ON THE STRUCTURE OF THE RIME TABLES IN THE YUN-CHING 韻鏡*

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I

Since Bernhard Karlgren published his monumental work *Etudes sur la phonologie Chinoise* in 1915-26, Hashimoto Mantaro's *Phonology of Ancient Chinese* published in 1978-79 may be the most comprehensive work on the phonology of the *Ch'ieh-yün* (hereafter abbrev. as *CY*), which was compiled by Lu Fa-yen 陸法言 et al. in 601A.D. In Hashimoto (1978), Chapter II deals with traditional phonology, especially "teng-yün-hsüeh" 等韻學 (rime table studies); Chapter IV discusses the phonetic/phonemic transcriptions of Karlgren and other scholars; while Chapter V deals with distinctive feature phonology.

In this paper, I will present my own reconstructions according to Chou (1968) with some revisions concerning the phonology of the *CY* as well as that of the rime tables in the *Yün-ching* 韻鏡 (hereafter abbrev. as *YC*). Although the *YC* was published in the Sung period, the compilers of the rime tables, who were influenced by Indian phonology through the Buddhist monks in the T'ang period, intended to make it a key to *CY* just after the revised editions of *CY* were gradually made popular. This point was elaborated by Luo Ch'ang-p'ei, who presented four kinds of evidence for this in Luo (1935).[1]

Table I is the reproduction of the fourth table of the *YC*.[2] On the structure of the rime tables, Karlgren (1954) says:

> Inside each table, the type words are arranged in vertical and horizontal rows, those most closely allied being confined within a

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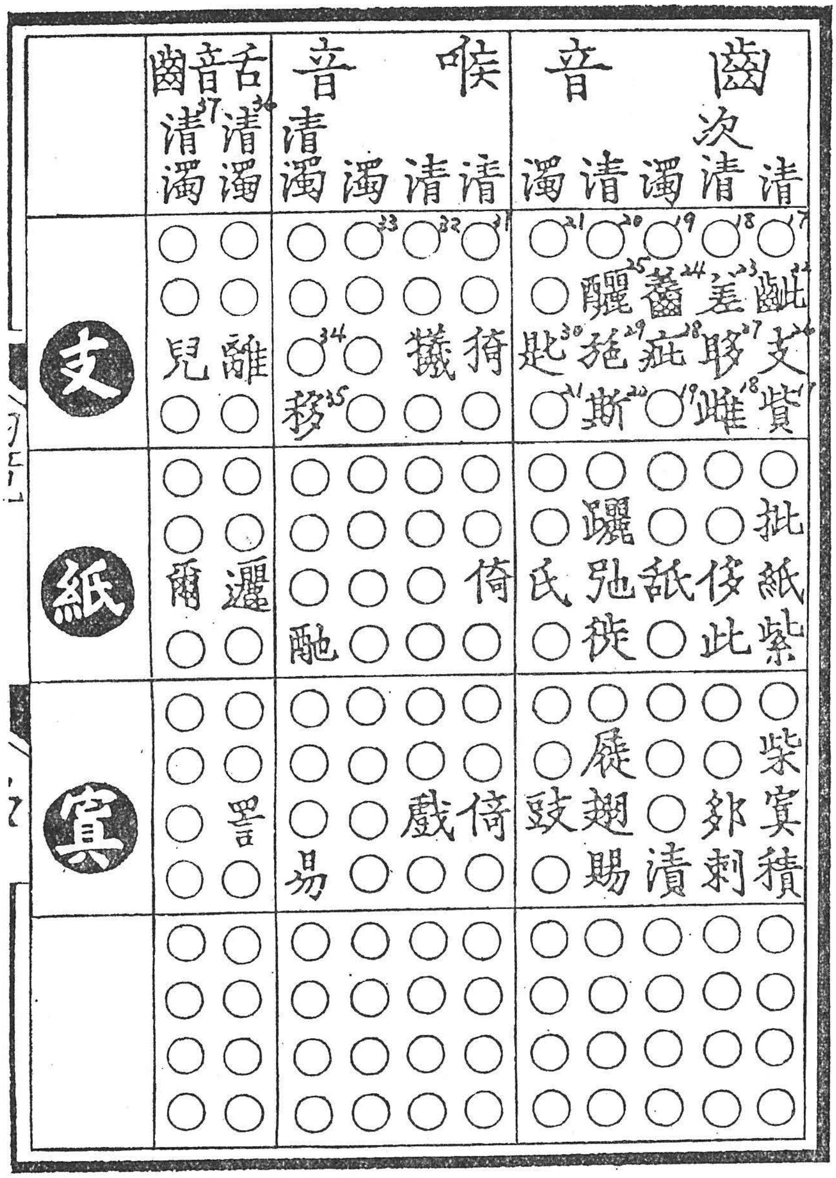
1. Luo (1935), pp. 521-523; also Luo (1963), pp. 104-106. Li Hsin-K'uei (1981) suggested that the *YC* was compiled in the early Sung period, but I do not agree with him. For details, see my another paper which will be published in the near future.
2. Li (1982), pp. 28-29; Lung (1959), pp. 54-55.

Table 1: A reproduction of the fourth table of the *Yun-Ching*



	齒音	舌音	喉音				齒音				
	清濁	清濁	清濁	濁	清	清	濁	清	濁	次清	清
支	○	○	○	○	○	○	○	○	○	○	○
	○	○	○	○	○	○	○	釃	齹	差	齜
	兒	離	○	○	犧	猗	匙	施	疵	眵	支
	○	○	移	○	○	○	○	斯	○	雌	貲
紙	○	○	○	○	○	○	○	○	○	○	○
	○	○	○	○	○	○	○	躧	○	○	批
	爾	邐	○	○	○	倚	氏	弛	舐	侈	紙
	○	○	酏	○	○	○	○	徙	○	此	紫
寘	○	○	○	○	○	○	○	○	○	○	○
	○	○	○	○	○	○	○	屣	○	○	柴
	○	詈	○	○	戲	倚	豉	翅	○	卶	寘
	○	○	易	○	○	○	○	賜	漬	刺	積
	○	○	○	○	○	○	○	○	○	○	○
	○	○	○	○	○	○	○	○	○	○	○
	○	○	○	○	○	○	○	○	○	○	○
	○	○	○	○	○	○	○	○	○	○	○

square of their own. The vertical rows indicate the initials, the horizontal the finals. The order is from right to left and from top to bottom.[3]

In the *YC*, in each table, there are 16 lines for finals. They are first divided into 4 tones, namely, the *p'ing sheng* 平聲, the *shang sheng* 上聲, the *ch'ü sheng* 去聲 and the *ju sheng* 入聲. Within each square frame, it

3. Karlgren (1954), p. 216.

is further subdivided into four divisions. Karlgren (1954) says:

> We shall adopt the arrangement of four Divisions. We shall call "finals of Div. I" all such finals the words of which appear in Div. I of the Sung Sound tables; and similarly "finals of Div. II" "finals of Div. III" and "finals of Div. IV" .... When employing this classification, one reservation must be made in regard to the "finals of Div. III".[4]

II

In the *YC*, the initials of the *CY* are classified as the *ch'un yin* 唇音, the *she yin* 舌音, the *ya yin* 牙音, the *ch'ih yin* 齒音, the *hou yin* 喉音 and the *she ch'ih yin* 舌齒音. Table II lists the initials of the *CY*, reproduced from Chou (1968).[5] The Arabic numerals attached to each initial correspond to those in Table I of the *YC*.

Table II: Initials of the *Ch'ieh-yün*

切韵聲母表

	全清	次清	全濁	次濁	次濁	全清	全濁	次濁	次濁
唇音 (labials)	1幫 p	2滂 p'	3並 b	4明 m					
舌頭音 dentals(「來」爲半舌音 lateral)	5端 t	6透 t'	7定 d	8泥 n	36來 l				
舌上音 (supradental stops)	9知 ṭ	10徹 ṭ'	11澄 ḍ	12娘 ṇ					
齒頭音 (apical sibilants)	17精 ts	13 清 ts'	19 從 dz			20心 s	21邪 z		
正齒音二等(supradental sibilants)	22 照莊tṣ	23 穿初tṣ'	24 牀崇dẓ			25 審生ṣ			
正齒音三等 (「日」爲半齒音)	26 照章tɕ	27 穿昌tɕ'	28 牀船dʑ	37日 ȵ		29 審書ɕ	30禪 ʑ		
牙音(「曉」「匣」舊隸喉音) (velars)	13見 k	14溪 k'	15羣 g	16疑 ŋ		32曉 x	33 匣 ɣ*		
喉音 (gutturals)	31影 ʔ							34 喻云 j	35 喻以〇

*32 and 33 in the past have been classified with the other gutturals rather than with the velars.

4. Karlgren (1954), p. 231.

5. Chou (1968), p. 95; also Chou (1984), p. 9.

Some scholars suggest an additional voiced supradental fricative "ẓ" for *szu* 俟[6] after no. 25 and some suggest that no. 34 *yu* (*yun*) 喻云 "j" should be combined with no. 33 "ɣ" as one phoneme, and then omit the phoneme "j". Although I have followed them in this paper, yet we must bear in mind the *hsia-mu* 匣母 belongs to the *ch'üan-cho* 全濁 "fully muddy" class, while the *yü* (*yün*)-*mu* 喻云母 belongs to the *tz'u-cho* 次濁 "semi-muddy" class. Words in the *shang sheng* 上聲 which have the former as initial have changed to the *ch'ü sheng* 去聲 (for example, *hou* 厚, originally a *shang sheng* word, has changed to *ch'ü sheng* in most modern dialects); while words in the *shang sheng* with the latter as the initial have kept the original tone (for example, *you* 有 is a *shang sheng* word from ancient to present).

Table III lists the finals of the *CY*, reproduced from Chou (1968).[8] The Arabic numerals attached to each final correspond to the number of the rime tables in the *YC*.

Table III: Finals of the *Ch'ieh-yun*

切韵韵母擬音表

外轉	內轉
果假攝	遇攝
一等 27歌 *a*, 28戈u*a*	一等 12模 uo
二等 29,30麻二 a, ua	
三等 B 28 戈三 i*a*, iu*a*; 29, 30 麻三 ia, iua	三等 11魚 io, 12虞 iuo
蟹攝	止攝
一等 15.16泰 *a*i, u*a*i; 13咍 əi, 14灰 uəi	
二等 13.14夬 ai, uai; 15.16佳 æi, uæi; 13.14皆 ɛi, uɛi	
三等 13.14祭 B iai, iuai; 13.14.15.16祭 A iæi, iuæi; 9.10 廢 i*a*i, iu*a*i	三等 4.5支 B ie, iue, 支 A iɪ, iuɪ; 6.7脂 B iei, iuei, 脂 A iɪi, iuɪi; 8之 i, 9.10 微iəi, iuəi
四等 13.14齊 iɛi, iuɛi	
效攝	流攝
一等 25豪 *a*u	一等 37侯 əu

6. Li (1951), p. 92.
7. Ku (1932), pp. 100-103; Luo (1937), pp. 85-90; also in Luo (1963), pp. 117-121.
8. Chou (1968), pp. 106-107; also Chou (1984), pp. 19-20.

二等 25 肴 au
三等 25宵 B iau, 25.26宵 A iæu　三等 37幽 B ieu, 37幽 A iɪu, 37尤 iəu
四等 25蕭 iɛu

咸攝　添攝

一等 40談 *a*m, 39覃 əm
二等 40銜 am, 39咸 æm
三等 39鹽 B iam, 39.40鹽 A iæm　三等 38侵 B iem, 38侵 A iɪm
40嚴 i*a*m, 41凡 iu*a*m
四等 39添 iɛm

山攝　臻攝

一等 23寒 *a*n, 24桓 u*a*n　一等 17痕 ən, 18魂 uən
二等 21.22山 an, uan, 23.24刪 æn, uæn　二等 17臻 ien
三等 23.24仙 B ian, iuan, 21.22. 23.24仙 A iæn, iuæn, 21.22 元 i*a*n, iu*a*n　三等 17.18眞 B ien, iuen; 眞 A iɪn; 18諄 iuɪn; 19欣 iən, 20文 iuən
四等 23.24先 iɛn, iuɛn

宕梗攝　曾攝

一等 31.32唐 *a*ŋ, u*a*ŋ　一等 42.43登 əŋ
二等 33.34庚二 aŋ,uaŋ; 35.36耕 æŋ, uæŋ
三等 33.34庚三 iaŋ, iuaŋ; 33.34.35 清 iæŋ, iuæŋ 31.32陽 i*a*ng, iung　三等 42.43蒸 ieŋ
四等 35.36青 iɛŋ, iuɛŋ

江攝　通攝

一等 1東一 uŋ; 2冬 uoŋ
二等 3江 oŋ
三等 1東三 iuŋ, 2鍾 iuoŋ

On the "finals of Div. IV", I said:

We may reconstruct the main vowel of the "finals of Div. IV" of the outer series (*wai-chuan* 外轉) as -e- instead of -ɛ- preceded by the medial "i" or "iu", namely, which is complementary with -e- of the "finals of Div. III" of the inner series (*nei-chuan* 內轉), but is different with the latter in vowel length. For example,

Rime *Ch'i* 齊 may be reconstructed as "ei" instead of "-iei". [9] Now, we may take this measure in order to save a vowel phoneme. Consequently, the Rime *Chie* 皆, originally reconstructed as -ɛi-, must be changed. Among the three "finals of Div. II" of the Rime Group *Hsieh* 蟹, Rime *Chia* 佳 is related to the Rime *Ma* 麻 in pronunciation in Mandarin and was reconstructed as -ɛ-, -uɛ by Hashimoto. According to my system, the Rime *Chia* 佳 may be reconstructed as -æ-; -uæ; while the Rime *Chie* 皆 as -æi, -uæi.

Besides, we may follow Hashimoto to reconstruct the Rime *Chih* 之 as "iə" instead of "i" in order to save a vowel phoneme.

Elsewhere I stated:

> The "finals of Div. III" may be classified into three types, namely, Type A, Type B and Type C. Each type may fullfil or partially fullfil the following requirements:
>
> (1) According to the position of the "labials, velars and gutturals" in the rime tables, Type A: Div. IV; Type B: Div. III; Type C: Div. III.
>
> (2) According to the distribution of the initials, Type A: p, k (including the velars and the gutturals), ts (including the supradentals and the sibilants); Type B: p, k; Type C; p, k.
>
> (3) According to the correspondences between the labials of *CY* and Sino-Annamese (hereafter abbrev. as *SA*), Type A: *SA* "*t*"; Type B: *SA* "*p*" Type C: *SA* "*f*".[11]
>
> According to the above-mentioned three criteria, the "finals of Div. III" may be classified into the following classes.
>
> (a) *chih* 支 A, *chih* 脂 A, *chen* 眞 A, *ch'in* 侵 A, *chi* 祭 A, *hsien*

9. Chou (1968). p. 105, note 12. Also see Chou (1984), p. 18.

10. Hashimoto (1978), p. 244.

11. Nagel (1941), p. 131 said: "The development of the labials is as follows:

In the rime tables	Anc. Chinese	Mandarin	Sino-Annamite
Div. III, *ho-k'ou*	pj.p'j,b'j,mj	f,f,f,w	ph,ph,ph,v=group F
Div. III, *k'ai-k'ou*			b,ph,b,m=group Px
Div. IV, *k'ai-k'ou*			t,th,t,d〔i〕=group Py"

仙 A, *hsiao* 宵 A, *ch'ing* 清, *yen* 鹽 A—Div. IV; p, k, ts; *SA* "*t*". All these finals belong to Type A.

(b) *chih* 支 B, *chih* 脂 B, *chen* 眞 B, *ch'in* 侵 B, *chi* 祭 B, *hsien* 仙 B, *hsiao* 宵 B, *yen* 鹽 B, *keng* 庚 III—Div. III; p, k; *SA* "*p*". All these finals belong to Type B.

(c) *wei* 微, *hsin* 欣, *wen* 文, *fei* 廢, *yüan* 元, *yen* 嚴, *fan* 凡—Div. III; p, k; *SA* "*f*". All these finals belong to Type C.

(d) *tung* 東 III, *chung* 鍾, *yü* 虞, *yang* 陽, *yu* 尤—Div. III; p, k, ts; *SA* "*f*". All these finals fit the requirements of (1)C, (2)A, (3)C.

(e) *yu* 幽—Div. IV; p, k; *SA* "*p*". It fits the requirements of (1)A, (2)B, (3)B.

(f) *cheng* 蒸—Div. III; p, k, ts; *SA* "*p*". It fits the requirements of (1)B, (2)A, (3)B.

(g) *chih* 之, *yu* 魚, *ma* 麻 III—Div. III; p, k, ts; no labial. They fit the requirements of (1)B or (1)C, (2)A.

(h) *ke* 戈 III—Div. III; k; no labial. It fits the requirements of (1)B or (1)C, (2)B or (2)C.[12]

Later, in Chou (1970),[13] Type C was written as Type C1, while items (d), (h) and the Rime *yü* 魚 of the item (g) were classified as Type C2. The Rime *Chih* 之, the Rime *Ma* 麻 III of the item (g) were classified as Type A. A table on the classification of the "finals of Div. III" is reproduced here as Table IV.[14]

Table IV

轉 / 等類 / 攝	外轉						內轉							
	果攝	蟹攝	效攝	咸攝	山攝	宕梗攝	遇攝	止攝		流攝	深攝	臻攝	曾攝	通攝
A 類	麻三	祭A	宵A	鹽A	仙A	清		支A脂A		幽A	侵A	眞A諄	蒸A	
B 類		祭B	宵B	鹽B	仙B	庚		支B脂B		幽B	侵B	眞A	蒸B	
C_1 類	戈三	廢		嚴凡	元			微				欣文		
C_2 類						陽	魚虞			尤				東三鍾

In Table IV, Rime *Cheng* 蒸 has been split into *cheng* A "iŋ" and

12. Chou (1948), pp. 206-207; Chou (1968), p. 103, note 11.

13. Chou (1970), p. 329; also Chou (1984), p. 102.

14. Chou (1970), p. 328; also Chou (1984), p. 102. Since in this paper the Rime *Chih* 之 has been reconstructed as "iə", it should be classified as Type C2.

cheng B "ieŋ" in *k'ai-k'ou* according to the distribution of non-grave versus grave initials. In Chou (1952), Rime *Yu* 幽 has been split into two finals: *yu* A "iɪu" and *yu* B "ieu", because different synonymous spelling characters as the second character of the *fan-ch'ieh* were used[15] and there is a pair of *fan-ch'ieh* doublets that show a minimal contrast: *hsiu* 風風 "xiɪu" versus *hsiu* 休 "xieu".[16]

III

My reconstruction of Ancient Chinese is different from Hashimoto's mainly in two respects. First, Hashimoto reconstructed a palatal nasal ending for Ancient Chinese, while most phonologists (inclvding me) do not. In this paper, I still insist on my former reconstruction of Ancient Chinese in Chou (1968) and think it is unnecessary to reconstruct a palatal nasal ending for the finals of the Keng Rime Group (*keng she* 梗攝). There are several reasons to support my point d'appui.

(1) From the historical point of view, the palatal nasal ending is not necessary, because it is needed neither in Archaic Chinese nor in modern dialects. In Archaic Chinese, words of Rime *Keng* 庚 usually rimed with words of Rimes *T'ang* 唐 and *Yang* 陽. In modern dialects, almost no trace could be found.

(2) From the descriptive point of view, I suggest an 8-vowel system in this paper, just as simple as Hashimoto's system.

(3) I think that the evidences from Sino-Vietnamese, Kao-on, Sino-Korean, the Tibetan and Uighur transcriptions, the Tangut-Chinese and Chinese-Tangut pronunciation equations discussed in Hashimoto (1978),[17] all might reflect the innovations in some northwestern dialects (including the Ch'ang-an 長安 dialect) after seventh century. It could be explained as the insertion of a parasite "i" between a front compact vowel and a

15. Chou (1952), p. 403, also in Chou (1975), p. 257. Karlgren (1954), p. 213: "東 has been spelled by 紅 and 紅 by 公, and this again by 紅; thus 公 and 紅 are synonymous spelling characters, indicating the same final *-ung*. In this way we find, for each final, rows of synonymous spellers, e.g. for final *-ung* the spellers 東公紅工洪 etc. It is, however, very easy to determine, by cross references, which spelling characters are really synonymous and have in view one final only".

16. Li (1951), p. 63.

17. Hashimoto (1978), 4. 3. 1, pp. 190-206.

velar nasal ending. On the other hand, of the eight scholars who participated in the phonological discussions with Lu Fa-yen, three represented Chin-ling 金陵 (the modern Nanking) and five Yeh (the present Lin-chang Hsien 臨漳縣 in Honan). Lu Fa-yen himself was also born in Yeh. None of them were born in the Northwest.[17a]

Second, I suggest that the difference between the paired *fan-ch'ieh* doublets lies in the difference of the vowel quality: the main vowel of the Type B words is a little lower than that of the Type A words. In the outer series, the main vowel of the Type B words is "a" while that of the Type A words is "æ". Similarly, in the inner series, the main vowel of the Type B words is "e" while that of the Type A words is "ɪ". I was inspired by the arrangement of Rime *Keng* III 庚三 and Rime *Ch'ing* 清 in *YC* which is just like the arrangement of the paired *fan-chieh* doublets. In *YC*, Rime *Keng* III and a part of Rime *Ch'ing* (labials, velars, gutturals and dental sibilants) are put together in the tables no. 33 for the *k'ai-k'ou* 開口 and no. 34 for the *he-k'ou* 合口; while Rime *Keng* 耕, Rime *Ch'ing* 青 and a part of Rime *Ch'ing* 清 (palatal sibilants) are put together in the table no. 35 for the *k'ai-k'ou*.

Hashimoto, following Tooru Mineya, ascribed the distinction of the *fan-ch'ieh* doublets (*ch'ung-niu* pairs) to the initial consonants and interpreted the distinction as palatalized versus nonpalatalized initials.[18]

In the following, let me take the Rime *Chih* 支 (including the *shang sheng* and the *ch'ü sheng* counterparts) as an example to explain the "paired Division III/IV finals". In Table I, labials, velars and gutturals of the Div. III belong to Type B of the Rime *Chih* 支, while the rest belong to Type A. There are a number of the *ch'ung-niu* pairs such as 陂: 卑, 鈹: 披, 皮: 陴, 縻: 彌 and 奇: 祇 for the initials p-, p'-, b-, m- and g- respectively. The synonymous spelling characters of the *fan-ch'ieh* of the Type B words are different from those of the Type A words. In the Amoy dialect, Type B words may be pronounced as -ia, e.g. 騎 *k'ia*, while the Type A words are not. In Archaic Chinese, Type B words belong to the Category *Ke* 歌, while Type A words belong to the Category *Chih* 支. For the "paired Division III/IV finals" of other rimes, however, the difference between Type A and Type B is not so clearcut as the Rime

17a. See Ch'en (1949), Chou Tsu-mo (1966), Malmquist (1968), p. 43.

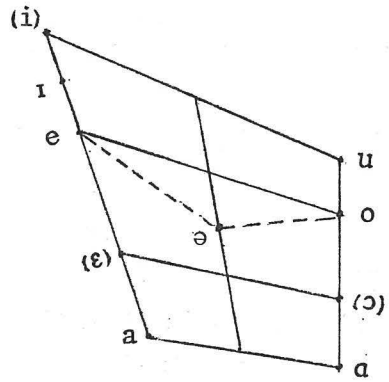
18. Mineya (1953), pp. 56-74; Hashimoto (1978), pp. 147-148.

Chih 支.[18a]

IV

For the difference between the inner series and the outer series, Chou (1968), following modern Cantonese, suggested that the main vowels of the words in the outer series should be longer and lower than those in the inner series.[19] Fig. 1 is the diagram of the vowels; the dotted line is the

Fig. 1



boundary between the inner and the outer series. Vowels "e", "ə" and "o" are shared by both inner and outer series. "e" and "ə", when not preceded by the medial "i", are long and are the main vowels of the "finals of Div. IV and Div. I" respectively, for example, Rime *Ch'i* 齊 "-ei", Rime *Hai* 咍 "əi", etc.; elsewhere, it is short. "o", when not preceded by a medial, is open and pronounced as [ɔ], which is the main vowel of the Rime *Chiang* 江 "ong";[20] elsewhere, it is close.

The following is a list of the rime groups of the inner and outer series:

Outer Series	Inner Series
Rime Group *Kuo* 果 and Rime Group *Chia* 假	Rime Group *Yü* 遇

18a. Chou (1945a), p. 83, pp. 92-93, pp. 97-99. Also Chou (1975), p. 35, pp. 44-45, pp. 49-51.

19. Chou (1968), pp. 98-99.; also Chou (1984), pp. 11-12.

20. In the *CY*, the Rime *Chiang* 江 was put just after the Rimes *Tung* 東, *Tung* 冬 and *Chung* 鍾. Therefore, it is reasonable to suggest that the Rime Group *Chiang* 江 of the outer series is the counterpart of the Rime Group *T'ung* 通 of the inner series.

Rime Group *Hsieh* 蟹	Rime Group *Chih* 止
Rime Group *Hsiao* 效	Rime Group *Liu* 流
Rime Group *Hsien* 咸	Rime Group *Shen* 深
Rime Group *Shan* 山	Rime Group *Chen* 臻
Rime Group *Tang* 宕 and Rime Group *Keng* 梗	Rime Group *Tseng* 曾
Rime Group *Chiang* 江	Rime Group *T'ung* 通

The Rime Group *Kuo* 果 and the Rime Group *Chia* 假 should be regarded as one Rime Group because they fit the requirements for one Rime Group of the outer series, and the same is true for for the Rime Group *Tang* 宕 and the Rime Group *Keng* 梗。

The main vowels of a typical Rime Group of the outer series are as follows:

"finals of Div. I"	-ɑ-
"finals of Div. II"	-a-, -æ-
"finals of Div. III"	Type A: -iæ-, Type B: -ia-, Type C: -iɑ-
"finals of Div. IV"	-e-

The main vowels of a typical Rime Group of the inner series are as follows:

"finals of Div. I"	-ə-
"finals of Div. III"	Type A: -iɪ-, Type B: -ie-, Type C: -iə-[21]

As to the distribution of the initials:

"finals of Div. I and Div. IV": p, p', b, m; k, k', ŋ; ʔ, x, ɣ; t, t', d, n, l; ts, ts', dz, s—total: 19 initials.

"finals of Div II": p, p', b, m; k, k', ŋ; ʔ, x, ɣ; ṭ, ṭ', ḍ, ṇ, l; ts, ts', dz, s—total: 19 initials.

"finals of Div. III", Type A: p, p', b, m; k, k', g, ŋ; ʔ, x, ɣ(or j); ṭ, ṭ', ḍ, ṇ, l; ts, ts', dz, s, z; tṣ, tṣ', dẓ, ṣ; tɕ, tɕ', dʑ, ɕ, ʑ, ȵ—total: 31 initials (zero initial is counted as an initial).

21. Chou (1968), pp. 100-101; also Chou (1984), pp. 13-14. The Rime *Chen* 臻 of the Rime Group *Chen* 臻 contains the supradental sibilants only and should be combined with the Rime *Chen* 眞 from the structuralistic point of view, although the medial "i" after the supradental sibilants might have disappeared in the Seventh Century in some dialects.

Type B and Type C1: p, p', b, m; k, k', g, ŋ; ʔ, x, ɣ (or j)— total: 11 initials.

Type C2: p, p', b, m; k, k', g, ŋ; ʔ, x, ɣ (or j), ɸ; t, t', d, n, l; ts, ts', dz, s, z; tʂ, tʂ', dz, s, (z); tɕ, tɕ', dʑ, ɕ, ʑ, ɲ— total: 31 (+1) initials (zero initial is counted as an initial).

The so-called initial *szu* 俟 only occurs in Rime *Chih* 之 (*p'ing sheng*) and Rime *Chih* 止 (*shang sheng*). Although the zero initial and the initial "z" are always placed in the fourth Division, yet they occur only before "finals of Div. III": Type A and Type C2. The initial "g" always occur before the "finals of Div. III".

Now we may ask the following question: May two or more finals with different main vowels belong to one rime? The answer is "yes". For example, Hashimoto (1978) says:

> The very exceptional and restricted occurrence of these finals (namely only two for the Qɪ 齊 rime and only one for the Hai 咍 rime, each of them containing only one morpheme) in the third Division suggests certain special problems. The fan-qie's of 栘 and 鼜 in various variants of QY and GY are—
>
> 栘 成栖反
>
> 鼜 人兮反
>
> The initial consonants of these two words were undoubtedly palatals. Since 鼜 is placed in the 13th table of YJ, Yü-ch'un Long wonders if these two were the even-tone counterpart of the finals of the Ji (祭) rime. (Actually 栘 is placed in Table 17 in QYZZT so that it could easily be mistaken as the even-tone counterpart of the finals of the Ji 祭 rime.)[22]

I think that 栘 and 鼜 of the Rime *Ch'i* 齊 might belong to the *p'ing sheng* counterpart of the Rime *Chi* 祭 which occurs only with the *ch'ü sheng*. Therefore the final of the above-mentioned two words should belong to the Type A of the "finals of Div. III" of the outer series, "iæi".

In the following, Fig. 2 and Fig. 3 are adapted from Fig. 4 and Fig. 5 of Hashimoto (1978)[23] with the following modifications:

22. Hashimoto (1978), p. 236.

23. Hashimoto (1978) pp. 278-279.

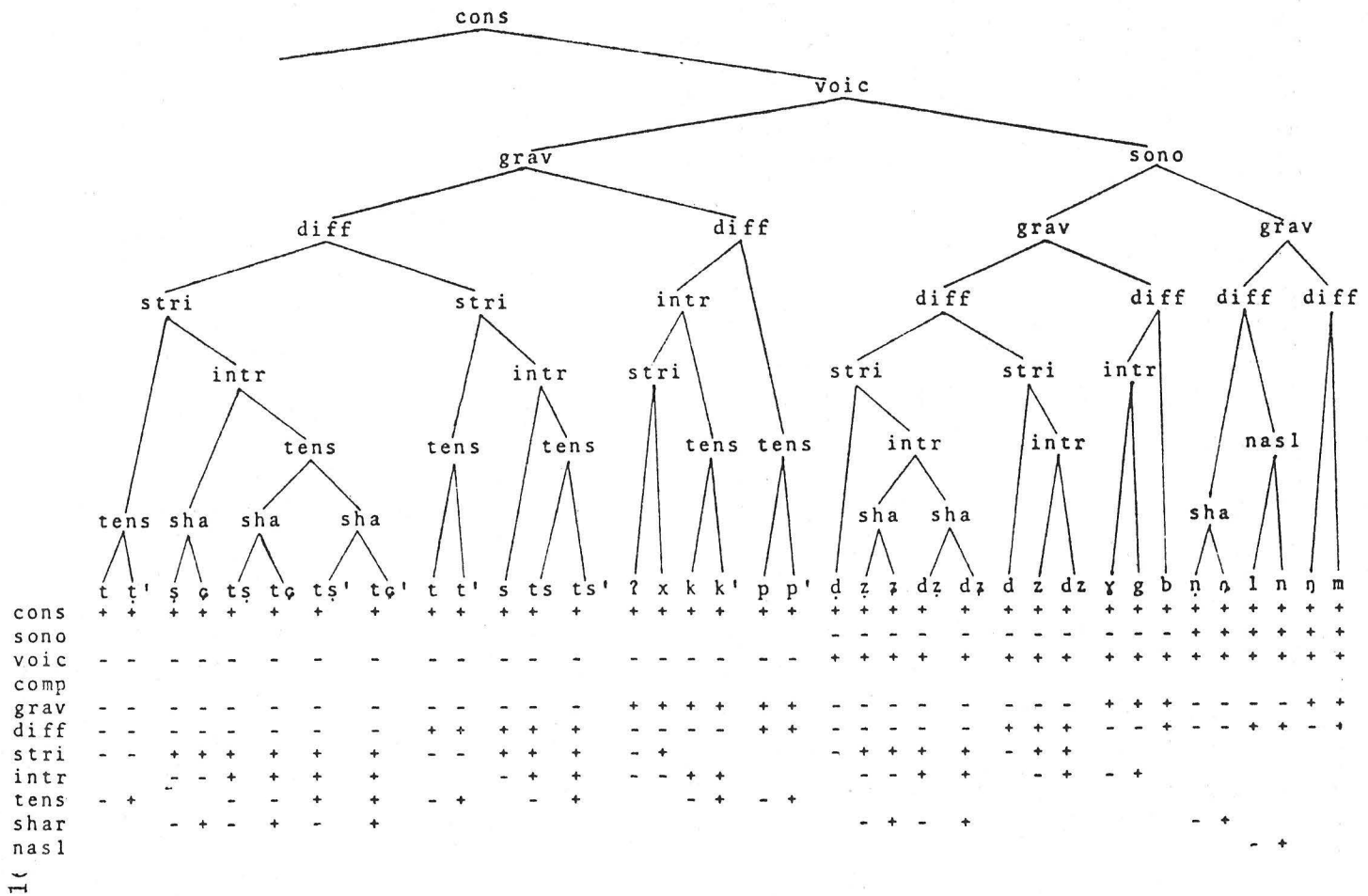


Fig. 2—Classificatory Feature Tree of Ancient Consonantal Segments

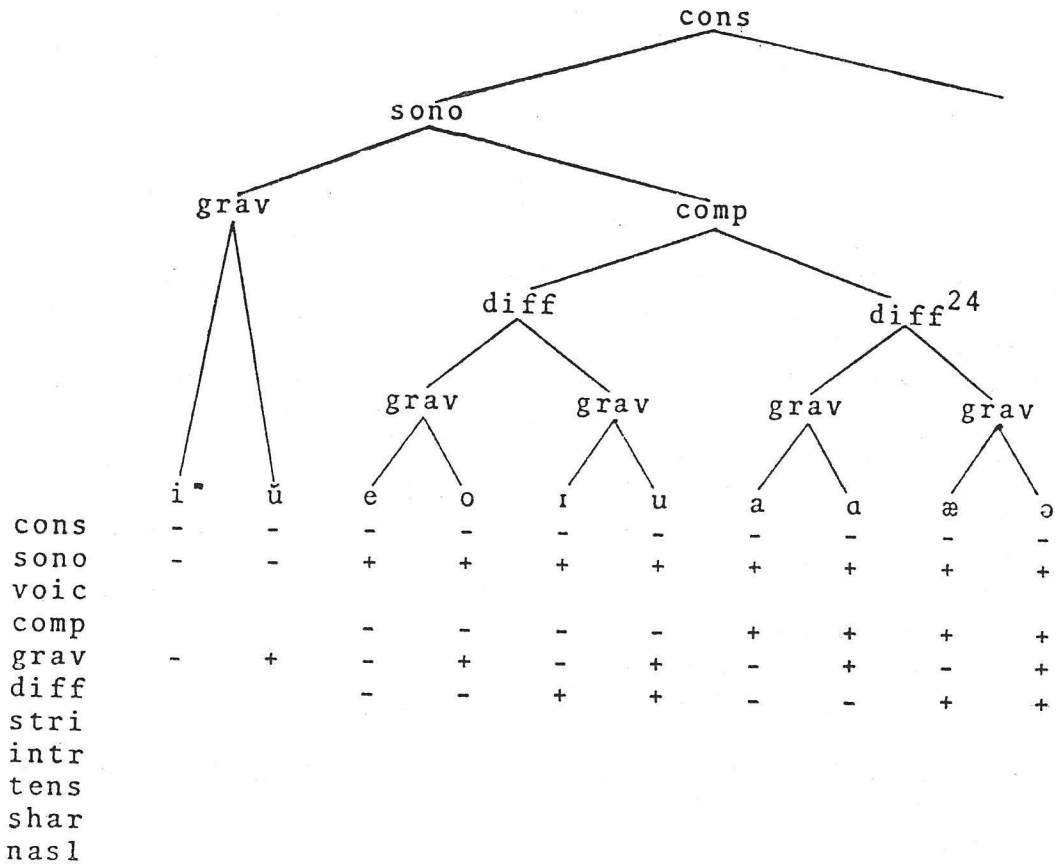


Fig. 3—Classificatory Feature Tree of Ancient Nonconsonantal Segments

(1) to omit the palatalized labials, velars and gutturals from Fig. 4;

(2) to add the supradental nasal "ɳ";

(3) to replace the vowel "y" with the vowel "ɪ" and to omit the medial "y";

(4) to replace the vowel "ɛ" with the vowel "æ".

After all, I must thank Hashimoto for his masterpiece because it has given me a lot of inspiration to revise my reconstruction of the phonology of Ancient Chinese published fifteen years ago. I think that the difference

24. Dr. Ho Ta-an suggests that the term "diffuse" might be used here to denote relative highness. See Robert T. Harms, *Introduction to Phonological Theory*, 1968, p. 27.

between these two analyses can be summed up by the title of Y.R. Chao's famous paper "The Non-Uniqueness of Phonemic Solutions of Phonetic Systems".

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Chou Fa-Kao

韻鏡中韻圖之結構

周　法　高

(1) 本文認爲韻鏡一書，主要採用韻圖的形式來闡明切韻一書的聲韻系統。

(2) 本文據作者在一九六八年發表的論切韻音一文所訂切韻的聲韻系統略加修訂，用八個主要元音來擬構切韻的元音系統，並且採用等韻學中「內轉」、「外轉」和「攝」的名稱。「內轉」諸攝的主要元音是短而舌位較高的，「外轉」諸攝的主要元音是長而舌位較低的。

(3) 本文說明韻圖中的三等韻有A、B、C三類，A、B類重紐的分別在於主要元音舌位的高低，C類具有央元音。

(4) 本文批評橋本萬太郎中古漢語的音韻（Phonology Ancient Chinese, 1978-79）一書擬構梗攝諸韻具有舌面鼻音韻尾之說是不必要的，並且不贊成橋本用聲母顎化與否來區別切韻三等韻A、B類重紐的說法。