *fi vi* in hP'ags-pa. In modern Mandarin they have become *fei<sup>1</sup>*, *wei<sup>2</sup>*, but the earlier pronunciation in *-i* is still preserved in the stage pronunciation of Peking opera.<sup>41</sup> In Su-chou also we have 非 [fi] 微 [vi], like 比 [pi] 迷 [mi] (Grade IV) and contrasting with 彼 [pE] 美 [mE] (Grade III).

As has already been noted, the rhyme tables place the retroflex subgroups of the dental stops and sibilants in Grade III and the plain subclass in Grade IV, reversing the order as between Grades I and II. One reason for this was no doubt the fact that "pure" Grade IV rhymes contained only non-retroflex initials, so that to place retroflex initials in Grade III made the construction of the tables somewhat simpler. Apart from this, the plain initials, particularly the sibilants, before *-i-* probably gave a sharper acoustic impression than the retroflex initials which made them seem more analogous to /kj/ and /pj/. As noted above, Amoghavajra's system of transcribing Sanskrit preferred the plain dental sibilants as equivalents for Sanskrit palatals. There was, however, no contrast between palatalized and non-palatalized dentals. Shao Yung, who presented the plain and retroflex initials separately, moved the plain dentals from Grade IV to Grade III. In hP'ags-pa both they and the retroflex initials before /ia/ are spelt sometimes with *-e-*, like Grade III, sometimes with *-ja-* like Grade IV, with no apparent distinction.

<sup>41</sup> Chao Jung-lang, 1969.

### The loss of final stops

For Chinese of the late T'ang period, which still preserved final /p/ /t/ /k/, the reconstruction of words in "entering tone" presents no special problem, since such words simply follow the pattern of corresponding finals /m/ /n/ /ŋ/. Even at that time, however, it would seem that the entering tone finals were realized as voiced fricatives [β] [ð] [ɣ] rather than as stops. This is shown most clearly in the case of final /t/ which appears in Sino-Korean as *-l* and is regularly rendered as *-r* in Tibetan transcriptions, as well as being used for foreign *r* in Chinese transcriptions. Since the entering tone still appears to have kept its abrupt character and been shorter than the other tones, one might conjecture that these fricative finals were glottalized [βʔ] [ðʔ] [ɣʔ], but this is hardly possible to verify.

What is clear is that by the Mongol period final /p/ /t/ /k/ had disappeared altogether in northern Chinese. They do not appear in hP'ags-pa spellings. Entering tone words are entered in the *Meng-ku tsu-yün* as a separate category after corresponding words in the other tones but the correspondence is no longer to words with nasal finals. The *Chung-yüan yin-yün* goes even farther and distributes them among the other tones (though noting their separate origin). Certain ambiguous statements of Chou Te-ch'ing, the author of the *Chung-yüan yin-yün*, have been taken to mean that he still recognized the entering tone as a distinct category in speech, but this may simply be based on his own southerly linguistic background and have no direct bearing on the northern dialect which he was recording in his dictionary. Dialects which preserve a separate *ju-sheng* category with a final glottal stop never split it up and distribute it among the other tones the way the *Chung-yüan yin-yün* does.

The arrangement in the *Meng-ku tsu-yün*, if taken at face value would incline one to think that the hP'ags-pa spellings were based on a dialect in which a separate *ju-sheng*, presumably with a final glottal stop /ʔ/, still survived. On the other hand the spellings correspond, as far as segmental features are concerned, with the principal pattern found in the *Chung-yüan yin-yün* and it seems to me more likely that the separate *ju-sheng* category of the *Meng-ku tsu-yün*, like the separate representation of "muddy" initials, was based on tradition and did not reflect current speech.

The loss of final stops in northern Chinese was already well underway in the eleventh century. Shao Yung classifies the *ju-sheng*, except for /p/, with oral, rather than nasal finals. Other Sung rhyme tables like the *Ch'ieh-yün chih-chang-t'u* give them a double classification, placing them both with nasal finals, in accordance with the earlier tradition, and with oral finals, in accordance with what we may assume was current pronunciation.

The patterns for redistribution of final /p/ /t/ /k/ among the other rhymes that are shown in hP'ags-pa will be seen in detail in the tables at the

end of this article. Final /p/ and /t/ were treated alike. In general both disappeared without leaving any segmental trace except that final zero /Ø/ was strengthened to /i/ when the nucleus was not preceded by a tense semi-vowel, e.g. 答 /tap/ > /tai/, 括 /kwat/ > /kwai/, but 鐵 /t'iat/ > /t'iaØ/, 骨 /kuat/ > /kuØ/ = /ku/. /iəj/ from /iəp/ /iət/ is only an apparent exception since, as we have seen, there was no contrast between /iəj/ and /iəØ/ and it is uncertain whether the phonetic realization was a pure vowel or a diphthong or a free variation between the two. One must recognize a marginal case of /t/ > /j/ in 橘 /kjiuat/ > /kiuəj/, hP. *giue*, (Gfade IV), 屈 /kiuat/ > /kiuəØ/, hP. *giu* (Grade III). This distinction is not found in modern Mandarin which follows the Grade III pattern throughout. /at/ and /ap/ after back initials give /au/ hP. -o, and /uat/ gives /wau/, hP. -wo. This is like the treatment of the /ai/ rhyme and might lead us to suppose that the final consonants had been lost before the shift of /ai/ to /au/. On the other hand /at/ap/ give /ai/, which remains unchanged, after dental initials: 答 /tap/ > /tai/, 刺 /lat/ > /lai/, contrasting with 多 /tai/ > /tau/, 羅 /lai/ > /lau/. We must therefore assume that there was already a rounding of the vowel in /Kap//Kat/ at a subphonemic level before the loss of final consonants.<sup>82</sup>

Grade II words with retroflex initials in the /ət/əp/ rhyme groups would be expected to give /əi/ according to the regular rule, as found in the modern Mandarin forms 瑟 *se* /səi/. hP'ags-pa spells these words with -*li*, which otherwise means /iəØ/, and the *Chung-yüan yin-yün* also places these words in the /iəØ/ rhyme group. Such forms do not seem to be found in any modern dialect and it seems possible, therefore, that the pronunciation was really /əi/ = [ɤ] rather than /iəØ/ = [u] in the dialects that underlay hP'ags-pa and the *Chung-yüan yin-yün* but that /əi/ was at that time such a small category that it was not given separate recognition.

Final /k/ is represented variously as /w//j/ or /Ø/ depending on the preceding vocalism. In hP'ags-pa /aik/ (including earlier /auk/) invariably gives /aw/. This is also the predominant pattern in the *Chung-yüan yin-yün* but another pattern by which /aik/ gave /au/ also appears, sometimes resulting in double readings. Both patterns are found in modern Mandarin, as in 角 *chiao*, as well as *chieh/tsjwəi* from earlier /kjau/, but the /au/ pattern is the most common. /aik/ (Grade II) gives /aj/, spelt -*ay*, and /aik/ (Grades I and II) gives /əj/, spelt -*hiy* (or -*ue* for *uəj*) in *ho-k'ou* in hP'ags-pa. This is also the normal pattern in the *Chung-yüan yin-yün* and is found in modern Mandarin in words like 白 *pai*, 宅 *chai*, 得 *tei*, 黑 *hei*, 北 *pei*. The alternative pattern in Mandarin found in words like 格 *ko*, 伯 *po*,

<sup>82</sup> In non-Mandarin dialects also Middle Chinese /ət/ (Grade I) has generally developed differently after velar and laryngeal initials on the one hand and dental initials on the other, e.g. Cantonese 刺 *kat* v. 刺 *rat*. Just such a shift of /ət/ > /aut/ (= [æ]) before the loss of /t/ would account for what we find in Mandarin. On the other hand Cantonese and other southern dialects also show a similar rounding of Middle Chinese /an/ after back initials which is not found in Mandarin.

深 *se*, 德 *te*, 國 *kuo*, 墨 *mo*, implies a merger of /aik/ with /əik/, parallel to that which took place between /ain/ and /əin/, before the loss of /k/. This development is not found in hP'ags-pa and appears to be represented in *Chung-yüan yin-yün* by one word only namely 塞, earlier /səik/, which is placed in the /iəØ/ rhyme but which is probably to be read /səi/ (see the previous paragraph).

/iaik/ and /əik/ (Grades III and IV) merge as /iəj/ which, as we have seen, was not distinct from /iəØ/ or /iəj/ which had developed from /iət/ and /iəp/. *Ho-k'ou* words are rather rare. In hP they are spelt -*ue* /uəj/, or -*jue* /juəj/, but modern Mandarin implies the existence of alternative forms without final /j/, as in 皿 *hsü* < /xiuəik/ 坂 *yü* < /yiuəik/, spelt *hijue* and *hue* respectively in hP. The only common *ho-k'ou* word in /-iuəik/ was 殺 /ɣjiuəik/. This is spelt *yət* in hP, making it a homophone of 華 /ɣjiuəj/ < /ɣjiuət/, Mandarin *yü*, and, apart from the tone, of 唯 /ɣjiuəj/, Mandarin *wéi*. In Mandarin 殺 has lost its labial element, yielding *tʰ*, as have similar Grade IV words in /ŋ/ like 營 /ɣjiuəin/, Man. *ying*<sup>2</sup>.

The *ju-sheng* of the /əuŋ/ class first underwent a change from /əuk/ to /uək/, like words with nasal finals, leading to a merger of /əuk/ and /iəuək/ as /iəuək/. With the loss of /k/ /uək/ gave /uə/ and /iəuək/ gave /iəuə/, spelt -*u*, -*ju* in hP. Traces of an alternative development in which /k/ was lost without metathesis of /əuk/ to /uək/ are found in a few cases, such as 六 /liəw/ < /liəuk/, Man. *liw*<sup>4</sup>, 肉 /riəw/ < /riəuk/, Man. *jou*<sup>4</sup> (with post-Yüan loss of /j/ after /r/), which are not represented in hP but are found in the *Chung-yüan yin-yün*.

A number of other variant treatments of *ju-sheng* appear in individual words in the *Chung-yüan yin-yün* but these will not be dealt with here.

#### The development of the tones from T'ang to Yüan

An adequate account of the history of the Chinese tones will have to await the development of a theory of the distinctive features involved, including not only the means of dealing with distinctions of pitch and contour but also with the various laryngeal features which often play a part in the phonetic realization of distinctions described as "tonal" in living dialects and which certainly form a bridge historically between segmental features and tones. Certain points are already well established, especially the correlation between the appearance of the two-way split into upper and lower tone registers and the loss of the "clear" "muddy" distinction in stops and fricatives, but even here details remain to be worked out. No theory has yet been put forward to account for the differential treatment of muddy initials in level and oblique tones in Mandarin dialects (and also some non-Mandarin dialects such as Cantonese), nor for the shift from rising to departing tone after muddy initials. One may hazard a shrewd guess that an explanation for these phenomena is to be sought in terms of final laryngeal

features that still characterized the rising and departing tones in Middle Chinese, making these tones and the entering tone together form a single "oblique" (*tsé*) category, but concrete evidence is difficult to find. A related problem is the early collapse of the register distinction in the oblique tones in Madarin contrasting with its retention in level tone.

Meanwhile we can only deal with the question of tones in terms of categories. hP'ags-pa gives us no help for this, since it does not register tone in the spelling and simply follows tradition in the *Meng-ku tsu-yün*. The *Chung-yüan yin-yün* on the other hand already shows the modern Mandarin tonal system fully developed. The following table sets out the pattern of correspondence between the four tone categories of the *Chung-yüan yin-yün* (equivalent to the four basic tone categories of modern Pekingese) and the Middle Chinese level, rising and departing tones.

		Middle Chinese tones		
		level	rising	departing
Middle Chinese initials	clear	1	3	4
	muddy	2	4	4
	not-clear—not-muddy	2	3	4

Mandarin tones:

- 1=yin-p'ing, upper level  
2=yang-p'ing, lower level  
3=shang, rising  
4=ch'ü, departing

There is evidence that the shift from rising to departing tone category after muddy initials had already occurred in the late T'ang period.<sup>83</sup> This is perhaps to be correlated with the new rhyming practice which we find in Li Ho and some other ninth century poets, according to which all *shang* and *ch'ü* tones could rhyme freely together.<sup>84</sup> The phonetic basis for this new convention remains obscure however. It certainly did not involve an actual merger of the two categories since they have remained distinct to the present day. This was also the prevailing convention for Sung *ts'u* poets.

By Northern Sung we find Shao Yung splitting the muddy stops and affricates in two and classing those in level tone with the voiceless aspirates and those in oblique tones with the voiceless non-aspirates as in Modern Mandarin, while still retaining the "clear" "muddy" distinction as well at least in name (see Part I, pp. 211-12). Thereafter the "clear" "muddy" distinction resolved itself into a difference of tonal register and in northern Chinese was lost altogether in oblique tones.

Dialects which retain a final segmental feature in *ju-sheng*, whether as distinct /k/ /t/ /p/ or glottal stop /ʔ/, also continue to treat it as a separate

tone category, sometimes divided into upper and lower registers, but usually unified in northern dialects. Where no segmental feature remains, the old entering tone is distributed among the other tones. The patterns of this redistribution in different Mandarin dialects are quite varied and modern Pekingese has a mixture of these. The *Chung-yüan yin-yün*, however, shows a very consistent pattern of correspondence based on class of initial, as follows:

Initial class	clear	3 <i>shang</i>
	muddy	2 <i>yang p'ing</i>
	not-clear—not-muddy	4 <i>ch'ü</i>

Note that words which had had initial glottal stop /ʔ/ in Middle Chinese do not fall into the "clear" category, as they do in rhyme tables and in the split between upper and lower level tone, but into the "not-clear—not muddy" category. As has been argued above, this shows the loss of /ʔ/ as a distinct initial between T'ang and Yüan, merging with the "zero" initial /y/, as in modern Mandarin.

The pattern of correspondences of the old entering tone in the *Chung-yüan yin-yün* as it survives in modern Pekingese can be illustrated by examples such as the following:

clear initials: 法 *fa*<sup>3</sup>, 甲 *chia*<sup>3</sup>, 渴 *k'o*<sup>3</sup>, 鐵 *t'ieh*<sup>3</sup>

muddy initials: 伐 *fa*<sup>2</sup>, 竭 *chieh*<sup>2</sup>, 奪 *to*<sup>2</sup>, 逐 *chu*<sup>2</sup>

not-clear—not-muddy initials: 惡 *o*<sup>4</sup>, 月 *yüeh*<sup>4</sup>, 墨 *mo*<sup>4</sup>, 蠟 *la*<sup>4</sup>

These are in fact the predominant patterns for words with former muddy and not-clear—not-muddy initials. Exceptions do occur but they are not numerous. In the case of words with former clear initials, however, this is not the case. Reflexes of former entering tone words with clear initials do occur with tone 3 in Pekingese, but they are far outnumbered by cases which show one of the other tones. The probable explanation, as with the variant treatments of the old entering tone in terms of segmental features, is that the forms as found in modern Pekingese are derived from a number of closely related dialect strains and do not represent a single unified tradition.<sup>85</sup>

*hP'ags-pa and the Chung-yüan yin-yün*

The artificial spelling distinctions in hP'ags-pa orthography based on traditional Chinese phonological categories give it the superficial appearance of representing a very different language from that which is found in the more or less contemporary Chinese rhyme dictionary, the *Chung-yüan yin-yün*. When these artificialities are taken into account, however, it turns out that the underlying phonological systems are very similar. hP'ags-pa preserves the difference, lost in the *Chung-yüan yin-yün*, between patalized

<sup>83</sup> Cf. Stimson, 1962 (x). A succinct account of the treatment of the entering tone in Mandarin dialects in general is found in Yüan Chia-hua 袁家驊, *Han-yü fang-yen kai-yao* 漢語方言概要, Peking 1960, p. 41

<sup>84</sup> Chou Tsu-mo, 1958.

<sup>85</sup> Pulleyblank, 1968.

and non-palatalized back initials before /i/ (Grade IV v. Grade III) and the syllabic type /iaŋ/, spelt *-han*, after retroflex initials. *Chung-yüan yin-yün* shows vestiges of a distinction between Grades I and II after labial initials in the /aw/ rhyme which is not represented in hP'ags-pa, and, besides the normal /aik/ > /aw/ pattern of hP'ags-pa, shows an alternative pattern /aik/ > /au/[ɔ], including /jaik/ > /jau/[jɔ], giving rise to a syllabic type not found in hP'ags-pa. Otherwise the difference between the two sources for Yüan dynasty northern Chinese are largely matters of detail in the treatment of individual words.

The system of initials of hP'ags-pa is set out below. The phonemes, placed between slant lines, are followed in each case by transcriptions of the hP'ags-pa letters, those standing for the historically "clear" initials being given first, followed after a semicolon by those standing for the historically "muddy" initials.

/k/ g; k /k'/ k'; k /x/ h; x; h' /ɣ/ ā; ʔ /ŋ/

/t/ d; t /t'/ t'; t //l /n/ n  
/nʃ/ ŋ

/ts/ dz; ts /ts'/ ts'; ts /s/ s; z

/tsr/ j; č /tsr'/ č'; č /sr/ š'; š; č /r/ ž

/p/ b; p /p'/ p'; p /f/ f; f' /v/ w /m/ m; \*w

\* hP has *w* instead of *m* in certain rhymes where Early Middle Chinese /p/ becomes /f/ but /m/ was not affected (see p. 128 above). This must be a theoretical spelling based on the position of these words in the rhyme tables, since no modern dialect shows such forms. Examples are 目 hP *wu* for /muə/ 夢 hP *wuy* for /muəŋ/, 謀 hP *wuw* (miswritten as *k'uw* in the *Meng-ku tsu-yün*) for /muəw/.

The same system of initials is applicable to the *Chung-yüan yin-yün*, except that in the latter there is no distinction between /n/ and /nʃ/ or between /ɣ/ and /rj/ before /i/. The phonemic position of initial /ŋ/ in the *Chung-yüan yin-yün* is doubtful but this is also true of hP'ags-pa, where it may really be an allophone of /ɣ/.

The rhymes in the two systems are similarly set out below. To the left are listed the nineteen rhyme classes of the *Chung-yüan yin-yün*, to the right the fifteen rhyme classes of the *Meng-ku tsu-yün*. In between are placed the syllabic types as reconstructed, between slant lines, followed by the corresponding hP'ags-pa spellings.

CYYY

	hP		
13. 寒麻	/ai/ a	/jai/ ya	/wai/ wa
14. 覃	/ia/ e	/ia/ e	/iua/ we
		*/jia/ ja	*/jiua/ wja
12. 歌戈	/au/ o	/jau/ **	/wau/ wo

CYYY

	hP					
5. 魚模	/uo/ u	/iuə/ iu	5. 魚			
6. 皆來	/aj/ ay	/jaj/ yay	/waj/ way	6. 佳		
4. 齊微	/əj/ hiy	/iəj/ i	/uəj/ ue	*/jiəj/ jue, wi	4. 支	
3. 支思	/iə/ hi	*/jiəj/ yi				
11. 蕭豪	/aw/ aw	/jaw/ yaw	/waw/	/uaw/ **	*/iuaw/ wjaw	10. 蕭
		/iaw/ ew				
		*/jiaw/ jaw				
16. 尤侯	/əw/ hiw	/iəw/ iw	/uəw/ uw, ow		11. 尤	
		*/jiəw/ iw				
12. 江陽	/aiŋ/ aŋ	/jaiŋ/ yaŋ	/waiŋ/ waŋ	/jwaiŋ/ wjaŋ	4. 陽	
			*/iaŋ/ haŋ			
15. 庚青	/əŋ/ hiŋ	/iəŋ/ iŋ	*/wəŋ/ wuŋ		2. 庚	
		*/jiəŋ/ jŋ, yŋ		*** /iuəŋ/ iuŋ		
1. 東鍾			/uəŋ/ uŋ	*** /iuəŋ/ iuŋ	1. 東	
8. 寒山	/an/ an	/jan/ yan	/wan/ wan		8. 寒	
9. 桓歡			/uan/ on			
10. 先天		/ian/ en	/iuan/ jon		9. 先	
		*/jian/ jan, jen	*/jiuan/ wjan			
7. 真文	/ən/ hin	/iən/ in	/uən/ un	/iuən/ iun, win	7. 真	
		*/jiən/ jŋn				
18. 豎咸	/am/ am	/jam/ yam			12. 覃	
19. 廉纖		/iam/ em				
		*/jiam/ jam, jem				
17. 侵尋	/əm/ him	/iəm/ im			13. 侵	
		*/jiəm/ jim				

\* syllable types found in hP but not in CYYY: (a) /ji/ > /i/, (b) /iaŋ/ > /waiŋ/, (c) /wəŋ/ > /uəŋ/ (one word only in hP).

\*\* syllable types found in CYYY but not in hP: (a) /jau/ [jɔ] < /jaik/ or /iaik/, variant for /jaw/ or /jau/, (b) /uaw/ after labial initials in Grade I (derived from Late Middle Chinese /aw/ and preserving the distinction lost in hP, and mostly also in CYYY—when Grade II /jaw/ simplified to /aw/ after these initials).

\*\*\* The spelling *-jun* appears in both rhymes but this is not to be taken as implying a different underlying structure (see pp. 126-7 above).

Note: When more than one hP form is given as equivalent to a single syllabic type, the second form is a variant spelling, usually found with

one or two initials only, which may be assumed to be in complementary distribution with the usual form and not to constitute a phonemically distinct type.

## VI

*A practical phonetic transcription of Late Middle Chinese*

Certain modifications can easily be made to the formulaic reconstruction of Late Middle Chinese which will give a more direct indication of phonetic values and be typographically simpler without sacrificing distinctions.

1. Rewrite the combinations of /ə/ or /a/ + tense semivowels as units: /əi/ = e, /ai/ = æ (or e, or ä), /əu/ = o, /au/ = ä (or ɔ), /əi/ = y, /ai/ = u.
2. After this is done, delete /ə/ whenever it occurs after a tense semivowel, thus: /iə/ = i, /uə/ = u, /iə/ = i, /iua/ = iu.
3. Rewrite /iu/ as y.
4. Rewrite /sr/ as š (or ř).
5. Rewrite /h/ as h (since voiceless aspiration is indicated differently).
6. Rewrite /r/ as zero.

A further simplification that does not lead to any loss of distinction between syllables is to rewrite a and v as a and a (after the application of rules 1 and 2). This, of course, does not make explicit the phonetic contrast between the two values of a and a, which can however be stated contextually: ə is [v] before ŋ, k and zero, otherwise [ə]; a is [a] before ŋ, k and zero, otherwise [a].

*Two poems transcribed*

The following poems are transcribed according to the system outlined in the preceding section. Rising tone is indicated by an acute accent, departing tone by a grave accent. Level and entering tones are not marked.

## (a) Phjak Kia-jij 白居易 Xhwa shyan nriś 胡旋女

Xhwa shyan nriś xhwa shyan nriś  
 aim ʔiaŋ xhjian šiw ʔiaŋ kuś  
 xhjian kuś ʔit šiaŋ šāŋ shiw kiś  
 xhuaj syat p'jiaw jiaw tryān phon vuś  
 tsā shyan lw tryān put trij phij  
 ts'ian tsap vān ts'iw vuś jij šhij  
 rin kjan vut līj vuś k'á pjiij  
 pun ts'ia lyn xhuān shyan fun trhij  
 k'yok tsiaŋ tsāj piāj shiā ts'ian tsāj  
 t'ian tsāj yj tsāj vjij k'jiāj ts'ij  
 xhwa shyan nriś ts'yt K'āŋ-kia  
 thua law toŋ laj vān līj jia  
 triŋŋ yan tsbij iw xhwa shyan ts'ia

胡旋女 胡旋女  
 心應絃 手應鼓  
 絃鼓一聲雙袖舉  
 迴雪飄飄轉蓬舞  
 左旋右轉不知疲  
 千匝萬周無已時  
 人間物類無可比  
 奔車輪緩旋風遲  
 曲終再拜謝天子  
 天子爲之徵落齒  
 胡旋女 出康居  
 徒勞東來萬里餘  
 中原自有胡旋者

tāw mjiaw tsāŋ nōŋ rīj put riś  
 T'ian-pāw kjiij nian šhij jyok piān  
 ts'hin ts'iap rin rin xhjak yan tryān  
 triŋŋ lw T'āj-tāin guāj Lok-šan  
 rīj rin tsuāj thāv nōŋ xhue shyan  
 Li-xwa yan triŋŋ ts'æk tsak fjij  
 kim kjiāj tsiaŋ xhjà jiāŋ yj rīj  
 Lok-šan xhuo shyan mjiāj kyn ŋjān  
 piāŋ kua xhuāŋ-xha ŋij vjij fān  
 Kyj-fjiij xhuo shyan xhuak kyn sim  
 sij k'jij Mjā-guaj niām kjāŋ šim  
 tshyŋŋ tsāj thij trhiok t'ian yj tryān  
 ŋuś šhip nian laj ts'iaj put kim  
 xhuo shyan nriś mak k'ōŋ vuś  
 šāk ts'iaŋ ts'ij ka guś mizē ts'ys

## (b) Li Xha 李賀 Kion ʔjaj ka 宮娃歌

lap kuaŋ kaw xhyan ts'iaw ša k'ōŋ  
 xwa fhaŋ jiā tāw xhōŋ šiw kion  
 shiāŋ k'šw ts'ij xian t'ap toŋ nuān  
 ts'it sizen kwā(j) šhiaŋ vun law pjān  
 xhan rip fhuw sij thian ʔiaŋ xun  
 ts'āj luan liam ŋjak triak šāŋ xhōn  
 thiaj kuś tiāv ŋyat kaw lan xhjà  
 k'yt sit thoŋ p'uə suā ʔa ts'iaŋ  
 muŋ rip kja mun shiāŋ ša ts'iaŋ  
 t'ian xha lak ts'is trhiaŋ ts'iw luē  
 ŋyān kyn kuaŋ miāŋ riś t'āj jiaŋ  
 fāŋ ts'iap khij ŋiə p'jiāj pua k'ie

關妙爭能解不  
 天賀季年時欲  
 臣妾人人學圖  
 中人大真外山  
 二花圓中惜作  
 梨花園中惜作  
 金花園中惜作  
 露山胡旋迷君  
 兵遇黃河疑未  
 貴妃胡旋惑君  
 死棄馬兒念更  
 從茲地軸天維  
 五十年來制不  
 胡旋女莫空舞  
 數唱此歌倍明

蠟光高懸照紗空  
 花房夜擣紅守宮  
 象口吹香氈踐暖  
 七星挂城闌灑板  
 寒入紫微殿影昏  
 彩雲籠額著霜痕  
 啼蛄吊月鉤欄頭  
 屈膝銅鋪阿顛  
 夢入家門上沙渚  
 天河落處長洲路  
 願君光明如太陽  
 放妾騎魚橫波去

## VII

*Explanation of the Tables*

The following tables are intended to illustrate the reconstruction of Late Middle Chinese, especially the new theory of the four grades which is here propounded. Examples are given with one initial from each of the major classes combined with every possible medial and rhyme. Changes that occurred between T'ang and Yüan (as represented by hP'ags-pa orthography) are indicated. Readings are given in Kan'on, Sino-Vietnamese, Sino-Korean and hP'ags-pa.

Chinese readings are given without slant lines in a slightly modified version of the phonological formulas used in the text proper. That is, ə is omitted when it occurs structurally after a tense semivowel and before zero consonant—e.g. ku for /kuə/ = [ku], sri for /sriə/ = [w] etc.

Since the intention for the present is to provide illustrations rather than an exhaustive inventory of the correspondences between Late Middle Chinese and Kan'on, Sino-Vietnamese and Sino-Korean, and between early Mandarin and hP'ags-pa, no attempt has been made to give all possible alternants, variant readings with annotations as to sources, etc. KO forms added in brackets are taken from the early glosses recorded in the Shōsōin manuscript of the *Meng-ch'iu* (see Arisaka 1944 (1957), pp. 609-616).

Initial 見 k (supplemented by 群 kh and 溪 k')

	KO	SV	SK	hP
I/II -ai (a) k'ai				
1. 歌 kai > kau [ɔ]	ka	ca	ka	go
2. 加 kjai	ka	gia	ka	gya
3. 茄 khiai > k'ia [ie]	ka	cà, gia	kja	ke(?)
(b) ho				
1. 戈 kuai > kwau [wɔ]	kwa	qua	koa	gwo
2. 瓜 kwai	kwa	qua	koa	gwa
3. 茄 khui > k'iu [ye]		cài(1)	ka	kwe
III -ai (a) k'ai				
3. 居 kiai [iv] > kiu [y]	kyo	cu'	ke	giu
(b) ho				
1. 古 kuai > ku	ko	có	ko	gu
3. 俱 kiuai > kiu	ku	cu	ku	giu
IV -aj (a) k'ai				
1. 改 kaj	kai	cái	改 kaj	gay
2. 皆 kjaj	kai	giai	皆 kaj	gyay
			介 kaj	
			階 kjej	
			誼 kej	gi
3. 開 kiaj > kiaj[ɨ]	kei	kê	開 kjej	
4. 雞 kjiaj > kjiaj	kei	kê	雞 kjej	gi
(b) ho				
1. 塊 kuaj > kuaj [uj]	kwai	cói	塊 koj	gue
2. 怪 kwaj	kwai	quái	怪 koj	gway
			掛 koaj	
3. 開 kiuaj > kuaj	kei		開 kuej	gue
4. 桂 kjiuaj > kiuaj	kei	quế	桂 kjej	giue
			闕 kju	
V -aj (a) k'ai				
3. 基 kiaj	ki	ky	kij	gi
4. 業 k'iaj	ki	khá	kji	k'ii

	KO	SV	SK	hP
(b) ho				
3. 龜 kiuaj > kuaj	ki (kwi)	qui	kuj	gue
4. 葵 kjiuaj > kiuaj	ki (葵 kwi)	qul	葵 kju 季 kjej	giue
VI -aw				
1. 高 kaw	kau	cao	ko	gaw
2. 交 kjaw	kau	giao	kjo	gyaw
3. 矯 kiaw	keu	kiéu	kjo	gew
4. 驍 kjiaw	keu	kiéu	kjo	giaw
VII -aw				
1. 鈞 kaw	kou	cáu	ku	ghiw
3. 九 kiaw	kiu	cúu	ku	giw
4. 糾 kjiew	kiu	cú	kju	giw
VIII -ain (a) k'ai				
1. 岡 kain	kau	{ cang cưong	kan	gan
3. 張 kiaij > kjaij	kyau	cưong	kan	gyan
(b) ho				
1. 光 kuaij > kwaij	kwau	quang	koaj	gwan
3. 誼 kiuaij > kwaij	kyau	cưong	koaj	gwan
		(誼 kwyau)		
IX -ain (a) k'ai				
1. 互 kaij [vɨ] > kəj	kou	cang	kin	ghin
3. 競 kiaij > kiaj [iɨ]	kyou	cang	kin	gin
(b) ho				
1. 脛 kuaij > kuaj	kou	quán	koij	gun
X -ain (a) k'ai				
2. 耕 { kiaij > kjaij kaij > kəj	kau	canh	耕 kjen 更 kajj	giin
3. 京 kiaij > kiaj	kei	kinh	kjen	gin
4. 經 kjaij > kjaij	kei	kinh	kjen	giin
(b) ho				
2. 橫 kwaij > kuaj	kwau	quáng 橫 hoanh	koij	gun
3. 橫 kiuaij > kiuaj	kei	canh	kjen	giin
		頃 khoanh		
4. 迴 kjiuaj > kiuaj	kei	quynh	kjen	giin
XI -auj				
2. 江 kjaunj > kjaunj	kau	giang	kan	gyan

	KO	SV	SK	hP
XII -əuŋ (a) k'ai				
1. 公 kəuŋ > kuaŋ	kou	cōng	koŋ	guŋ
3. 可 kiəuŋ > kiəuŋ (b) ho	kyuu	cung	kuŋ	giuŋ
3. 恭 kiəuŋ > kiəuŋ	kyou	cung	koŋ	giuŋ
	(kwyou)			
XIII -an (a) k'ai				
1. 干 kan	kan	can	kan	gan
2. 間 kjan	kan	gian	kan	gyan
3. 建 kian	ken	kiēn	ken	gen
4. 見 kjian	ken	kiēn	kjen	gian
(b) ho				
1. 官 kuan	kwan	quan	koan	gon
2. 關 kwan	kwan	quan	koan	gwan
3. 眷 kiuan	ken	quyēn	kuen	gion
	(元 gwen)			
4. 絹 kjiuan	ken	quyēn	kjen	gwian
	(玄 kwēn)			
XIV -ən (a) k'ai				
1. 根 kan	kon	cān	kin	ghin
		艮 cān	艮 kōn	
3. 巾 kian	kin	cān	kin	gin
4. 緊 kjiən	kin	cān	kjin	gjin
(b) ho				
1. 昆 kuən	kon	cōn	kon	gun
3. 軍 kiūən	kun	quān	kun	giun
	(群 kun)			
	君 kin		君 kjun	
	(郡 kwīn)			
4. 均 kjiuən > kiuan	kin (kwīn)	quān	kjun	giun
XV -am				
1. 甘 kam	kan	cam	kam	gam
2. 監 kjam	kan	giam	kam	gyam
3. 劍 kiam	ken	kiēm	kem	gem
4. 兼 kjam	ken	kiēm	kjem	gjam
XVI -əm				
3. 衿 kiam	kin	cām	kim	gim
		金 kim		
VIIIj -aik (a) k'ai				
1. 各 kaik > kaw	kaku	các	kak	kaw

	KO	SV	SK	hP
3. 脚 kiaik > kiaw	kyaku	cúrc	kak	gew
			騰 kjak	
(b) ho				
1. 郭 kuaik > kwaw	kwaku	quách	koak	gwaw
3. 鑊 kuaik > kiaw	kwaku	quác	koak	gwaiw
IXj -aik (a) k'ai				
1. 克 k'əik > k'əj	koku	khác	刻 kək	k'huy
			克 kik	
3. 棘 kiaik > kiəj	kyoku	cúrc	kik	gi
(b) ho				
1. 國 kuəik > kuəj	koku	quéc	kuk	gue
Xj -aik (a) k'ai				
1. 格 { kjaik > kjaj	kaku	cách	格 kjek	gyay
kaik			客 kəjk	
3. 戟 kiaik > kiej	keki	kích	kik	gi
4. 激 kjaik > kjiəj	keki	kích	kjek	gji
(b) ho				
2. 戟 kwaik > kwaj	kwaku	quéc	kojk	gwaj
4. 鷓 kjiuaik > kiuaŋ	keki		kjej	giue
XIj -auk				
2. 覺 kjauk > kjaw	kaku	giác	kak	gyaw
XIIj -əuk (a) k'ai				
1. 谷 kəuk > ku	koku	cóc	kok	gu
3. 菊 kiəuk > kiū	kiku	cúc	kuk	giū
(b) ho				
3. 曲 k'iuəuk > k'iu	kyoku	khúc	kuk	k'iu
XIIIj -at (a) k'ai				
1. 割 kat > kau [ɔ]	katu	cát	kal	go
2. 莢 kjat > kjai	katu	giát	kal	kya
3. 揭 kiat > kia	ketu	kiét	kei	ge(?)
4. 結 kjiat > kjia	ketu	kiét	kjel	gia
(b) ho				
1. 括 kuat > kwau [wə]	kwatu	quát	koal	gwo
2. 刮 kwat > kwai	kwatu	quát	koal	gwa
3. 厥 kiuat > kiua	ketu	quyét	kuel	gwe
	(關 kwetu)			
4. 決 kjiuat > kjiua	ketu	quyét	kjel	gwja
	(穴 kwetu)			



	KO	SV	SK	hP
XIVj -ət (a) k'ai				
1. 訖 kiət > kiəj	kitu	căt	乞 kel 訖 kil	gi
4. 吉 kjiet > kjiaj	kitu	căt 詰 căt	kjil	gii
(b) ho				
1. 骨 kuət > ku	ko <u>tu</u>	côt	kol 窟 kul	gu
3. 屈 k'iuət > k'iu	kutu	khuăt	kul	giu
4. 橘 kjiuət > kiuəj	kitu (kwitu)	quăt	kjul	giuc
XV -ap				
1. 闕 kap > kau [ɔ]	kahu	cáp	kap	go
2. 甲 kjap > kjai	kahu	giáp	kap kjap	gya
3. 劫 kiap > kia	kehu	kiəp	kep	ge(?)
4. 頰 kjiap > kjia	kehu	giáp(!)	hjep	gia
XVIj -əp				
3. 急 kiəp > kiəj	kihu	cáp	kip	gi
Initials 端 t and 知 tr (supplemented by 定 ti and 澄 trɿ)				
	KO	SV	SK	hP
I/II ai (a) k'ai				
1. 多 tai > tau [ɔ]	ta	ða	ta	do
2. 吒 trai > tsrai	ta	tra		
4. 著 tiai > tia				
(b) ho				
1. 朵 tuai > twau [wɔ]	ta	đóa	t'a	dwo
2. 槌 trwai > tsrwai	ta		coa	jwa
III -ai (a) k'ai				
3. 豬 triət > tariu [y]	tyo	trư	cje 著 tje	jju
(b) ho				
1. 都 tuai > tu	to	đô	to	du
3. 殊 triuət > tsriu [y]	tyu	tru	cju	jju
IV -aj (a) k'ai				
1. 戴 taj	tai	đái	təj	day
3. 滯 trhəj > tsriəj	tei	trệ	c'jej	ji
4. 帶 tɿj > tɿəj	tei	đế	tjej	di

	KO	SV	SK	hP
(b) ho				
1. 對 tuəj > tuəj	tai	đái	堆 toj təj	due
3. 緹 triuəj > tsruəj	tei			c'jej
V -əj (a) k'ai				
3. 知 triəj > tsriəj	ti	tri	tji	ji
(b) ho				
3. 追 triuəj > tsruəj	tui	truy	c'ju	jue
VI -aw				
1. 刀 taw	tau	đao	to	daw
2. 嘲 traw > tsraw	tau	trào	tjo	jaw
3. 朝 triaw > tsriaw	teu	triêu	tjo	jew
4. 鳥 tiaw	teu	điểu	tjo	djaw
V -əw				
1. 斗 təw	tou	đâu	tu	dhiw
3. 晝 triəw > tsriəw	tiu	trú	tju	jiw
VIII -aiŋ (a) k'ai				
1. 當 taiŋ	tau	đang	taŋ	daŋ
3. 張 triaiŋ > tsraiŋ	tyau	trương	tjaŋ	jaŋ
IX -əiŋ (a) k'ai				
1. 等 təiŋ > tətŋ	tou	đẳng	tiŋ	dhiŋ
3. 徵 triaiŋ > tsriaiŋ	tyou	trưng	tjiŋ	jiŋ
X -aiŋ (a) k'ai				
1. 打 taiŋ		đá đánh	tjeŋ	
2. 打 triaiŋ > tsəŋ	tau		cejŋ	jhiŋ
3. 貞 triaiŋ > tsriaiŋ	tei	trinh	tjeŋ	jiŋ
4. 丁 triaiŋ > tianŋ	tei	đinh	tjeŋ	diŋ
XI -auŋ				
2. 椿 trauŋ > tsrwaiŋ	tau		coaŋ	jwaŋ
XII -əuŋ (a) k'ai				
1. 東 təuŋ > tuəŋ	tou	đông	toŋ	duŋ
3. 中 triəuŋ > tsruəŋ	tyuu	trung	t'juŋ	juŋ
(b) ho				
3. 冢 triuəuŋ > tsruəŋ	tyou	trung	t'joŋ	juŋ

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	KO	SV	SK	hP
XIII -an (a) k'ai				
1. 單 tan	tan	đơn	tan	dan
		彈 dan		
3. 展 trian > tsrian	ten	triển	tjen	jian
4. 典 tian	ten	diển	tjen	den
(b) ho				
1. 端 tuan	tan	đoan	tan	don
3. 轉 triuan > tsriuan	ten	傳 truyền	tjen	fwjan
XIV -ən (a) k'ai				
3. 珍 triən > tsriən	tin	trần	tjin	jin
(b) ho				
1. 敦 tuən	ton	đôn	ton	dun
3. 屯 triuən > tsriuən	tyun	truân	cjun	jiun
XV -am				
1. 擔 tam	tan	đam	tam	dam
2. 站 tram > tsram	tan	trạm	c'am	jam
3. 審 triam > tsriam	ten	triếm	c'jem	jem
4. 店 tiam	ten	diếm	t'jem	dem
XVI -əm				
3. 砧 triəm > tsriəm	tin	trâm	t'jin	jin
VIIIj -aik (a) k'ai				
3. 著 triaik > tsriaw	tyaku	trưóc	t'jak	jew
IXj -aik				
1. 擲 tsik > tāj	toku	đúc 得 đắc	tek 得 tik	dhiy
(a) k'ai				
3. 涉 triaik > tsriaj	tyoku	trắc 直 trực	c'jek	ji
Xj -aik (a) k'ai				
2. 宅 trhaik > tsraj	taku	trạch	t'ajk	đay
4. 酌 tiaik > tiaj	teki	dịch	tjek	di
XIj -auk				
2. 卓 trauk > tsraww	taku	trắc	t'ak	fwaw
XIIj -auk (a) k'ai				
1. 篤 tək > tu	toku	đốc	tok	du
3. 竹 triauk > tsriu	tiku	trắc	t'juk	jiu
(b) ho				
3. 冢 triuək > tsriu	tyoku		c'jok	jiu

	KO	SV	SK	hP
XIIIj -at (a) k'ai				
1. 但 tat > tai	tatu	dát	tal	da
3. 哲 triat > tsria	tetu	triết	t'jei	jiá
4. 窒 tiat > tia	teru		tjel	día
(b) ho				
1. 撥 tuat	tatu	đốt	t'ai	dwo
2. 瀾 trwat > tsrwai	tatu		c'oal	fwá
3. 輟 triuat > tsriua	tetu	chuyết	t'jel	fwá
XIVj -at (a) k'ai				
3. 窒 triat > tsriaj	titu	trắc	cjil	ji
(b) ho				
1. 咄 tuət > tu	totu		tol	du
3. 緝 triuət > tsriu	tyutu		c'jul	jiu
XVj -ap				
1. 答 tap > tai	tahu	đáp	tap	da
2. 答 trap > tsrai	tahu	trát	cap	fa
3. 輒 triap > tsria	tchu	triếp	cjep	fiá
4. 跼 tiap > tia	tehu		tjep	día
XVIj -əp				
3. 繫 triəp > tsriəj	tihu	chắp(!)	c'jip	ji
Initials 幫 p and 非 f (supplemented by 並 pfi and 奉 ffi)				
I/II -ai (a) k'ai				
2. 巴 pjai > pai	ha	ba	p'a	ba
(b) ho				
1. 波 puai > pwau [wə]	ha	ba	p'a	bwo
III -ai (b) ho				
1. 布 puai > pu	ho	bổ	p'o	bu
3. 府 puai > fu'	hu	phủ	pu	fu
IV -aj (a) k'ai				
2. 拜 pajai > paj	hai	bái	攝 p'aj	bay
			paj	
4. (a) 蔽 pjiəj > piəj	hei	tế	p'jei	bi
(b) 閉 pjiəj > piəj		bế	p'jei	bi
(b) ho				
1. 杯 puaj > puəj	hai	bôi	貝 paj	bue
			paj	
3. 廢 piəuj > fjiaj > fəj	hai	phế	p'jei	fi

	KO	SV	SK	hP
V-əj (a) k'ai				
3. 彼 piəj > puəj	hi	bi	p'ji	bue
4. 卑 pjiəj > piəj	hi	ty	pji	bi
(b) ho				
3. 非 piuaŋ > fjiəj > fiəj	hi	phi	pji	fi
VI-aw				
1. 賈 paw > puaw > paw	hau (hou)	báo	po	baw
2. 包 pjaw > paw	hau	bao	{ 豹 p'jo p'ó	baw
3. 裴 piaw	heu	biəu	p'jo	bew
4(a). 纒 pjiaw > piaw	heu	tiəu	p'jo	bew
VII-əw				
1. 搭 paw	hou		pu	buw
3. 俯 piuaŋ > fuəw	huu	phāu	pu	fuw
4(a). 彪 pjiaw > piaw	hiu	buru	p'ju	biw
VIII-aiŋ (a) k'ai				
1. 幫 paiŋ	hau	bang	paŋ	baŋ
(b) ho				
3. 方 piuaŋ > faiŋ	hau	{ 放 phóng phưông	paŋ	faŋ
IX-aiŋ				
1. 崩 pəiŋ > pəŋ	hou	bāng	piŋ	bhiŋ
3. 冰 piəiŋ > piəŋ	hyou	bāng	pjiŋ	biŋ
X-aiŋ				
2. 迷 paiŋ > pəŋ	hau	binh	{ 閉 p'əiŋ piŋ	bhiŋ
3. 兵 piəiŋ > piəŋ	hei	binh	pjiŋ	biŋ
4(a). 并 pjiəiŋ > piəŋ	hei	tinh	pjiŋ	biŋ
(b). 屏 phjiəiŋ	hei	binh	pjiŋ	piŋ
XI-əuŋ				
2. 邦 pjaŋ > paŋ	hau	bang	paŋ	baŋ
XII-əuŋ (a) 1. 瓏 pouŋ > puəŋ	hou		poŋ	buŋ
3. 風 piuaŋ > fuəŋ	huu	{ 風 phùng phong	p'əuŋ	fuŋ
(b)				
3. 封 piuaŋ > fəuŋ > fuəŋ	hou	phong	poŋ	fuŋ
XIII-an (a) k'ai				
2. 班 pian > pan	han	ban	pan	ban
3. 變 pian	hen	bién	pjen	bjan
4(a). 纒 pjian > pian	hen	tién	p'jen	bjan
(b). 邊 pjian > pian	hen	bién	pjen	bjan

	KO	SV	SK	hP
(b) ho				
1. 半 puan	han	bán	pan	bon
3. 蕃 piuan > fan	han	{ phién 反 phán	pan	fan
XIV-ən (a) k'ai				
3. 彬 pian	hin	bán	pjin	bin
4(a). 賓 pjian > pian	hin	tán	pjin	bin
(b) ho				
1. 本 puən	hon	{ bôn bân	pon	bun
3. 分 piuan > fuən	hun	phân	pun	fun
噴 phún				
XV-am (a) k'ai				
3. 彪 piam	hen	biém	p'jem	bem
(b) ho				
3. 凡 phiuam > fham > fam	han	phàm	pam	fam
XVI-əm				
3. 菓 piəm	hin	bám	p'im	bim
VIIIj -aik (a) k'ai				
1. 博 paik > paw	haku	bác	pak	baw
IXj -aik				
1. 北 paik > puəj	hoku	bắc	pik	bue
3. 逼 piaik > puəj	hyoku	búc	pjek	bue
Xj -aik				
2. 伯 paik > paj	haku	{ 百 bách 伯 bá	paik	bay
3. 璧 piaik > puəj	heki	bích	pjek	bue
4(a). 辟 pjiak > piəj	heki	辟 tích	pjek	bi
(b). 璧 pjiak > piəj	heki	bích	pjek	bi
XIj -auk				
2. 刺 pjauk > paw	haku	{ bó bác		baw
XIIIj -at (a) k'ai				
2. 八 pjat > pai	hatu	bát	p'al	ba
3. 煎 piat > pia			pjel	bja
4(a). 韃 pjiat > pia	hetu	biết	pjel	bja
(b). 閉 pjiat > pia			pjel	bja
(b) ho				
1. 撥 puat > pau	hatu	bát	pal	bo
3. 發 piuat > fat > fai	hatu	phát	pal	fa

	KO	SV	SK	hP
XIVj -at (a) k'ai				
3. 筆 piət > puəj	hitu	büt	p'jil	bue
4. 必 pjiət > piəj (b) ho	hitu	tät		bi
3. 弗 piuat > fuət > fu	hutu	phät	pul	fu
XVj -ap				
3. 法 piuap > fap > fai	hahu	pháp	pap	fa
XIIj -auk				
1. 卜 pəuk > pu	hoku	bōc	pok	bu
3. 福 piuəwk > fu	huku	phúc	puk	fu

Initials 精 ts and 照 tsr (supplemented by 從 tsñ and 狀 (t)sñ, etc.)

I/II -ai (a) k'ai

1. 左 tsai > tsau	sa	tā	coa	dzo
2. 詐 tsrai	sa	trā	sa	ja
			樟 ca	
3. 者 tsriai > tsria	sya	giā	c'ja	jja
4. 倍 tsiai > tsia (b) ho	sya	tā	c'ja	dzja
1. 挫 tsuai > tswau	sa	toā	coa	dzwo
2. 差 tsrwai	sa		coa	jwa

III -ai (a) k'ai

2. 阻 tsrai > tsru	syo	trō	co	ju
3. 諸 tsriai > tsriu	syo	chur	cje	jju
4. 直 tsiai > tsiu (b) ho	syo	zr tur	cje	dzju
1. 租 tsuai > tsu	so	tō	co	dzu
2. 務 ts'uai > tsru	syu	sō	c'u	č'u
3. 朱 tsriuai > tsriu	syu	chu	cju	jju
4. 取 tsiuai > tsiu	syu		c'ju	dzju

IV -aj (a) k'ai

1. 吳 tsaj	sai	tai	cəj	dzay
2. 齋 tsraj	sai	trai	cəj	jay
			債 c'aj	
3. 齋 tsriaj > tsriəj	sei	chē	cjej	ji
4. 齋 tsiaj > tsiej (b) ho	sei	tē	cjej	dzi
1. 齋 tsuaj > tsuəj	sai	tōi	c'oj	dzue
3. 齋 tsriuaj > tsruəj	sei	chue	c'juəj	jue
4. 齋 tsiuaj > tsuəj	sei		cjej	

	KO	SV	SK	hP
V -əj (a) k'ai				
2. 韜 tsəj > tari	si	tri	c'ij	jhi
			剃 ca	
3. 支 tsriəj	si	chi	cji	ji
4. 子 tsiej > tsai (b) ho	si	{ rī tý	cə	
2. 劑 tsrəj > tsrwaj			cə	揣 č'way
3. 維 tsriuəj > tsruəj	sui	chuy	c'ju	jue
4. 醉 tsiuəj > tsuəj	sui	tüy	c'juj	dzue
VI -aw				
1. 早 tsaw	sau	tāo	co	dzaw
2. 爪 tsraw	sao	trāo	co	jaw
3. 照 tsriaw	seu	chiəu	cjo	jew
4. 焦 tsiaw	seu	tiəu	c'jo	dzew
VII -əw				
1. 走 tsəw	sou	tāu	cu	dzhiw
2. 齋 tsrəw	siu	trāu	c'u	jhiw
3. 周 tsriəw	siu	chāu	cju	jjiw
4. 酒 tsiaw	siu	tūu	cju	dziiw
VIII -ain (a) k'ai				
1. 菲 tsain	sau	tang	caŋ	dzan
2. 莊 tsrain > tsriain > tsrwain	sau	trang	caŋ	jhan
3. 章 tsriain > tsrain	syau	churəng	cjaŋ	jan
4. 將 tsiaain > tsjain	syau	turəng	cjaŋ	dzjan
IX -ain (a) k'ai				
1. 增 tsəin > tsəŋ	sou	təng	ciŋ	dzhiŋ
3. 靈 tsriəin' > tsriəŋ'	syou	churəng	ciŋ	jiŋ
4. 領 tsiaain > tsiaŋ'	syou		ciŋ	dziŋ
X -ain (a) k'ai				
2. 爭 tsrain > tsrəŋ	sau	tranh	cəŋ	jhiŋ
3. 正 tsriain > tsriəŋ	sei	chinh	cjeŋ	jin
4. 精 tsiaain > tsiaŋ	sei	tinh	cjeŋ	dziŋ
XI -aun				
2. 恩 ts'raun > tsr'wain	sau	song	c'əŋ	č'wan
XII -əun (a) k'ai				
1. 總 tsəun > tsuəŋ	sou	təng	coŋ	dzun
3. 終 tsriəun > tsruəŋ	syuu	chung	cjoŋ	jun
			衆 cjuŋ	

	KO	SV	SK	hP
(b) <i>ho</i>				
3. 鑿 tsriuəŋ > tsruəŋ	syou	chung	cjoŋ	juŋ
4. 從 tsiuəŋ > tsiuəŋ	syou	tung	cjoŋ	dzjuŋ
XIII -an (a) <i>k'ai</i>				
1. 贊 tsan	san	tán	c'an	dzan
2. 蓋 tsran	san	trán	can	jan
3. 戰 tsrian	sen	chién	cjen	jen
4. 煎 tsian	sen	tién	cjen	dzen
(b) <i>ho</i>				
1. 鑽 tsuan	san	toan	c'an	dzon
2. 踪 tsrwan	san		can	jwan
3. 專 tsiuən	sen	chuyên	cjen	jwjan
4. 鑄 tsiuən	sen	tuyên	cjen	dzwjjan
XIV -ən (a) <i>k'ai</i>				
2. 藥 tsrən	sin	trán	cjin	jhin
3. 眞 tsriən	sin	chân	cjin	jin
4. 津 tsien	sin	tân	cjin	dzin
(b) <i>ho</i>				
1. 尊 tsuən	son	tôn	con	dzun
3. 諄 tsriuən	syun	chuán	cjiun	jjun
4. 僞 tsiuən	syun	tuán	cjun	dzjun
XV -am				
1. 簪 tsam	san	tam	c'am	dzam
2. 斬 'tsram	san	trám	c'am	jam
3. 占 tsriam	sen	chiém	cjem	jem
4. 漸 tsiam	sen	tiém	cjem	dzem
XVI -əm				
2. 簪 tsrəm	sin	trám	cəm	jhim
3. 斟 tsriəm	sin	chám	c'jim	jim
4. 浸 tsiam	sin	tám	c'jim	dzim
VIIIj -aik (a) <i>k'ai</i>				
1. 作 tsaik > tsaw	saku	tác	cak	dzaw
3. 酌 tsriaik > tsriaw	syaku	churóc	cjak	jew
4. 雀 tsiaik > tsiaw	syaku	turóc	cjak	dzjaw
IXj -əik (a) <i>k'ai</i>				
1. 則 tsəik > tsəj	soku	tác	cik	dzhiy
2. 側 tsrəik > tsrəj	soku	trác	c'ik	jhiy
3. 職 tsriəik > tsriəj	syoku	chúrc	cik	ji
4. 卽 tsioəik > tsioəj	syoku	túrc	cik	dzi

	KO	SV	SK	hP
X -aik (a) <i>k'ai</i>				
2. 窄 tsraik > tsraj	saku	trách	c'əjk	ǰay
3. 隻 tsriaik > tsriəj	seki	chích	c'jek	ǰi
4. 積 tsiaik > tsiaj	seki	tích	cjek	dzi
XI -auk				
2. 捉 tsrauk > tsrwaw	saku	tróc	c'ak	ǰwaw
XII -əuk (a) <i>k'ai</i>				
1. 鏃 tsəuk > tsu	soku	族 təc	cok	dzu
3. 粥 tsriək > tsriu	syuku	chúc	cjuk	ǰiu
4. 蹙 tsiauk > tsiu (b) <i>ho</i>	syuku		c'juk	dzju
3. 燭 tsriuək > tsriu	syoku	chúc	c'jok	ǰiu
4. 足 tsiuək > tsiu	syoku	túc	cjok	dzju
XIII -at (a) <i>k'ai</i>				
1. 撈 tsat > tsai	satu		c'al	dza (?)
2. 札 tsrat > tsrai	satu	trát	c'al	ǰa (?)
3. 折 tsriat > tsria	setu	chiết	cjel	ǰja
4. 節 tsiat > tsia (b) <i>ho</i>	setu	tiết	cjel	dzja
1. 撮 tsuat > tswau		toát	c'oal	dzwo
2. 苗 tsrwat > tsrwai	satu		c'oal	ǰwa
3. 拙 tsriuət > tsriuə	setu	chuyết	cjel	ǰwja
4. 絕 tsiuət > tsia	setu		cjel	dzwja
XIV -ət (a) <i>k'ai</i>				
2. 櫛 tsrət > tsrəi	situ	trát	cil	ǰhi
3. 質 tsriət > tsriəj	situ	chất	cjil	ǰi
4. 聖 tsiaət > tsiaj (b) <i>ho</i>	situ		cil	dzi
1. 卒 tsuət > tsu	sotu	tốt	col	dzu
4. 卒 tsiuət > tsiu	syutu		cul	dzju
XVj -ap				
1. 匝 tsap > tsai	sahu	táp	cap	dza (?)
2. 眨 tsrap > tsrai	sahu	cháp(!)	cap	ǰa (?)
3. 攝 tsriap > tsria	sehu	摺 chiết	cjep	ǰja
4. 接 tsiap > tsia	輯 sehu 接 setu	tiết	cjep	dzja
XVIj -əp				
2. 戢 tsrəp > tsrəi	sihu		cip	ǰhi
3. 執 tsriəp > tsriəj	sihu	cháp	cjip	ǰi
4. 集 tsɦiəp > tsiaj	sihu	táp	cjip	tsi

	KO	SV	SK	hP
Initial 影 ?				
I/II -ai (a) <i>k'ai</i>				
1. 阿 ?ai > ʔau	a	a	a	fiə
2. 鴉 ?jai > ʔjai (b) <i>ho</i>	a	{ nha a	a	y'a
1. 倭 ?uai > ʔwau	wa	渦 oa	oa	fiwo
2. 窩 ?wai > ʔwai	wa		oa	fiwa
III -ai (a) <i>k'ai</i>				
3. 於 ?iai > ʔiu (b) <i>ho</i>	yo	ur	e	fiju
1. 惡 ?uai > ʔu	wo	é	o	fiu
3. 紆 ?iuəi > ʔiu	u	vu	u	fiju
IV -aj (a) <i>k'ai</i>				
1. 哀 ?aj > ʔaj	ai	ai	{ 藹 aj əj	fiay
2. 娃 ?jaj > ʔjaj	ai	陰 ai	陰 əj	y'a
3. 牽 ?iaj > ʔiaj	ei		jej	fi
4. 翳 ?jiaj > ʔjiaj (b)	ei	é	jej	y'i
1. 隈 ?uaj > ʔuəj	wai	ôi	oj	fiue
2. 蛙 ?waj > ʔwaj	wai	oa	oaj	
4. 蛙 ?jiuaj > ʔjiuəj	ei		ju	fiwi
V -əj (a) <i>k'ai</i>				
3. 依 ?iaj > ʔiaj	i	y	ij	fi
4. 伊 ?jiaj > ʔjiaj (b) <i>ho</i>	i	y	ji	y'i
3. 威 ?iuəj > ʔuəj	wi	{ uy oai	uj	fiue
VI -aw				
1. 媿 ?aw > ʔaw	au	奧 áo	o	fiaw
2. 拗 ?jaw > ʔjaw	au	ao	jo	y'aw
3. 天 ?iaw > ʔiaw	eu	yêu	jo	fiaw
4. 要 ?jiaw > ʔjiaw	eu	yêu	jo	y'jaw
VII -əw				
1. 歐 ?əw > ʔəw	ou	âu	u	fihiw
3. 憂 ?iəw > ʔiəw	iu	uru	u	fiw
4. 幽 ?jiəw > ʔjiəw	iu	u	ju	y'iw

	KO	SV	SK	hP
VIII -aig (a) <i>k'ai</i>				
1. 慈 <sup>2</sup> aig > ɣaig	au	𪛗 áng	𪛗 aŋ	fiəŋ
3. 央 <sup>2</sup> iaig > ɣjaig	yau	𪛗 ōng	aŋ	fijaŋ
(b) <i>ho</i>				
1. 汪 <sup>2</sup> uaig > ɣwaig	wau	uōng	oaŋ	fiwaŋ
3. 枉 <sup>2</sup> iuaiŋ > ɣwaig	wau	uōng	oaŋ	fiwaŋ
IX -əiŋ (a) <i>k'ai</i>				
3. 應 <sup>2</sup> iəiŋ > ɣiəiŋ	you	urŋg	iŋ	fiŋ
X -aiŋ (a) <i>k'ai</i>				
2. 櫻 <sup>2</sup> jaig > ɣjiəŋ	au	anh	əjŋ	y'ŋ
3. 英 <sup>2</sup> iaig > ɣiəŋ	ei	anh	jejŋ	fiŋ
4. 嬰 <sup>2</sup> jiaig > ɣjiəŋ	ei	anh	jejŋ	y'ŋ
(b) <i>ho</i>				
2. 泓 <sup>2</sup> waig > ɣwəŋ	wau		hojŋ	fiwuŋ
4. 蔡 <sup>2</sup> jiuaig > ɣjiuəŋ	ei		jejŋ	y'ŋ
XI -auŋ				
2. 腴 <sup>2</sup> jaung				
XII -əuŋ (a) <i>k'ai</i>				
1. 翁 <sup>2</sup> əuŋ > ɣəuŋ	wou	ōng	oŋ	fiuŋ
(b) <i>ho</i>				
3. 雍 <sup>2</sup> iuəuŋ > ɣiuəŋ	you (wyou)	ung	uŋ	fijuŋ
XIII -an (a) <i>k'ai</i>				
1. 安 <sup>2</sup> an > ɣan	an	an	an	fiān
2. 晏 <sup>2</sup> jan > ɣjan	an	yén	an	y'an
3. 焉 <sup>2</sup> ian > ɣian	en	yén	en	fiān
4. 燕 <sup>2</sup> jian > ɣjian	en	yén	jen	y'ian
(b) <i>ho</i>				
1. 腕 <sup>2</sup> uan > ɣuan	wan	uyén	oan	fion
2. 灣 <sup>2</sup> wan > ɣwan	wan	loan	oan	fiwan
3. 冤 <sup>2</sup> iuān > ɣiuān	wen	oan	uen	fiwjan
4. 淵 <sup>2</sup> jiuan > ɣjiuan	en	uyén	jen	y'wjan
XIV -ən (a) <i>k'ai</i>				
1. 恩 <sup>2</sup> ən > ɣən	on	ân	in	fihin
3. 憂 <sup>2</sup> iəw > ɣiəw	iu	u u	u	fiw
4. 幽 <sup>2</sup> jiəw > ɣjiəw	iu	u	ju	y'iw

	KO	SV	SK	hP
(b) <i>ho</i>				
1. 溫 <sup>2</sup> uən > ɣuən	on	ón	on	fiun
3. 氫 <sup>2</sup> iuən > ɣiuən	un	{ uán huán	on	fijun
XV -am				
1. 諳 <sup>2</sup> am > ɣam	an	am	am	fiām
2. 諳 <sup>2</sup> jam > ɣjam	an	ām	am	y'am
3. 淹 <sup>2</sup> iam > ɣiam	en	yém	em	fiēm
4. 厭 <sup>2</sup> jiam > ɣjiam	en	yém	jem	y'iam
XVI -əm				
3. 音 <sup>2</sup> iəm > ɣiəm	in	âm	im	fiim
4. 愔 <sup>2</sup> jiəm > ɣjiəm	in	âm	im	y'im
VIIIj -aik (a) <i>k'ai</i>				
1. 惡 <sup>2</sup> aik > ɣaw	aku	ác	ak	fiaw
3. 約 <sup>2</sup> iaik > ɣiaw	yaku	uróc	jak	fiew
(b) <i>ho</i>				
1. 獲 <sup>2</sup> uaik > ɣwaw	waku		hoak	fiwaw
3. 媿 <sup>2</sup> iuaiik > ɣiuaw	waku		hoak	fiwjaw
IXj -əik (a) <i>k'ai</i>				
3. 憶 <sup>2</sup> iəik > ɣiəj	yoku	úr	ek	fi
Xj -aik (a) <i>k'ai</i>				
2. 啞 <sup>2</sup> jaik > ɣjaj	aku	輓 ách	əjk	y'ay
4. 益 <sup>2</sup> jiaik > ɣjiəj	eki		jik	yi
(b) <i>ho</i>				
2. 獲 <sup>2</sup> waik > ɣwaj	waku		hojk	fiway
XIj -auk				
2. 渥 <sup>2</sup> jauk > ɣjaw	aku	{ 握 ác 渥 óc	ak	y'aw
XIIj -əuk (a) <i>k'ai</i>				
1. 展 <sup>2</sup> əuk > ɣu	oku	oc		fiu
3. 郁 <sup>2</sup> iəuk > ɣiu	iku	úc	uk	fiju
XIIIj -at (a) <i>k'ai</i>				
1. 遇 <sup>2</sup> at > ɣau	atu	át	al	fió
2. 輒 <sup>2</sup> jat > ɣjai	atu	loát	al	y'a (?)
3. 謁 <sup>2</sup> iat > ɣia	etu	yét	el	fija
4. 噎 <sup>2</sup> jiat > ɣjia	etu	咽 nhiết	jel	y'ja

	KO	SV	SK	hP
(b) <i>ho</i>				
1. 幹 <sup>?</sup> uat > ɣwau	watu	oát	oal	fiwo
2. 媿 <sup>?</sup> wat > ɣwai	watu	空 oát	oal	
3. 喊 <sup>?</sup> iuat > ɣiua	wetu		el	
4. 抉 <sup>?</sup> jiuat > ɣjiua	etu		kjel(l)	fiwja
XIVj -ət (a) <i>k'ai</i>				
3. 乙 <sup>?</sup> iət > ɣiəj	itu	át	il	fi
4. 一 <sup>?</sup> jiət > ɣjiəj	itu	nhát	jil	y'i
(b) <i>ho</i>				
1. 嘸 <sup>?</sup> uat > ɣu	wotu		臘 ol	
3. 鬱 <sup>?</sup> iuat > ɣiu	utu	uát	ul	fiu
XVj -ap				
1. 痘 <sup>?</sup> ap > ɣau	ahu		罨 ap	唔 fio
2. 鴨 <sup>?</sup> jap > ɣjai	ahu	áp	ap	y'a
3. 腌 <sup>?</sup> iap > ɣia	ehu		ep	fiə
4. 厭 <sup>?</sup> jiap > ɣjia	ehu		jep	y'ja
XVIj -əp				
3. 邑 <sup>?</sup> iəp > ɣiəj	ihu	áp	ip	fi
4. 挹 <sup>?</sup> jiəp > ɣjiaj	ihu	áp	ip	y'i
Initial 來 l				
I/II -ai (a) <i>k'ai</i>				
1. 羅 lai > lau [ɔ]	ra	la	la	lo
(b) <i>ho</i>				
1. 羅 luai > lwau	ra	loa	裸 la	lwo
III -əi (a) <i>k'ai</i>				
3. 閩 liəi [iɣ] > liu [y]	ryo	lur	lje	liu
(b) <i>ho</i>				
1. 盧 luəi [uɣ] > lu	ro	lô	lo	lu
3. 屢 liuəi [yɣ] > liu	ru	lū	lu	liu
IV -aj (a) <i>k'ai</i>				
1. 來 laj	rai	lai	ləj	lay
3. 例 liaj > liəj	rei	lê	賴 loj	li
4. 黎 liaj > liəj	rei	lê	ljej	li
(b) <i>ho</i>				
1. 雷 luaj > luəj	rai	lôi	loj	lue

	KO	SV	SK	hP
V -əj (a) <i>k'ai</i>				
3. 離 liəj	ri	ly	li	li
(b) <i>ho</i>				
3. 累 liuəj > luəj	rui	lūy	lju	luc
VI -aw				
1. 老 law	rau	lāo	lo	law
3. 燎 liaw	reu	liəu	ljo	lew
4. 了 liaw	reu	liəu	ljo	lew
VII -əw				
1. 樓 ləw	rou	lāu	lu	lihw
3. 流 liəw	riu	lru	lju	liw
VII -aiŋ (a) <i>k'ai</i>				
1. 郎 laiŋ	rau	laŋ	laŋ	laŋ
3. 良 liaiŋ	ryau	luŋ	ljaŋ	lyan
IX -əiŋ (a) <i>k'ai</i>				
1. 稜 leiŋ > ləŋ	rou	lāŋ	liŋ	liŋ
3. 陵 leiŋ > liəŋ	ryou	lāŋ	liŋ	liŋ
X -aiŋ (a) <i>k'ai</i>				
2. 冷 laiŋ > ləŋ	rau	lānh	ləŋ	liŋ
3. 令 liaiŋ > liəŋ	rei	lən̄h	ljeŋ	liŋ
		領 {		
		līnh		
		lānh		
XI -auŋ				
2. 瀧 lauŋ > lwaiŋ	rau		laŋ	lwan
XII -əuŋ (a) <i>k'ai</i>				
1. 龍 ləuŋ > luəŋ	rou	lung	loŋ	luŋ
3. 隆 liəuŋ > liuəŋ	ryuu	弄 lōŋ	luŋ	liuŋ
(b) <i>ho</i>				
3. 龍 liuəuŋ > liuəŋ	ryou	long	ljoŋ	liuŋ
		繡 lūŋ		
XIII -an (a) <i>k'ai</i>				
1. 蘭 lan	ran	lan	lan	lan
2. 爛 lan		liən	lan	
3. 連 lian	ren	liən	ljen	len
4. 蓮 lian	ren	liən	ljen	len
(b) <i>ho</i>				
1. 亂 luan	ran	loan	lan	lon
3. 戀 liuan	ren	luyən	ljen	lijon



	KO	SV	SK	hP
XIV -ən (a) <i>k'ai</i>				
3. 隣 liən	rin	lân	ljîn	lin
(b) <i>ho</i>				
1. 論 luən	ron	luân	lon	lun
3. 倫 liuən	rin	luân	ljun	ljun
XV -am				
1. 濫 lam	ran	lam	lam	lam
3. 斂 liam	ren	liēm	ljem	lem
4. 謙 liam	ren	liēm	ljem	lem
XVI -əm				
3. 林 liəm	rin	lâm	ljim	lim
VIIIj -aik (a) <i>k'ai</i>				
1. 落 laik > law	raku	lạc	lak	law
3. 畧 liaik > liaw	ryaku	lựợc	ljak	lew
IXj -aik (a) <i>k'ai</i>				
1. 勸 laik > ləj	roku	lặc	lik	lhiy
3. 力 liaik > liəj	ryoku	lực	ljek	li
XIj -aik (a) <i>k'ai</i>				
4. 歷 liaik > liəj	reki	lịch	ljek	li
XIj -auk				
2. 榮 lauk > lwaw	raku		lak	lwaw
XIIj -əuk (a) <i>k'ai</i>				
1. 祿 ləuk > luək > lu	roku	lộc	lok	lu
3. 陸 liəuk > liuək > liu	riku	lực	ljuk	lju
(b) <i>ho</i>				
3. 錄 liuək > liuək > liu	ryoku	lực	lok	lju
XIIIj -at (a) <i>k'ai</i>				
1. 刺 lat > lai	ratu	lạt	laf	la
3. 剌 liat > lia	retu	liệt	ljel	lja
4. 捩 liat > lia	retu		ljel	
(b) <i>ho</i>				
1. 捩 luat > lwau	ratu	lóat, liệt	lal	lwo
3. 劣 liuat > liua	retu	liệt	ljel	lwja
XIVj -ət (a) <i>k'ai</i>				
3. 栗 liət > liəj	ritu	lật		li

	KO	SV	SK	hP
(b) <i>ho</i>				
1. 律 luət > lu	rotu		lul	
3. 律 liuət > liu	ritu	lựt	ljul	lju
XVj -ap				
1. 蠟 lap > lai	rahu	lạp	lap	la
3. 獵 liap > lia	rehu	{ liệp lạp	ljep	lja
XVIj -əp				
3. 立 liəp > liəj	rihu	lạp	ljip	li

*Postscript*

While correcting the proofs of the second part of this article, I noticed an interesting feature of early Kan'on that had previously escaped my attention. In the /aw/ group standard Kan'on now has the spelling *-au* throughout in both Grade I and Grade II (see Wenck, vol. III, p. 225). Earlier, however, there was a distinction. For example, in the Shōsōin manuscript of the *Meng-ch'iu* we find: Grade I 寶褒 *hou*, 毛 *hou* (for *bou*); Grade II 鮑 *hau*. This strongly suggests that in the underlying Chinese dialect Grade I was really *ho-k'ou* after labial initials and should be reconstructed as /uaw/. This is not in agreement with the *Yün-ching* which places Grades I and II in the same table, labelled *k'ai-k'ou*. By Shao Yung's time there was also a *ho-k'ou* in this rhyme in *ju-sheng* from Late Middle Chinese words in /uaik/. He gives the example 霍 /xhuai/. In hP'ags-pa this was spelt *xwaw*. We may conjecture a form /xhuaw/ for Northern Sung, retaining a final glottal stop. This new *k'ai-ho* distinction would have helped to establish or maintain such a distinction after labial initials as well.

It seems highly probable, therefore, that by Northern Sung the distinction between Grades I and II with labial initials no longer depended on /j/ after the latter and that this feature had probably been lost: Grade I /Paw/ > /Puaw/, Grade II /Pjaw/ > /Paw/. As noted above, vestiges of the distinction between Grades I and II, presumably in the latter form, remained in Yüan times. *Chung-yüan yin-yün* keeps Grade I and II apart in a few cases after labial initials. hP'ags-pa does not normally do so but a *ho-k'ou* pronunciation in Grade I may underly the special form *boo* for 寶 in the sense of an imperial edict listed at the end of the *-aw* rhyme in the *Meng-ku tzu-yün*.

Is it possible that, in spite of the *Yün-ching*, we should push the *ho-k'ou* interpretation of Grade I of the /aw/ rhyme after labial initials back still farther and eliminate /j/ after labials in Grade II from our Late Middle Chinese reconstruction? This evidence from early Kan'on would certainly

support this. As far as the distinctions of the rhyme tables are concerned, this would create a difficulty only in the /ai/ rhyme group. Grade I in this rhyme group is, of course, *ho-k'ou*: 波 /puai/ > /pwau/[pwo], hP *bwo*, etc. If we treat Grade II as *k'ai-k'ou*, this provides for the distinction, but, as noted above, it leaves us with no feature by which to account for the failure of a word like 巴 to develop a rounded vowel in Early Mandarin on the pattern of 𪛗 /kai/ > /kau/[kɔ], hP *go*, 多 /tai/ > /tau/[tɔ], hP *do*. On the other hand, if we posit a lax /w/ glide after labials in Grade II, like that in Grade II *ho-k'ou* after back initials, this would provide the necessary discriminating feature: 巴 /pwai/ > /pai/, like 瓜 /kwai/ > /kwai/. Again we might find some support from Shao Yung, who gives 𪛗, Grade II *ju-sheng*, as an example for *ho-k'ou* in the /ai/ rhyme.

As against this is the slight but definite Sino-Korean evidence for a /j/ glide after labial initials in Grade II as well as the other evidence, partly relating to the pre-T'ang period (presumably referring to a northern dialect). On the whole it seems preferable to retain the reconstruction as it stands, recognizing that the loss of /j/ in such cases must have taken place quite early and may even have occurred in some forms of speech already in T'ang times. Whether or not to retain it for practical purposes, as in the transcription of Late T'ang poetry is another question. One could well omit /j/ after labials in Grade II everywhere and insert /u/ after these initials in Grade I in the /aw/ group. The /w/ glide in Grade II need not be written but can be taken as a concomitant feature of the initials.