ANCIENT CHINESE -UNG, -UK, -UONG, -UOK, ETC. IN ARCHAIC CHINESE

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In my article concerning the sources of the Ancient Chinese vowel *â*,[1] I have pointed out that the system of riming in Shï-king is more strict than some scholars are inclined to believe, and have reconstructed a number of Archaic Chinese finals, showing that some apparent discrepancies in riming can be traced back to more harmonious rimes. It is clear that we cannot freely admit *licentia poetica* as explanations of rimes that seem at the first blush rather bad to us. True that exceptional rimes do exist in Shï-king, but, considering the fact that Shï-king is a collection of songs, popular ballads, etc. from various localities and possibly from different periods, we have to admit that such exceptions are surprisingly few.

Karlgren, in a recent article of his[2], has carefully examined some rime-categories of Shï-king, and has reached some brilliant conclusions. Differing from his former conception of rimes like 馬 *ma*: 武 *mi̯u* which he considered to be imperfect rimes **må*: **mi̯u*, he has found that they go back really to **må* and **mi̯o* and that **u* does not as a rule rime with **å* or **o*[3]. This is important because it confirms my general view about the rimes in Shï-king and, as we shall see later, about these particular vowels *o* and *u*. He has also elsewhere[4] voiced the same general opinion about the strict Shï-king rimes.

In this paper I propose to study mainly those categories containing a labialized vowel, particularly rimes 東 *-ung*, *-i̯ung*, 冬 *-uong*, 鍾 *-i̯wong*, 江 *-ång*, 屋 *-uk*, *-i̯uk*, 沃 *-uok*, 燭 *-i̯wok*, 覺 *-åk*, etc. and we shall see that we can throw thereby a flood of light on many other finals.

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[1] 切韻 â 的來源, *Bulletin of the National Research Institute of History and Philology, vol. III part I;* see particularly p. 26. We shall use BNRIHP for this Bulletin in this paper.

[2] *Shĭ-king Researches, Bulletin of the Museum of Far Eastern Antiquities, No. 4,* pp. 117-185.

[3] Ibid, pp. 144-145.

[4] Karlgren, *the Poetical Parts in Lao-tsĭ, Göteborgs Högskolas Arsskrift* xxxviii, 1932: 2 pp. 23-25. We need, however, to take his theory of a court-styled poetry with certain reservation. To him there are very few exceptional rimes indeed; but this is due to his confusion of certain categories which should be kept apart. As we shall see later, there are more exceptions than he is able to recognize, but these exceptions do not obliterate the main lines of distinction between the different categories and should not be taken as the sign of identification of distinct groups of finals.

I

Let us first examine how 東 *-ung* rimes in Shï-king:—

A. *-ung* riming with *-ung*:—

召南	小星	1	東 *tung*, 公 *kung*, 同 *dʻung*
豳	東山	1-4	東 *tung*, 濛 *mung* (4 times)
小雅	大東	2	東 *tung*, 空 *kʻung*
召南	采蘩	3	僮 *dʻung*, 公 *kung*
豳	七月	7	同 *dʻung*, 功 *kung*
小雅	賓之初筵	1	同 *dʻung*, 功 *kung*
大雅	常武	6	同 *dʻung*, 功 *kung*
周頌	臣工	:	工 *kung*, 公 *kung*
鄭	大叔于田	2	控 *kʻung*, 送 *sung*
大雅	生民	4	幪 *mung*, 唪 *bʻung*

B. *-i̯wong* riming with *-ung*:—[1]

衞	伯兮	2	東 *tung*, 蓬 *bʻung*, 容 *i̯wong*
唐	采苓	3	葑 *pi̯wong*, 東 *tung*, 從 *dzʻi̯wong*
鄘	桑中	3	葑 *pi̯wong*, 東 *tung*, 庸 *i̯wong*[2]
大雅	文王有聲	2	廱 *i̯wong*, 東 *tung*
魯頌	閟宮	3	公 *kung*, 東 *tung*, 庸 *i̯wong*
大雅	靈臺	5	鍾 *tśi̯wong*, 廱 *·i̯wong*, 逢 *bʻung*, 公 *kung*
王	兎爰	3	罿 *dʻung*, *tśʻi̯wong*, 庸 *i̯wong*, 凶 *xi̯wong*, 聰 *tsʻung*
豳	七月	4	同 *dʻung*, 功 *kung*, 縱 *tsi̯wong*, *tsung*, 公 *kung*

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[1] There are besides nine cases where *-i̯wong* rimes with *-i̯wong*:—

小雅	無將大車	3	雝 *·i̯wong*, 重 *dʻi̯wong*
大雅	皇矣	7	衝 *tśʻi̯wong*, 墉 *i̯wong*
大雅	靈臺	4	樅 *tsi̯wong*, 鏞 *i̯wong*, 鍾 *tśi̯wong*, 廱 *·i̯wong*
召南	行露	3	墉 *i̯wong*, 訟 *zi̯wong*, 訟 *zi̯wong*, 從 *dzʻi̯wong*
小雅	小旻	1	從 *dzʻi̯wong*, 用 *i̯wong*, 邛 *gʻi̯wong*
周頌	振鷺	:	雝 *·i̯wong*, 容 *i̯wong*
小雅	巧言	3	共 *gʻi̯wong*, 邛 *gʻi̯wong*
小雅	節南山	6	傭 *i̯wong*, 訩 *xi̯wong*
召南	何彼襛矣	1	襛 *nźi̯wong*, 雝 *·i̯wong*

[2] Following Tuan Yü-ts'ai, Karlgren considers that 葑, 東, 庸 and the following 中, 宮 belong to one series of rimes. This is plainly not permissible if we examine the manner of riming in the two preceding stanzas:—

1. 唐：鄉：姜 ‖ 中：宮 ‖ 上
2. 麥：北：弋 ‖ 中：宮 ‖ 上
3. 葑：東：庸 ‖ 中：宮 ‖ 上

小雅	吉日	2	同 *dʻung*, 從 *dzʻi̯wong*
召南	騶虞	2	蓬 *bʻung*, 豵 *tsi̯wong*, *tsung*
召南	羔羊	3	縫 *bʻi̯wong*, 總 *tsung*, 公 *kung*
小雅	六月	3	顒 *ngi̯wong*, 公 *kung*
周頌	雝	:	雝 *·i̯wong*, 公 *kung*
魯頌	泮水	6	訩 *xi̯wong*, 功 *kung*
小雅	祈父	3	聰 *tsʻung*, 饔 *·i̯wong*

C. *-ång* riming with *-ung* and *-i̯wong:*—

小雅	車攻	1	攻 *kung*, 同 *dʻung*, 龐 *bʻång*, 東 *tung*
魯頌	閟宮	6	蒙 *mung*, 東 *tung*, 邦 *pång*, 同 *dʻung*, 從 *dzʻi̯wong*, 功 *kung*
商頌	長發	5	共 *gʻi̯wong*, 厖 *mång*, 龍 *li̯wong*, 勇 *i̯wong*, 動 *dʻung*, 竦 *si̯wong*, 總 *tsung*
大雅	皇矣	5	恭 *ki̯wong*, 邦 *pång*, 共 *gʻi̯wong*
小雅	瞻彼洛矣	3	同 *dʻung*, 邦 *pång*
小雅	采菽	4	蓬 *bʻung*, 邦 *pång*, 同 *dʻung*, 從 *dzʻi̯wong*
大雅	思齊	2	公 *kung*, 恫 *tʻung*, 邦 *pång*
齊	南山	2	雙 *ṣång*, 庸 *i̯wong*, 庸 *i̯wong*, 從 *dzʻi̯wong*
大雅	崧高	2	邦 *pång*, 功 *kung*
大雅	崧高	3	邦 *pång*, 庸 *i̯wong*
大雅	召旻	2	訌 *γung*, 共 *gʻi̯wong*, 邦 *pång*
鄭	丰	1	丰 *pʻi̯wong*, 巷 *γång*, 送 *sung*
小雅	節南山	10	誦 *zi̯wong*, 訩 *xi̯wong*, 邦 *pång*

D. *-i̯ung* riming with *-ung* and *-i̯wong:*—

大雅	文王有聲	2	功 *kung*, 崇 *dẓʻi̯ung*, 豐 *pʻi̯ung*
小雅	蓼蕭	4	濃 *ńi̯wong*, 沖 *d'ʻi̯ung*, 雝 *·i̯wong*, 同 *dʻung*
周頌	烈文	:	邦 *pång*, 崇 *dẓʻi̯ung*, 功 *kung*, 皇 *γwâng*
邶	旄丘	3	戎 *nźi̯ung*, 東 *tung*, 同 *dʻung*
鄭	山有扶蘇	2	松 *zi̯wong*, 龍 *li̯wong*, 充 *tśʻi̯ung*, 童 *dʻung*

Above is an exhaustive list of the occurrences of the final *-ung* as rimes in Shï-king. We find that it rimes as often with itself (13 times) as with final *-i̯wong* (15 times). It rimes with final *-ång* 9 times, but only 5 times with final *-i̯ung*. Similarly final *-i̯wong* rimes with itself 9 times, with *-ung* 15 times, with *-ång* 9 times, but with *-i̯ung* only twice. This is all the more telling as Tsʻie-yün considers *-ung* and *-i̯ung* as one rime (東), and if these finals maintain the same relation in the time of Shï-king as in Tsʻie-yün, we should expect that *-ung* should rime more often with *-i̯ung* than with

-*i̯wong*. But this is plainly not the case; on the other hand, -*ung* and -*i̯wong* are by far the commonest rimes and -*ung* and -*i̯ung* are rather exceptional. Most peculiar is that -*ung* never rimes with -*uong*.

If Shï-king tends to discriminate -*i̯ung* -*uong* from -*ung* and -*i̯wong* and rimes them together only exceptionally, it would be interesting to see if the "Hie-sheng" system would reveal the same peculiarity. I have made a careful examination of all the words occuring in Kuang-yün that belong to the category -*ung*, -*i̯wong*, and found that -*ung*, -*i̯wong* and -*ång* very frequently serve as phonetic elements for each other. On the other hand -*i̯ung* and -*uong* are only very rarely dragged into this group, thus:—

封 *pi̯wong:* 綁 *pång, pung:* [幫 *pwâng*][1] (cf. 丰)
龍 *li̯wong:* 聾 *lung:* 龐 *bʿång*
同 *dʿung:* 銅 *dʿung, d'ʿi̯wong,* [*d'ʿi̯əu*]
聰 *tsʿung:* 牕 *tṣʿång:* 憁 *tśi̯wong* (*?*)
春 *śi̯wong:* 椿 *t'ång*
雙 *ṣång:* 㩳, 𢤱 *si̯wong*
凶 *xi̯wong:* 㟅 *ngung, ngång*
㚇 *tsung:* 稯 *tṣʿång*
共 *gʿi̯wong:* 洪 *γung:* 巷 *γång*
雝 *·i̯wong:* 饔 *·ung, ·i̯wong:* 甕 *·ung*
甬 *i̯wong:* 通 *tʿung*
丰 *pʿi̯wong,* 逢, 奉 *bʿi̯wong:* 邦 *pång,* 棒 *bʿång:* 蓬, 唪 *bʿung:* [豐 *pʿi̯ung*]
東, 董 *tung:* 重 *d'ʿi̯wong:* 憧, 幢 *d'ʿång:* 湩 *tung, t'i̯wong* [*tuong*]: 動 *dʿung,* [*γuong*]
從 *dzʿi̯wong:* 縱 *tsung, tsi̯wong:* 鏦 *dẓʿång,* [*dzʿuong*]
工 *kung:* 江 *kång:* 邛 *gʿi̯wong:* 攻 *kung,* [*kuong*]: 釭 *kång,* [*kuong*]: 銎 *kʿi̯wong* [*kʿi̯ung*]
公 *kung:* 鬆 *sung, si̯wong, tsʿi̯wong,* [*suong*]: 訟 *zi̯wong:* [菘, 硹, 崧 *si̯ung*]: 翁 *·ung:* 𢡊 *·ång*
厖 *mång:* 䳱 *mång,* [*muong*]
[農 *nuong*]: 癑 *nung:* 穠 *nźi̯wong:* 饢 *nång:* [獶 *nâu, nau*]

Cases like 蒙 *mung,* 叢 *dzʿung,* 冢 *t'i̯wong,* 孔 *kʿung,* 茸 *nźi̯wong* which either stand alone or serve as phonetic elements for identical finals are not here listed. We can see at once that we have -*i̯ung* forms mixed in only in three series and -*uong* forms in six series. In all the other series we do not have a single case of -*i̯ung* or -*uong*.

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[1] Exceptional forms are put in brackets.

These *-i̯ung* and *-uong* forms are clearly exceptional occurences, all the more so if we make a statistical investigation. I shall give an idea of how *-i̯ung* and *-uong* forms stand in proportion to *-ung*, *-i̯wong* and *-ång* forms.

从 [從] *-i̯wong:* 从,赵,從,豵,蠑,縱,瘲,䙕,從,聳,慫,樅,暰,瑽,㞾,稵,鏠,蹤,轆,磫,𥨯,鑵,
鏦 (23)
-ung: 䙕,嵸,㢔,豵,蠑 (5)
-ång: 𨯵,摐,鏦,𩞈 (4)
[*-uong:* 𥍂 (1)]

工 *-ung:* 工,功,紅,葒,虹,訌,仜,鴻,䧆,䜫,𦐃,𠩻,魟,杠,疘,𢀖,叿,豇,汞,哄,蛩,攻,釭,
玒,𣶐,虹,澒,貢,嗊,愩,碽,篢,贛,空,埪,䳩,𧍶,埪,箜,硿,椌,腔,倥,鞚,
悾,控,𧜔,崆,涳 (49)
-ång: 釭,玒,缸,瓨,舡,谾,肛,豇,矼,扛,杠,江,茳,舡,項,澒,悾,控,𧜔,崆,椌,涳,腔,
𤟑,羫,䯐,𤸱,啌,𨁈 (29)
-i̯wong: 䚗,忎,邛,䢼,筇,蛬,𨚕,巩,恐,𢡖,𣘒,跫,拲,輂,𥓓,鞏,銎,蛩,㑋,䂬,𡎗,䳽,𨯗,
(23)
[*-uong:* 攻,釭 (2)]
[*-i̯ung:* 𨯗 (1)]

東 *-ung:* 東,菄,鶇,䗕,倲,𠍱,涷,𩛷,鯟,徚,崠,埬,𩈊,䍶,蝀,凍,𤭐,䰤,棟,𩐤,董,蕫,箽,
𨒎,湩,動,慟,童,曈,犝,懂,蕫,𪁐,䶱,韃,𨞽,僮,瞳,罿,潼,橦,㼿,穜 (43)
-i̯wong: 重,種,偅,緟,𦡣,堹,諥,喠,𩀯,尰,𢥞,㣫,腫,踵,踵,種,𧜥,鶇,蝩,衝,𠟍,種,鍾,
鐘,湩,罿,潼,橦,㼿,穜,鐘,𠟍,艟,𨊻,衝,穜,𤺄,𨆜,憧 (39)
-ång: 橦,憧,𢥞,幢,撞,噇,𩪋,𨊻,艟 (9)
[*-uong:* 湩,𠴄 (2)]

公 *-ung:* 公,蚣,瓮,鬆,凇,翁,勜,䐥,塕,㺋,暡,螉,鰳,滃,蓊,篛,鞥,檾,𩕄 (19)
-i̯wong: 蚣,炂,䒰,閎,鈆,衳,褣,伀,妐,吅,忪,笗,訟,軩,宊,頌,迖,松,淞,倯,衳,蜙,帪,
鬆,凇,容,溶,䆕,𩕄,鎔,𨄔,𧮋,蓉,傛,榕,搈,瑢,䆕,嵱,塎 (40)
-ång: 𡾰 (1)
[*-uong:* 鬆,鬆 (2)]
[*-i̯ung:* 菘,𥕢,崧 (3)]

丰 *-i̯wong:* 丰,仹,妦,夆,𥔂,蜂,峯,捀,鋒,𢓜,𤛗,莑,烽,桻,逢,摓,艂,𨇮,蠭,縫,䙜,漨,韼,
䅦,奉,唪,捧,俸,封,犎,葑,𡭊,豐 (33)
-ång: 玤,㤼,蚌,㭋,肨,邦,梆,垹,蜯,棒,絜 (11)
-ung: 鬔,蜂,䙜,𧬉,篷,蓬,蓬,唪,俸,𡘍,埲,琫,絜 (13)
[*-wâng:* 鞤,𢱧,幫 (3)]
[*-i̯ung:* 豐,𧇖,酆,灃,寷,㒥,𡾰,蘴[1] (8)]

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[1] It is interesting to note that 豐 although it has 丰 as its phonetic element, it never mixes up again with the *-ung*, *-i̯wong* and *-ång* forms except once in an alternative reading (豐 *p'i̯wong*, *p'i̯ung*). It is very likely as many scholars believe that 豐 has not 丰 as phonetic after all.

農 [*-uong:* 農,𩅽,憹,𤢖,儂,膿,𥂱,𩟔,噥 (9)]
-ung: 𩦺,癑,𧴢 (3)
-i̯wong: 𧳣,𩻐,禯,穠,醲,濃,𣟦,𪑛,𨇒 (9)
-ång: 𩟔,噥,矃,𦗱,𣯽,齈,𪆩 (7)
[*-âu:* 𡾰,𤢖 (2)]
[*-au:* 𤢖,䃩 (2)]

It is abundantly clear from the above six series that while *-ung, -i̯wong* and *-ång* do frequently form one group of "Hie-sheng" *-uong* and *-i̯ung* are rarely admitted. There are about 170 forms of *-i̯wong*, 130 forms of *-ung*, 60 forms of *-ång* against 17 cases of *-uong* and 12 cases of *-i̯ung*, many of which are alternative readings. In the light of the dialectical conditions which Karlgren has cleverly pointed out in regard to these finals, we can see how faithfully the "Hie-sheng" system has preserved the distinction which we have found existing in Shï-king.

The archaic values of the finals *-ung, -i̯wong, -ång* are, then, not difficult to determine, *-ung* comes from **-ong*, *-i̯wong* from **-i̯ong* and *-ång* from **-ång*. Karlgren is right in considering *-ung* to be archaic **-ong*, *-ång* to be archaic **-ång*, but he is completely off the mark when he reconstructed **-i̯ong* for *-i̯ung* and **-uong* for *-uong*, which, as we shall see later, must have had a different vocalism. If Karlgren's reconstructions were correct, we shall see no reason why Shï-king never has such rimes as 東 **-ong:* 冬 **-uong*, and very reluctantly presents 東 **-ong:* 東 (三等) **-i̯ong*. His theory that there is a greater similarity in syllable type between **kong: *gʻång* (both k'ai-kʻou) than between **tuong* and **gʻång* is equally unconvincing.[1] We observe nowhere in Shï-king a reluctance to rime kʻai-kʻou with ho-kʻou words nor words of the I divison with those of the III. The case here is plainly that 東 *-ung*, 鍾 *-i̯wong* do not as a rule rime with 冬 *-uong*, 東 (三等) *-i̯ung*. They must have differed in their vocalic quality. As *-ung* and *-i̯wong* represent Archaic **-ong* and **-i̯ong*,[2] the problem is what are *-uong* and *-i̯ung*.

II

Now we come to the point where we should examine how finals *-uong* and *-i̯ung*[3] rime in Shï-king. I shall give the occurences in full:—

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[1] Ibid, p. 128.

[2] We need not operate with an **-i̯wong* as Karlgren did, once we can determine that *-i̯ung* is not **-i̯ong*. **-i̯ong* develops beautifully into *-i̯wong* as **ki̯o* > *ki̯wo*, although it is hard to exclude the possibility that **i̯wong* might have also existed.

[3] Those *-i̯ung* forms which belong to the *-əng, -i̯əng* group are not here included.

A. *-i̯ung* riming with *-i̯ung:*—

召南	采蘩	2	中 *t'i̯ung*, 宮 *ki̯ung*
鄘	桑中	1,2,3	中 *t'i̯ung*, 宮 *ki̯ung* (3 times)
鄘	定之方中	1	中 *t'i̯ung*, 宮 *ki̯ung*
大雅	旣醉	3	融 *i̯ung*, 終 *tsi̯ung*
召南	草蟲	1	蟲 *d'ʻi̯ung*, 螽 *tsi̯ung*, 忡 *t'ʻi̯ung*, [降 *ɣång*]
小雅	出車	5	蟲 *d'ʻi̯ung*, 螽 *tsi̯ung*, 忡 *t'ʻi̯ung*, [降 *ɣång*] 仲 *d'ʻi̯ung*, 戎 *nźi̯ung*
邶	式微	2	躳 *ki̯ung*, 中 *t'i̯ung*
大雅	召旻	6	中 *t'i̯ung*, [弘 *ɣwəng*], 躳 *ki̯ung*

B. *-i̯ung* riming with *uong:*—

大雅	雲漢	2	蟲 *d'ʻi̯ung*, 宮 *ki̯ung*, 宗 *tsuong*, [臨 *li̯əm*] 躳 *ki̯ung*
邶	谷風	6	冬 *tuong*, 窮 *g'i̯ung*
大雅	鳧鷖	4	潨 *tsi̯ung*, *dzʻuong*, [*dzʻung*], 宗 *tsuong*, 宗 *tsuong*, [降 *ɣång*] 崇 *dzʻi̯ung*
邶	擊鼓	2	仲 *d'ʻi̯ung*, 宋 *suong*, 忡 *t'ʻi̯ung*

C. Exceptional rimes :—

大雅	旱麓	2	中 *t'i̯ung*, [降 *ɣång*]
大雅	蕩	1	[諶 *źi̯əm*], 終 *tśi̯ung*
大雅	公劉	4	[飲 *·i̯em*], 宗 *tsuong*
秦	小戎	2	中 *t'i̯ung*, [驂 *tsʻâm*]
豳	七月	8	沖 *d'ʻi̯ung*, [陰 *·i̯əm*]

There are something very peculiar about this rime category. The first scholar who singled out this category as distinct from 東 *-ung*, 鍾 *-i̯wong*, and 江 *-ång* is Kʻung Kuang-shen.[1] Many have followed him, there are others who deny the existence of such a category,[2] but on the whole I am inclined to believe that Kʻung is right. There are many exceptional rimes in this category, it is true, but such exceptions are rather helpful in understanding its peculiar character. I shall give my arguments in favor of Kʻung's classification.

1) *-uong* never rimes with *-ung*, *-i̯wong* but frequently with *-i̯ung*. From the state of affairs in Tsʻie Yün, *-uong* and *-i̯wong* should be perfect rimes, but they are strictly kept apart in Shï-king.

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[1] 詩聲類卷五.

[2] 夏燮述均卷一。 Recently 聞宥 repeats Hsia's arguments with some variation in 東冬分部辨正 (國學, I, 1).

2) Inspite of the 5 cases of exceptional riming, *-ịung: -ung, -ịwong,* we find that *-ịung* more often rimes with itself and *-uong.* We know that forms with *-uong* is not very numerous in Tsʻie-yün, and that these few occurrences in Shï-king exclusively riming with *-ịung* are all the more indicative of its special character as distinct from *-ung, -ịwong* (**-ong, *-ịong*).

3) *-ịung* rimes 4 times with forms with final *-m* (**-ịəm, *-əm*), *-uong* once. It is very significant that *-ung, -ịwong* which occur far more frequently in Shï-king never once come into conflict with **-ịəm, *-əm.* That these exceptions occur only in forms with final *-ịung, -uong* needs explanation. I think that the explanation most probably lies in the dialectical condition of that time.[1] It is perfectly reasonable that in some dialects **-ịəm, *-əm* on account of the following labial nasal *-m* have their **ə* labialized into an *u* and that their final *-m,* after giving the rounding effect to its preceding vowel, weakens into a *-ng,* thus colliding with the original **-ịung, *-ung.* We have hardly enough material yet in Shï-king to even enable us to imagine what dialectical distinctions are there among the songs gathered from the different principalities, but we can hardly exclude such a possibility in exceptional rimes of this sort. One can also easily imagine that they are due to text corruptions, but these corruptions have a regularity of their own, i. e. always *-ịung, -uong: -ịəm, -ậm,* which needs also explanation. We have to assume then that Shï-king in the process of transmission was tinged with some dialectical peculiarities of its transmitters, just like a Northern English text in the hand of a Midland scribe. But we shall not go any further, this is beyond the scope of this paper. We need only to know that *-ịəm, -ậm* sometimes riming together with *-ịung, -uong* but never with *-ung, -ịwong* (**-ong, *-ịong*) clearly mark them as different in vocalism.

4) The most disturbing element is the character 降 *ɣång* which occurs 4 times as rimes, riming only with *-ịung, -uong* and never with *-ung, -ịwong,* or *-ång,* in other words, it is kept away from Archaic Chinese **-ong, *-ịong, *-ång.* Words with the same phonetic symbol 夅 are also very complicated, we find,

夅, 降 *ɣång:* 洚 *kång, ɣuong, ɣung;* 隆 *lịung:* 䃧 *luong:* 贛 *kân, kậm, kung,* etc.

So, besides words with final *-ång, -uong, -ung* and *-ịung,* there are also quite a number with final *-m.* In another word we are not clear about the phonetic processes which this word has undergone in becoming the Tsie-yün *ɣång.* I prefer to leave this word aside, merely noting its peculiar behavior in the Shï-rimes.

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[1] Cf. 王靜如's theory in BNRIHP, pp. 403-416.

5) If the rimes in Shï-king manifest the tendency to keep *-i̯ung*, *-uong* apart from *-ung* and *-uong*, we may be interested to examine the "Hie-sheng" system to see how the matter stands there:—

冬 *tuong:* 終 *tśi̯ung*
蟲 *d'ʻi̯ung:* 爞, 爖 *dʻuong*
宮 *ki̯ung:* 碚, 颾 *ɣuong*
宋 *suong*
中 *t'i̯ung* (only forms with *-i̯ung*)
充 *tśʻi̯ung:* 統 *tʻuong*
戎 *nźi̯ung:* [㧓 *nźi̯wong*]
宗 *tsuong:* 崇 *dẓʻi̯ung:* 鬃 *dzʻuong*, [*dẓʻång*], 淙 *dzʻuong*, [*dẓʻång*]: [漴 *dẓʻång*]:
[粽 *tsung*]
乑 *ngi̯əm ?*]: 眾 *tśi̯ung:* 潀 *tśi̯ung*, *dzʻuong* [*dzʻung*]

There are six series in which no *-ung* or *-i̯wong* or *-ång* forms even occur. In the other three series the total number of exceptions is 6 (1 *-i̯wong*, 3 *-ång*, 2 *-ung*). Against more than 100 forms in *-i̯ung* and *-uong*, the exceptions are only 6. This number is quite insignificant, if we recall that in the time of Tsʻie-yün there are dialectical confusions of these groups and many double readings may indicate dialectical variants.

I think that I have produced sufficient evidence for the maintenance of Kung's special category. With the exception of the word 降, the Shï-king rimes as well as the "Hie-sheng" system keep *-i̯ung* and *-uong* apart from *-ung*, *-i̯wong*, *-ång* forms. We have already determined the archaic values of *-ung*, *-i̯wong* and *-ång*, i.e. **-ong*, **-i̯ong*, **-ång*, we have no difficulty in determing the corresponding values of *-i̯ung* and *-uong*. They are **-i̯ung* and **-ung*. We can see how satisfactorily these reconstructions explain why Shï-king rarely rimes 東 **-ong*, 鍾 **-i̯ong*, 東 (三等) **-i̯ung*, 冬 **-ung* together. Karlgren has very cleverly solved the problem of why Shï-king rimes one kind of *-i̯u* (< **-i̯o* **-i̯wo* after a labial[1] and < **i̯wo* after a guttural and laryngal) with *-a*, *-uo* etc. (< **-å*, **-o*, etc.) and another kind of *-i̯u* (< **-i̯u*) with *-əu* (< **-u*) and never mixes them up. Our case here is also analogous. Shï-king rimes 東 *-ung*, 鍾 *-i̯wong* and 江 *-ång* together, because they are Archaic Chinese **-ong*, **-i̯ong* and **-ång* and rimes 東 (三等) *-i̯ung* and 冬 *-uong* together because they represent Archaic Chinese **-i̯ung* and **-ung*, and as a rule does not mix them up.

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[1] Final *-i̯wo* has no words with labial initials, in other words, both **-i̯o* and **-i̯wo*, if there is any, pass on to *-i̯u*.

Nor does the development of these finals into Tsʻie-yün present any difficulty. **-ong* becoming *-ung* is natural. **-ung* has developed a parasitic *o*[1] between *u* and the final *-ng*, thus giving *-uong*. **-i̯ung* and **-i̯ong* develop as they should into *-i̯ung* and *-i̯wong*. It would be now extremely interesting to see how the corresponding 入聲 appear in Shï-king and see if they confirm our theory. As we shall see later, they do agree beautifully with our system.

* * *

I shall now turn to Karlgren's rejection of my reconstruction, such as 弓 *ki̯ung* < **ki̯uəng*. He thinks that 弓 *ki̯ung* is simply **ki̯ung*. I cannot agree to this. In the first place, in proposing this he has, I am afraid, taken liberty with the Shï-king system of riming. His assumption is that **-i̯ung* and **-əng*, **-i̯əng* are felt sufficiently similar to be rimes. Such an assumption is unfounded. We have seen that there is a whole group of **-i̯ung* and **-ung* kept distinct from this *-i̯ung* which rimes with *-i̯əng*, *-əng*. In the second place, in order to steer his course clear from this *-i̯ung*, he has reconstructed en bloc *-ung*, *-i̯ung*, *-uong*, *-i̯wong* to be **-ong*, **-i̯ong*, **-uong*, **-i̯wong*. This is plainly not allowable. From his reconstructions we see no reason why **-ong*, **-i̯wong* never rime with **-uong* and very exceptionally with **-i̯ong*. His theory that **-ång*[2] (kʻai-kʻou), **-uong*, **-i̯wong* (ho-kʻou) have an open *o* and **-ong*, **i̯ong* a close *o* fails at once to explain why **-uong: *-i̯wong*—both ho-kʻou and having an open *o*!—never appear as rimes, and **-ong: *-i̯wong*—one kʻai-kʻou and having a close *o*, the other ho-kʻou and having an open *o*—are by far the commonest rimes in Shï-king! It is clear that a distinction of **-ong *-i̯ong*, on the one hand, and **-ung*, **-i̯ung*, on the other, has to be reckoned with in the groups where Karlgren has indiscriminately supposed an *o*. This being cleared up, we can at once see that 弓 *ki̯ung* cannot be **ki̯ung*, but **ki̯uəng*.

Furthermore this **-i̯uəng* is by no means artificial. We find only *-i̯ung* forms riming with *-i̯əng*, *-əng* but not *-ung* forms. Karlgren has pointed out the double reading of 夢 *mi̯ung*, *mung*, but this is plainly exceptional. A study of "Hie-sheng" of this category: *-əng*, *-i̯əng*, *-i̯ung* reveals at once that *-ung* does not really exist:—

冰 *pi̯əng*: 馮 *bʻi̯əng*, *bʻi̯ung*

朋 *bʻəng*: 棚 *bʻɛng bʻəng*, [*bʻɒng*]: 掤 *pi̯əng*

登 *təng*: 橙 *dʼʻɛng*: 證 *tsi̯əng*: 澄 *dʼʻi̯əng* [*dʻɒng*]

騰 *dʻəng*: 勝 *śi̯əng*: [朕 *dʼʻi̯əm*]: [鰧 *dʻuong*, *dʻung*]: 螣 *dʻək*: 黱 *dʻâi*

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1) This parasitic *-o-* may be at first of a rather specific nuance which we can not determine.

2) We have to put the character 降 aside whose phonology is very peculiar.

繩 *dẑʻi̯əng*: 蠅 *i̯əng*
承，丞 *ẑi̯əng*
稱 *tśʻi̯əng*
升 *śi̯əng*
曾 *tsəng, dzʻəng*: 甑 *tsi̯əng*: 鋥 *dẓʻɛng*: [噌 *sung*]
陵 *li̯əng*: 稜 *ləng*
亘 *kəng*
肯 *kʻəng*
兢 *kʻi̯əng*
肱 *kwəng*: 宏 *ɣwɛng*: [罢 *kwɒng*]: 雄 *ji̯ung*
應 *·i̯əng*
興 *xi̯əng*
仍 *nẑi̯əng*: 乃 *nậi*
薨 *məng*: 夢 *mi̯ung*, [*mung*]: 甍 *mɛng*: 薨 *xwəng*: 薨 *xwɛng*: [甍 *mâng*]

Among hundreds of forms there are only 3 series which presents forms in *-ung*, 7 all told. Forms like 朧 *dʻuong, dʻung* 噌 *sung* (3 all told) are very suspicious and are probably spurious words. Only in the series 瞢 we have four forms of *-ung*. These forms can be explained thus: either the labial initial influences the following *-wə- into u (no such forms as *pwəng, mwəng* in Tsʻie-yün), or there is a tendency to lose this -i- after the labials[1] (notice the double reading 夢 *mi̯ung, mung*). I am inclined to believe that the latter is true. Anyway Karlgren's system leaves us practically no **-ung* in Archaic Chinese. This is impossible. I have demonstrated however a whole group of **-ung* and **-i̯ung* forms in Archaic Chinese. Our system of **-i̯uəng* for the type 弓 and **-i̯ung* for the type 中 is far more satisfactory.

One more condition in favor of our theory is that there is no *-i̯wəng* (or *-i̯uəng*) forms in Tsʻie-yün although there are *-wəng* forms. It is quite natural that **-wə-* is retained in *-wəng* but monophthongized after *-i̯-* into *-u-* (*-i̯ung*), and so the development of **-i̯uəng*[2] into *-i̯ung* needs no such supposition as two different varieties of ho-kʻou.[3] As a matter of fact the Tsʻie-yün system plainly indicates this, we have:

kʻai-kʻou	ho-kʻou
-əng:	*-wəng*, ——
i̯əng:	——, *-i̯ung*

This clearly shows an Archaic relation of **-əng*: **-wəng* and **-i̯əng*: **-i̯uəng*.

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[1] Cf. Karlgren, ibid, p. 147, note 1.

[2] It is immaterial to write the form either as **-i̯uəng* or **-i̯wəng*.

[3] I shall revert to the *-i̯wək* forms later in discussing the 入聲 words.

I believe Karlgren has been misled by the conception that *-əng* and *-ung* can serve as rimes. As a matter of principle it is dangerous to suppose *ə* and *u* are accoustically alike, while we have, on the one hand, Shï-king rimes like 革 **kεk*: 緎 **i̯wək*: 食 **dʻi̯ək*; 麥 **mwεk*: 極 **gʻi̯ək*, etc., and on the other hand, a host of "Hie-sheng" words like *-i̯əng*, *-əng*: *-εng* (see list above). To put in one category three different vowels *ə*, *ε*, and *u* is to presume too great a *licentia poetica* on the part of Shï-king; we have found that **-i̯ung*, **-ung*: **-i̯əng*, **-əng* do not constitute a rime category. Karlgren's theory cannot be accepted.

We may now sum up our reconstructions as follows:—

**-ong* > *-ung*	(東)		**-i̯ong* > *-i̯wong*	(鍾)
**-ung* > *-uong*	(冬)		**-i̯ung* > *-i̯ung*	(東)
**-ång* > *-ång*	(江)		**i̯uəng* > *-i̯ung*	(東)

III

Corresponding to the distinction 東 **-ong*, 鍾 **-i̯ong* and 冬 **-ung*, 東 (三等) **-i̯ung* we expect a similar distinction in the "ju-sheng" rimes: 屋 *-uk*, 燭 *-i̯wok*, 沃 *-uok*, 屋 (三等) *-i̯uk*. Let us first examine the category *-uk*, *-i̯wok* corresponding to our 東 *-ung* (< **-ong*), 鍾 *-i̯wong* (< **-i̯ong*):

A. *-uk* riming with *-uk*:

周南	葛覃	1	谷 *kuk*, *i̯wok*, 木 *muk*
小雅	伐木	1	谷 *kuk*, *i̯wok*, 木 *muk*
小雅	小宛	6	木 *muk*, 谷 *kuk*, *i̯wok*
大雅	桑柔	9	鹿 *luk*, 穀 *kuk*, 谷 *kuk*, *i̯wok*
豳	七月	7	屋 *·uk*, 穀 *kuk*
小雅	正月	3	祿 *luk*, 僕 *bʻuk*, [*bʻuok*], 祿 *luk*, 屋 *·uk*
大雅	旣醉	7	祿 *luk*, 僕 *bʻuk*, [*bʻuok*]

B. *-i̯wok* riming with *-uk*:

小雅	白駒	4	谷 *kuk*, 束 *śi̯wok*, 玉 *ngi̯wok*
小雅	天保	2	穀 *kuk*, 祿 *luk*, 足 *tsi̯wok*
小雅	鶴鳴	2	穀 *kuk*, 玉 *ngi̯wok*
小雅	黃鳥	1	穀 *kuk*, 粟 *si̯wok*, 穀 *kuk*, 族 *dzʻuk*
召南	野有死麕	2	樕 *suk*, 鹿 *luk*, 束 *śiwok*, 玉 *ngi̯wok*
魏	汾沮洳	3	曲 *kʻi̯wok*, 藚 *zi̯wok*, 玉 *ngi̯wok*, 玉 *ngi̯wok*, 族 *dzʻuk*

小雅　白華　1　束 *śi̯wok*, 獨 *dʻuk*

鄘　牆有茨　3　束 *śi̯wok* 讀 *dʻuk*, 讀 *dʻuk*, 辱 *ńźi̯wok*

C.　*-åk* riming with *-uk*, *i̯wok*:

小雅　小宛　5　粟 *si̯wok*, 獄 *ngåk*, *ngi̯wok*, 卜 *puk*, 穀 *kuk*

召南　行露　2　角 *kåk*, 屋 *·uk*, 獄 *ngåk*, *ngi̯wok*, 獄 *ngåk*, *ngi̯wok*, 足 *tsi̯wok*

小雅　正月　13　屋 *.uk*, 穀 *kuk*, 祿 *luk*, 椓 *tåk*, 獨 *dʻuk*

小雅信南山　2　霂 *muk*, 渥 *åk*, 足 *tsi̯wok*, 穀 *kuk*

小雅　四月　5　濁 *d'ʻåk*, 穀 *kuk*

周南麟之趾　3　角 *kåk*, 族 *dzʻuk*

周頌　良耜　:　角 *kåk*, 續 *zi̯wok*

D.　*-əu*, *-i̯u* riming with *-uk*, *-i̯wok*, *-åk*:

大雅　桑柔　12　谷 *kuk*, *i̯wok*, 穀 *kuk*, 垢 *kəu*

小雅　楚茨　6　奏 *tsəu*, 祿 *luk*

秦　小戎　1　驅 *kʻi̯u*, 續 *zi̯wok*, 轂 *kuk*, 馵 *tśi̯u*, 玉 *ngi̯wok*, 曲 *kʻi̯wok*

周頌　時邁　:　嶽 *ngåk*, 后 *γəu* (?)

小雅　角弓　6　木 *muk*, 附 *bʻi̯u*, 飫 *i̯əu*, 屬 *źi̯wok*

E.　*-i̯uk* riming with *-uk*, *-i̯wok*:

小雅　采綠　1　綠 *li̯wok*, [匊 *ki̯uk*,], 局 *gʻi̯wok*, 沐 *muk*

豳　東山　1　蠋 *ži̯wok*, [宿 *si̯uk*]

Leaving temporarily aside those *-əu*, *-i̯u* which Karlgren has considered as exceptions, we see that the parallelism with our group: 東 **-ong*: 鍾 **-i̯ong*: 江 **-ång* is perfect. Among a host of *-i̯uk*, *-uok* forms which serve, as we shall see later, as rimes in Shï-king, only twice has *-i̯uk* got mixed with *-uk*, *-i̯wok*, not a single case with *-åk*, we find equally no *-uok*[1] forms dragged into this group. It seems abundantly clear that *-i̯uk* and *-uok* are not to be considered to have the same vocalism as *-uk* and *-i̯wok* which rimes frequently with *-åk*. We can determine at once that *-uk* and *-i̯wok* have an *o* vowel, namely **-ok* and **-i̯ok*[2] but *-i̯uk* and *-uok* are different.

Nor do the rimes alone indicate this, the Hie-sheng system confirms the same tendency:—

卜 *puk*: 仆 *pʻəu*, *pi̯u*, [*pi̯əu*], [*bʻək*]: 赴 *pʻiu*: 朴 *pʻåk*

族 *dzʻuk*: 鷟 *dẓʻåk*: 嗾 *tsʻəu*

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[1] Except the word 僕 which has two readings. Karlgren has arbitrarily taken 僕 to be *bʻuok*, and neglected the double reading *bʻuk*. This is not permissible. Shï-king rimes clearly indicates that it reads rather *bʻuk* than *bʻuok*.

[2] Here again we need not operate with an Archaic **-i̯wok* as Karlgren did.

蜀 *ʑ́i̯wok*: 濁 *d'ʻåk*: 獨 *dʻuk*: 襡 *təu*
豖 *t'ʻi̯wok*: 啄 *t'åk*: 涿 *t'åk, tuk*
鹿 *luk*: 麡 *xi̯wok*
束 *śi̯wok*: 速 *suk*: 欶 *ṣåk*: 嗽 *suk, såk, səu*; 梀 *ṣi̯u*: 鏉 *səu*, [*si̯əu*]
穀 *kuk*: 㱿 *kʻåk*: 彀 *kʻəu*
角 *kåk*: 犄 *tśʻi̯wok*: 斛 *ɣuk*,
谷 *kuk*: 浴 *i̯wok*: 裕 *i̯u*
獄 *ngi̯wok, ngåk*: 嶽 *ngåk*
屋 *·uk*: 渥 *·åk*
木, 霂 *muk*
秃 *tʻuk*
[賣 *i̯uk*]: 讀 *dʻuk*: 藚 *zi̯wok*
辱 *nʑ́i̯wok*: 褥 *nʑ́i̯wok*, [*nuok*]: 搙 *ńåk*, [*nuok*]
祿 *luk*: 綠 *li̯wok*: 剝 *påk*: [𧰼 *bʻi̯uk*]
玉 *ngiwok, si̯wok* [*si̯uk*]: [珏 *ngi̯uk*]
菐 *bʻuk* [*pi̯uk*]: 僕 *bʻuk*, [*bʻuok*]: 䑑 *bʻi̯wok*: 樸 *puk, bʻuk pʻåk*, [*bʻuo*]: 璞 *pʻåk*:
  [濮 *pʻạk*]
足 *tsi̯wok, tsi̯u*: 浞 *tsʻi̯wok, tsʻi̯ak*, 捉 *tṣåk*: [珿 *tṣʻi̯uk*]: [莡 *tsʻâk*]

In the 19 series of phonetic compounds which present *-uk, -i̯wok* forms only in six series we meet forms in *-uok, -i̯uk*, 19 cases all told against hundreds of forms in *-uk* and *-i̯wok*. We have to conclude that 沃 *-uok* and 屋 (三等) *-i̯uk* are different in vocalism from *-uk, -i̯wok* which are archaic **-ok* and **-i̯ok*, and are forced to reject Karlgren's reconstructions that they came from **-uok* and **-i̯ok*.

IV

We may now examine how *-i̯uk*,1) *-uok* are used as rimes in Shï-king:—

A. *-i̯uk* riming with *-i̯uk*:

小雅	蓼莪	4	鞫 *ki̯uk*, 畜 *xi̯uk*, 育 *i̯uk*, 復 *bʻi̯uk*, 腹 *pi̯uk*
大雅	生民	1	夙 *si̯uk*, 育 *i̯uk*, [稷 *tsi̯ək*]
周頌	雝	:	肅 *si̯uk*, 穆 *mi̯uk*
小雅我行其野		2	蓫 *t'i̯uk*, 宿 *si̯uk*, 畜 *xi̯uk*, 復 *bʻi̯uk*
豳	九罭	3	陸 *li̯uk*, 復 *bʻi̯uk*, 宿 *si̯uk*
豳	七月	6	薁 *·i̯uk*, 菽 *śi̯uk*
唐	無衣	2	六 *li̯uk*, 燠 *·i̯uk*, *.âu*

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1) Those *-i̯uk* forms like 福 *pi̯uk* which belongs to the *-i̯ək, -ək* group are not here included.

B. *-uok* riming with *-i̯uk*:

邶	谷風	5	鞫 *kiuk*, 覆 *pʻi̯uk*, 育 *i̯uk*, 毒 *dʻuok*
唐	椒聊	2	匊 *ki̯uk*, 篤 *tuok*
齊	南山	3	告 *kuok*, *kâu*, 鞫 *ki̯uk*
衛	考槃	3	陸 *li̯uk*, 軸 *d'ʻi̯uk*, 宿 *si̯uk*, 告 *kuok*, *kâu*
大雅	既醉	3	俶 *tsʻi̯uk*, 告 *kuok*, *kâu*
鄘	干旄	3	祝 *tsi̯uk*, 六 *li̯uk*, 告 *kuok*, *kâu*
大雅	桑柔	11	迪 *dʻi̯ek*, 復 *bʻi̯uk*, 毒 *dʻuok*

C. *-iek* riming with *-i̯uk*:

大雅	桑柔	11	迪 *dʻiek*, 復 *bʻi̯uk*, 毒 *dʻuok*
小雅	小明	3	奥 *·i̯uk*, 蹙 *tsʻi̯uk*, 菽 *śi̯uk*, 戚 *tsʻiek*, 宿 *si̯uk*, 覆 *pʻi̯uk*

D. *-i̯əu*, *-âu*, *-i̯eu* riming with *-i̯uk*:

王	中谷有蓷	2	脩 *si̯əu*, 歗 *si̯eu*, 歗 *si̯eu*, 淑 *ʑi̯uk*
鄭	清人	3	軸 *d'ʻi̯uk*, 陶 *dʻâu*, 抽 *t'ʻi̯əu*, 好 *xâu*
大雅	蕩	3	祝 *tśi̯uk*, 究 *ki̯əu*

Leaving temporarily aside those *-i̯əu*, *-ieu*, and *-âu* forms, we find that *-i̯uk*, *-uok* and less frequently *-iek* rime together freely, and except the two exceptions listed in Sec. III we find no instance of *-uok*, *-i̯uk* riming with *-uk*, *-i̯wok*.[1] Karlgren's reconstructions which suppose an *-o-* vowel alike in these finals, i.e. 沃 **-uok*, 屋(三等) **-i̯ok*, 屋 **-ok* and 燭 **-i̯wok*, at once fall to pieces in failing to explain the distinction which we have discovered in Shï-king.

The case here is exactly parallel to 東 **-ong*, 鍾 **-i̯ong*; 冬 **-ung*, 東(三等) **-i̯ung* studied above. These finals *-uok*, *-i̯uk*, are kept apart from 屋 **-ok*, 燭 **-i̯ok*, 覺 **-åk* in Shï-king because they represent Archaic Chinese **-uk*, **-i̯uk*.[2] The principle that Shï-king does not as a rule confuse *å*, *o* on one hand and *u* on the other is here firmly established, thus:—

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[1] There are, however, a few instances where *-uok* rimes with *-âk*, *-åk* etc. "Hie-sheng" shows clearly they are of a different origin and are not to be confused with the *-uok* here. We shall have chance to discuss them later.

[2] I shall discuss the *-iek* forms in a later chapter.

Group: *o, å*			Group: *u*	
模 **-o, *-uo;*	麻 **-å, *-i̯å;*	魚,虞 **-i̯o, *-i̯wo*	侯 **-u*	虞 **-i̯u*
東 **-ong,*	鍾 **-i̯ong,*	江 **-ång*	冬 **-ung,*	東(三等) **-i̯ung*
屋 **-ok,*	燭 **-i̯ok,*	覺 **-åk*	沃 **-uk,*	屋(三等) **-i̯uk*

* * *

I shall now turn to consider Karlgren's rejection of my reconstructions such as 服 *bʻi̯uk* < **bʻi̯uək*. According to him, as in the case of 弓 *ki̯ung*, he thought that 服 *bʻi̯uk* was simply **bʻi̯uk* and that it rimed with **-i̯ək*, **-ək* etc. because **-uk* and **-ək* were considered similar enough to rime. This is impossible, for the same reasons I have given above for *-i̯ung*. We know that this *-i̯uk* cannot be **-i̯uk* because it is distinct from the *-i̯uk* and *uok* forms just analysed which are Archaic Chinese **-i̯uk* and **-uk*. Here again in proposing this, Karlgren has left us no **-uk* in Archaic Chinese; a study of the "Hie-sheng" words of this type: 服 *bʻi̯uk* at once reveals this:

伏 *bʻi̯əu, bʻi̯uk*: 茯 *bʻi̯uk*: 捄 *bʻək*
備 *bʻwi*: 憊 *bʻwai*: 鞴 *bʻi̯uk*, [*bʻuo*]
服 *bʻi̯uk*: 菔 *bʻi̯uk, bʻək*
牧 *mi̯uk*
畐 *bʻi̯uk pʻi̯ək*: 富 *pi̯əu*: 蔔 *bʻək*: [簹 *bʻåk*]
而 *nźi̯*, 鮞 *ńźi̯uk*, 恧 *ńi̯uk, ńi̯ək*
或 *ɣwək*, 域 *ji̯wək*: 黬 *·i̯uk, ji̯wək, zi̯wək*, 馘 *xwɛk*: 戇 *kuâi*
有 *i̯əu*: 囿 *ji̯uk*: 賄 *xuâi*: 洧 *jwi*
母 *məu*: 每 *muâi*: 坶 *mi̯uk*: 鴾 *mi̯əu*

This is all the more unlikely as Karlgren has reconstructed 母 *məu* < **mug*. If **mug* existed, why not **muk?* His system is clearly defective, and can not be accepted. There is, however, one fact which seems to stand against my system: 服 *bʻi̯uk* < **bʻi̯uək*. There are in Kuang-yün such readings as 域 *ji̯wək*, which seems to indicate that **-i̯uək* is retained rather than develops into *-i̯uk*. This, of course, has been duly seized upon by Karlgren, and has been used as the main argument against my theory. At the first blush, it does seem that Karlgren was right and that **-i̯wək* is preserved; but on closer scrutiny I find that Karlgren has been led astray on this very point. This is all the more fatal because it forces him to reconstruct en bloc in finals, 屋 *-uk*, 沃 *-uok*, 燭 *-i̯wok*, 屋 (三等) *-i̯uk* an *o* vowel, neglecting a foundamental difference of *o*: *u*. Let us examine those *-i̯wək* forms carefully.

a. 彼側切 *pi̯ək*: 逼,偪,愊,楅,䮠,湢,皕,䬛,𡇒,皀
b. 芳逼切 *pʻi̯ək* or *pʻi̯wək*: 堛,愊,踾,腷,䭆,揊,稫,副,畐,𨸺(=隔),敀,畐畐
c. 符逼切 *bʻi̯ək* or *bʻi̯wək*: 愎,馥,腷,𡙇,䊇,腷,踾,鶝
d. 雨逼切 *ji̯wək*: 域,蜮,罭,棫,𡚁,䳿,緎,琙,𩡒,緎,魊,魊,淢,蒮
e. 況逼切 *xi̯wək*: 㰲,瘛,𩡒,緎,䎸,淢,閾(=閾),𧜁,侐,洫,𥃁,㖪

1. Except those dubious forms like 䬛,𡇒,皕,皀,侐,洫,閾,𥃁,㖪 all words have either 畐 or 或 as their phonetic element. Two cases have 复.

2. Those that have 必,血 as phonetic elements are clearly exceptional, because 必,血 all have a final *-t*. It would not interest us how they are listed here, but they are likely to be due to dialectical mixtures.

3. It is doubtful whether to consider series b and c as kʻai-kʻou or ho-kʻou, Chen Li 陳澧,[1] for instance, considers them to be kʻai-kʻou because in the first place 逼 which serves as Tʻsie is kʻai-kʻou and in the second place there are no other kʻai-kou words with *pʻ*, *bʻ*. This doubtful character of these groups is still secondary.

4. Many of these words have double reading in *-i̯uk*, 畐 *pi̯ək* (*pi̯wək?*), *bi̯uk*, 偪 *pi̯ək*, *pi̯uk*, 楅 *pi̯ək*, *pi̯uk*, 幅 *pi̯ək*, *pi̯uk*, 鶝 *bʻi̯ək* (*bʻi̯wək?*), *pʻi̯uk*, 踾 *bʻi̯ək* (*bʻi̯wək?*), *pʻi̯ək* (*pʻi̯wək?*), *pi̯uk*, 副 *pʻi̯ək* (*pi̯wək?*), *pʻi̯uk*, *pi̯əu*, 㰲 *xi̯wək*, *·i̯uk*, 𩡒 *ji̯wək*, *xi̯wək*, *·i̯uk*. Karlgren has also noticed this, but entirely in a different light. He thought that the distinction is real, but he fails to explain why words like 畐,愊,鶝,踾,副,㰲,𩡒 have double readings while their meanings are identical. Karlgren's assumption that they were originally different is unlikely. These double forms must have arisen either as dialectic doublets or one of them is an analogical reading. We have so far in discussing Chinese phonology made little use of analogy, but such a forceful principle so well tested in many languages cannot leave no trace in Chinese. We can at once realize why 𩡒 *·iuk*, 福 *pi̯uk* etc. have also forms in *-i̯ (w) ək*, because a host of words like 域,惑 *ɣwək*, 國 *kwək*, 逼 *pi̯ək*, 葡 *bʻək*, etc. cause an analogical *-ə-* to be reinstituted where *-i̯uk* is phonetically expected. More interesting is the double

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[1] 切韻考外篇.

reading 馥 *bʻi̯ (w) ək, bʻi̯uk.* There we have in 復 *bʻi̯uk* and original **bʻi̯uk,* the *ə* there is plainly analogical, after such forms as 匐 *bʻək,* 逼 *pi̯ək:* 福 *pi̯uk.* In the other *-i̯wək* forms which show no double reading, it is the analogical reading which has survived. It is of course impossible to exclude a possibility that certain dialects have preserved the archaic **-i̯uək* and others have simplified it to **-i̯uk,* but in the face of the fact that no *-i̯wəng* forms exist in Kuang-yün, I am rather inclined to the view that these *-i̯wək* forms are analogical. The reverse that *-i̯uk* is analogical is impossible. Thus:

kʻai-kʻou	ho-kou
-ək	*-wək,* [no *-uk*]
-i̯ək:	[*-i̯wək* analogical], *-i̯uk*

Cf. the exact parallel with *-i̯əng: -i̯ung.*

The law I wish to establish here is this: Archaic **-wəng, *-wək* are preserved as such, but after a medial *-i̯-* they became *-i̯ung, -i̯uk.* Kuang-yün *-i̯wək* is analogical.

Let us sum up briefly our results:—

**-ok* > *-uk* （屋）	**-i̯ok* > *-i̯wok* （燭）
**-uk* > *-uok* （沃）	*-i̯uk* > *-i̯uk* （屋）
**-åk* > *-åk* （覺）	*-i̯uək* > *-i̯uk* （屋）

Karlgren's reconstructions, I believe, fail, because

(1) They cannot explain why Shï-king and the "Hie-sheng" system keep 屋 *-uk,* 燭 *-i̯wok* apart from 沃 *-uok,* 屋（三等）*-i̯uk.*

(2) His type 服 **bʻi̯uk* is based on the assumption that *-uk* can serve as rime to *-ək.* This assumption is without foundation.

(3) He leaves us no forms with **-uk.*

(4) He fails to recognize certain analogical processes which are of paramount importance.

V

I shall now go on to revise some of my reconstructions as expounded in my article mentioned above in the light of these new finds. First, about forms like 否 *pi̯əu* 有 *ji̯əu* which rime with **-i̯ək, *-i̯əg, *-ək, *-əg,* etc. I agree with Karlgren in thinking that there is a labial element in the final, particularly because all words of this type have either labial, guttural, or laryngal initial as clearly pointed out by Lin Yü-tʻang.[1] This agrees beautifully with *-i̯uk* (< **-i̯uək*),

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[1] 林語堂: 支脂之三部古讀攷, BNRIHP, vol. II, part 2.

-i̯ung (< **i̯uəng*), *-wək*, *-wəng* which also have only either labial, guttural or laryngal initials. It is hardly yet time to surmise how the labial element in this group which has *ə* as the main vowel gets associated with certain definite types of initials, perhaps comparative study of Sinitic languages will finally reveal the secret, but, for the time being, we have to be contented with such an observation which is important. On the other hand, I cannot agree at all with Karlgren in assigning an *u* head vowel to them, 否 **pi̯ug*, 有 **gi̯ug*. This is evidently impossible, because it would then rime with the type 復 **bʻi̯uk*, 宿 **si̯uk* which are kept distinct as we have already seen. I think we have here really to do with Archaic **pi̯uəg*, **gi̯uəg*.

To this, however, there is one objection. We have such forms as 龜 *kjwi* for which we have to suppose equally such a development: **ki̯uəg* > ** ki̯wəi* > *kjwi*. Then we are unable to explain why in one case **-g* becomes *-i* and in the other case **-g* becomes *-u*. This I have seen already in my former article, and have expressly left this question open (p. 33).[1] But in the present state of our knowledge, we may look at such contrasts, 龜 *kjwi*: 鬮 *ki̯əu* differently, at least in a manner different from Karlgren's conception. To my mind, it is not 龜 *kjwi*: 鬮 *ki̯əu*, 軌 *kjwi*: 九 *ki̯əu* that are interesting but rather their double readings:

龜	*kjwi, ki̯əu*
秠	*pʻjwi, pʻi̯əu*
否	*pjʻwi, pi̯əu*
痞	*pjwi, bʻjwi, pi̯əu*
馗,頄,尣	*gjʻwi, gʻi̯əu*
朹	*kjwi, gʻi̯əu*

According to Karlgren's reconstruction, they would go back to two different forms, namely 龜 **ki̯uəg*, **ki̯ug*, etc. This is unlikely; on the other hand, we can see no objection why such double forms cannot represent two different lines of development from one single form, due either to dialect mixture or due to some sort of accentual difference. In one case the *-ə-* is accented, thus **ki̯uə́g* > **ki̯uəi* > *kjwi*, in the other case, the *-u-* (or *-w-*) is accentuated, thus slightly, labializing the *-ə-* and consequently the final guttural *-g*, giving **ki̯úeg* > **ki̯uu* > *ki̯əu*. This may be a dialectical difference or may be variations in one dialect. Cf. Modern English *give*, *gave*, (dialectical forms displacing the old Chaucerian *yeve*), and such double forms as *off* and *of*, (due to accentual difference) or such variations in pronunciation as *new* [nu], [niu]. We have hardly yet enough data about the earlier dialect conditions, but it is beyond the slightest doubt, that many double readings in Kuang-yün are dialectical variants and that Kuang-yün has even collected dialectical words.

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[1] In Karlgren's criticism of my reconstructions (p. 149) he seems not to have noticed this.

We cannot, then, accept Karlgren's reconstructions such as 否 **pi̯ug*, 有 **gi̯ug*, because they do not satisfactorily explain the Shï-king rimes, (**-i̯ug*: **-i̯əg*, **-əg*, **-i̯ək*, **-ək* would not do) and because they do not as a rule rime with 復 **bʻi̯uk*, 宿 **si̯uk* which we have just established to be genuine **-i̯uk*. I believe that **pi̯uəg*, **gi̯uəg* are much more satisfactory, thus, leaving the question of different lines of development open.

Similarly Karlgren's reconstruction for the type 母 *məu* < **mug* is also unsatisfactory. Here again I think that this type is ho-kʻou, but it is not **mug*, but **muəg*. To this a similar objection can be raised, that we have the type 每 *muậi* which goes back also to **muəg*. How can we explain then that **muəg*, in one case, gives Ancient Chinese *məu* and, in the other case, muậi? There are four conditions, I believe, which are definitely in favor of our view, and explain how these variant forms arise.

1) All those forms with *-əu* which belong to this type, namely riming in Shï-king, or forming phonetic compounds with Archaic **-ək*, **-əg*, **-i̯əg*, **-uəg*, etc. have labial initials. This seems to indicate that such forms are due to development under some special conditions.

2) All these words, with very few exceptions, have shang-sheng[1] in Kuang-yün. They practically all occur in four series of Hie-sheng:

犃, 瓿, 䴺 *bʻəu*(2), 䳝, 剖 *pʻəu*(2), 培 *bʻəu*(2), *bʻuậi*(1), 婄 *pʻəu*(2), *bʻəu*(2), *bʻuậi*(1), 䯽 *pʻəu*(2), *bʻəu*(1), 䏽 *bʻəu*(1,2,3), 錇 *bʻeu*(1,2), 箁 *bʻəu*(1),
掊 *bʻəu*(1), 部, 郶 *bʻəu*(2), 蔀 *pʻəu*(2), *bʻəu*(2), 抔 *bʻəu*(1), 踣, 𧺺, 㰳 *pʻəu*(3)
母, 拇 (=胟) 㹚, 痗, 踇, 𨀛, 鴏 *məu*(2), 呣 *məu*(1), 娒, 莓 *məu*(3),
某 *məu*(2)
畝 (=晦) *məu*(2)

There are altogether 7 forms of *-əu* in pʻing-sheng, three of which are alternative readings, 6 forms in kʻiu-sheng, including one alternative reading. All the other forms have shang-sheng. From the fact that shang-sheng dominates in these words we can see another condition under which **muəg* tends to become *məu*.

3) More interesting are such words as 培, 婄 which have the form *bʻəu*, *pʻəu* in shang-sheng but *bʻuậi* in pʻing-sheng. Such contrasts are very significant and strongly favor our interpretation that in words with labial initials and in shang-sheng **-uəg* tends to become *-əu*, otherwise *-uậi*. We may assume then that in shang-sheng words the **-u-* is accented and in other tones the *-ə-* is accented, thus

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[1] I shall denote the three tones, pʻing, shang, kʻiu, by numerical figures 1, 2, 3 respectively.

Shang-sheng: **múəg* < **muu* < *məu*
Other Tones: **muə́g* < **muəi* < *muậi*

4) Another difficulty which has to be removed before our theory can be said to be definitely established is this: are there forms in shang-sheng which have a labial initial and a final *-uậi-*, for instance *muậi?* If there are quite a number of them, our theory will have to be discarded. Let us look them up in Kuang-yün. There are a few words, but such words like 琲, 痱 *bʻuậi* apparently do not belong to our Archaic category here, and have to be eliminated. There are only two words left, i.e. 每, 梅 *muậi*. These extremely limited occurrences appear at once to be exceptional if we consider hosts of forms, like *muậi*, *puậi* etc. in other tones. We can then on the whole consider the two lines of development as outlined in 3) to be definitely established. These two forms in shang-sheng can be either treated as plainly exceptional or as analogical forms, particularly as 每 *muậi* occurs also in kʻiu-sheng. We can easily imagine that 每 **muəg* (shang-sheng) which should give us *məu* is influenced both by the kʻiu-sheng 每 **muəg* which gives us regularly *muậi* and by a large group of words in other tones having 每 as phonetic element.

If we accept our reconstruction 母 *məu* < **muəg*, we can see why 母, 畝 rime more than ten times with **-i̯eg*, **-əg* but never with **-i̯uk* nor with **-i̯ug*, a form which we are going soon to establish. Such frequent rimes as these, I believe, cannot be explained by such different reconstructions as **-ug*: **-əg* which, at their best, involves a good measure of *licentia poetica* and only allowable in rare cases.

VI

We shall now pass on to some very complicated groups of words whose values in Ancient Chinese are 豪 *-âu*, 肴 *-au*, 宵 *-i̯äu*, 蕭 *-ieu*, 尤 *-i̯əu*. Karlgren has proposed a whole set of values for these finals, they are:—

Archaic :	**-og*	**-åg*	**-i̯åg*	**-iåk*	**-i̯og*
Ancient :	*-âu*	**-au*	*-i̯äu*	*-ieu*	*-i̯əu*

I readily agree with him in assigning some sort of an *-o-* vocalism to them, all the more willingly because I have already suggested a labial vowel for part of this group in my previous article (p. 20), but I thought then that this labial vowel must have existed anterior to the shï-king period. This series of reconstructions is on the whole very reasonable, but it does not seem to explain all the facts which the Shï-king rimes and the Hie-sheng system reveal to us.

In the first place, Karlgren considers Tuan Yü-tʻsai's distinction of two categories of 豪 *-âu* artificial, and combines them together. His theory is that in Shang-sheng *-âu* somehow tends to rime with *-i̯əu*, but he noticed too there are 12 cases where words with tones other than shang-sheng rime with *-i̯əu*.1) Further more there are 3 cases of *-âu* in shang-sheng, words which are kept clear from *-i̯əu*, *-âu* of the other group. These have to be explained, and cannot be considered as accidental.

In the second place, in assuming a vowel alike for these groups, Karlgren gets away with explaining exceptional rimes in which he sees the identification of these two groups. But at the same time he incurs, I believe, the duty of explaining why one group of *-âu* is on the whole kept separate from the other. Only five times does *-âu* (敖, 刀, 髦) confuse with *-âu*, *-i̯əu* of the other group, and seven times forms like *-i̯äu*, *-ieu* rime with *-âu*, *-i̯əu* of the other category. If *-âu* of both categories represents an Archaic **-og*, why in many cases of pʻing-sheng and kʻiu-sheng are they kept distinct? The exceptions are not numerous enough to suppose an identification of the two groups. On the other hand, can we not view these exceptional cases in another light, namely, as an indication that their vowels are similar but not identical?

In the third place, words like 告 *kâu*, *kuok*, 陶 *dʻâu*, 好 *xâu*, 脩 *si̯əu*, 抽 *t'ʻi̯əu*, 究 *ki̯əu* sometimes rime with *-i̯uk* (see sec. IV), which is an Archaic **-i̯uk*; on the other hand, words like 芼, 耄 *mâu*, 到 *tâu*, 沼, *tśi̯äu*, 炤 *tśi̯äu*, 較 *-au* often rimes with *-i̯ak* (< **-i̯åk*),2) *-åk*, and *-âk* (< **-åk*?).3) They do not mix. This is very important, because it clearly points out that we have to do here with an opener and a closer variety of labial vowls. They are not to be confused.

In the fourth place, let us examine if the Hie-sheng system gives us some hint as to whether there is a real distinction between these two categories, or a fictitious one invented by Tuan Yü-Tsʻai.

I. Tuan's second category:

標 *pi̯äu* : 麃 *pʻau*
趵 *påk* : 豹 *pao* : 杓 *pʻi̯äu*
的 *tiek*: 釣 *tieu*: 約 *tiek*, *·i̯äu*, *·iak*: 芍 *t'i̯ak ži̯ak*, *tsʻi̯ak*: 葯 *·i̯ak*, *·åk*: 約 *·åk*, *·au*
皃 *mau*, *måk* : 貌 *måk*, *mi̯äu*

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1) I might add two more: 清人 3 軸 *d'ʻi̯uk*, 陶 *dʻâu*, 抽 *t'ʻi̯əu*, 好 *xâu* and 小雅彤弓 3 櫜 *kʻâu*, 好 *xâu*, 醻 *ži̯eu*. In the last case, Karlgren considers the rime to be 弨, 櫜, 好, 醻. This is not allowed from the manner of riming in the two preceding stanzas :

1. 弨 ‖ 藏, 貺, 饗
2. 弨 ‖ 載, 喜, 右
3. 弨 ‖ 櫜, 好, 醻

2) Accepting temporarily Karlgren's reconstructions.

3) Notice that not even Archaic *-ok is allowed.

翟 *dʻiek, d'ʻak* : 糴 *dʻâu, dʻiek* : 躍 *i̯ak* : 擢 *d'ʻåk* : 糶 *tʻieu* : 櫂 *d'ʻau* : 耀 *i̯äu*
小, 肖 *si̯ău* : 踃 *sieu* 稍 *ṣau* : 削 *si̯ak* : 塑 *ṣåk*
爵 *tsi̯ak* : 釂 *tsi̯ău* : 灂 *dẓʻåk*
卓 *t'åk* : 綽 *tśʻi̯ak* : 罩 *t'au* : 悼 *dʻâu*, 掉 *dʻieu*
弔 *tiek, tieu* : 盄 *tśi̯ău*
弱 *ńźi̯ak* : 溺 *niek* : 搦 *ńɒk. ńåk* : 嫋 *nieu*
勞 *lâu* : 膋 *lieu* : 犖 *låk* : 嘮 *t'ʻau*
敫 *kiek, i̯ak, kieu* : 燩 *kʻåk, kʻiek* : 繳 *γɒk, kieu* : 邀 *·i̯äu* : 礉 *kʻau*
交 *kau* : 皎 *kieu* : 較 *kåk, kau* : 餃 *kʻiek* : 郩 *·âu*
苗 *mi̯ău* : 貓 *mau*
少 *śi̯äu* : 抄 *tṣʻau* : [沙 *ṣa*]
躁 *tsâu* : 鐰 *tsʻi̯äu* : 藻 *tsʻieu*: [橾 *səu, si̯u*]
巢 *dẓʻau* : 漅 *tsi̯äu* : 䲃 *tsâu*
刀 *tâu* : 鳭 *t'au* : 召 *d'ʻi̯äu* : 刁 *tieu*
兆 *d'ʻi̯äu* : 窕 *dʻi̯eu* : 桃 *dʻâu* : 桃 *t'au*
燎 *li̯äu* : 瞭 *lieu* : 潦 *lâu* : 獠 *lâu, t'au*
要 *·i̯äu* : 婹 *·ieu*
号 *γâu* : 枵 *xi̯äu*
高 *kâu* : 敲 *kʻau* : 喬 *gʻi̯äu* : 蹻 *gʻi̯äu, kʻi̯äu, gʻi̯äu, gʻi̯ak, ki̯ak* : 翯 *xåk, γåk,* [*γuok*] : 熇 *xâk,* [*xuk, xuok*]
堯 *ngieu* : 翹 *gʻi̯äu* : 趬 *kʻiek, kʻieu* : 撓 *nau, xâu* : [曉 *kəu, ·əu*]
羔 *kâu* : 䫣 *xieu, kʻi̯äu* : 穛 *tsi̯ak,* [*kuok*]
敖 *ngâu* : 謷 *ngau, ngâu* : 聱 *ngau, ngâu,* [*ngi̯əu*]
毛 *mâu* : 毣 *mǎk,* [*muk*] : 表 *pi̯äu*
龠 *i̯ak* : 論 *i̯äu* : [籲 *i̯u*]
焦 *tsi̯äu* : 撨 *sieu* : 癄 *tṣau* : 燋 *tsi̯ak, tsi̯äu* : 藮 *tṣåk* : [鷦 *tsi̯əu*]
樂 *ngåk, ngau, lâk* : 藥 *i̯ak* : 櫟 *liek* : 濼 *pʻâk, lâk, liek,* [*pʻuk, luok, luk*] : 𤺊 *li̯äu* : 轢 *liek,* [*lât*]
學 *γåk* : 鷽 *·åk,* [*uok*] : 礐 *kʻåk* [*γuok, γuk, ngεk*] : [嚳 *γuk*] : 覺 *kåk, kau*
暴 *bʻâu,* [*bʻuk*] : 鸔 *påk,* [*puok*] : 襮 *pâk,* [*puok*] : 爆 *påk, pâk, pau*
[隺 *γuok*] : 確 *kʻåk* : 鶴 *γâk* : [臛 *xuk*] : 矐 [*i̯uk*] [*γâk*]
[䍃 *i̯əu*] : 搖 *i̯äu*
麃 *pʻi̯äu, bʻau* : [瀌 *bʻi̯əu*]
夭 *·âu, ·i̯äu* : 吠 *·au* : 沃 [*·uok*] : [飫 *·i̯wo*]

This category, as the above list indicates, combines frequently such forms as *-åk, -i̯ak, -iek, -âu, -au, -i̯äu, -ieu* but have *-uok, -uk* forms only in eight series and *-i̯əu* forms in five. There are altogether about 20 cases of *-uok*, 11 cases of *-uk*, 2 cases of *-i̯uk*, and 12 cases of *-i̯əu* against hundreds of forms in *-âu*, *-i̯ä̆u*, *-åk*, *-i̯ak* etc. in the 36 series listed above. We have to conclude that this groups is on the whole kept away from *-uok*, *-uk*, *-i̯uk*, and *-i̯əu* as the Shï-king rimes reveal to us. The number of exceptions can, however, be further reduced, if we recognized in the *-uok* forms such as 沃 *·uok*, 熇 *xuok* (alt.) an origin different from that discussed in Section IV. Shï-king rimes also manifest it, for instance,

唐　揚之水　1　鑿 *dzʻâk*, 襮 *pâk*, 沃 *·uok*, 樂 *lâk*, *ngåk*
小雅　隰桑　2　沃 *·uok*, 樂 *lâk*, *ngåk*,
大雅　板　4　虐 *ngi̯ak*, 謔 *xi̯ak*, 蹻 *gʻi̯ak*, *kʻi̯äu*: 耄 *mâu*: 熇 *xâk*, *xuok*,
[*xuk*], 藥 *i̯ak*

This *-uok*, then, must have an opener *-o-*, perhaps **-uåk*,[1] different from the other *-uok* (**-uk*) which rimes frequently with **-i̯uk*.

II. Tuan's third category: We have to eliminate from this category those ju-sheng words like 谷 *kuk*, 玉 *ngi̯wok* which we have studied in Section III and have nothing to do with this category. The Shï-rimes and Hie-sheng have been given above. On the other hand, those words with finals *-uok*, *-i̯uk* discussed in Section IV have an intimate relation with *-âu*, *-i̯əu* here and have to be included.

畜 *xi̯uk*, *tʻʻi̯uk*, *tʻi̯əu*
周 *tśi̯əu*: 雕 *tʻâu*, *dʻâu*: 調 *dʻieu*: 鯛 *tʻʻi̯əu*, *tʻau*: 倜 *tʻiek*
叉 *tṣau*: 蚤 *tsâu*: 糔 *si̯əu*: 鬆 *tsʻiek*
酉 *i̯əu*: 茜 *si̯uk*
奥 *·âu*: 燠 *·i̯uk*, *·âu*: [噢 *·i̯u*]
幺 *·ieu*: 幼[2] *·i̯əu*: 軪 *·au*: 鮍 *·i̯uk*, *·i̯eu*

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[1] This is tentative.

[2] This word belongs, according to Kuang-yün, to rime 幽 and should be written, according to Karlgren, *iə̯u*, with a vocalic *i*. This reconstruction of the rime 幽 should be seriously questioned. In the Tables of Rimes it is traditional to consider this rime as belonging to the fourth division (四 等), and Karlgren, without further question, believes that it is of his type *γ* (Phonologie chinoise p. 676). This is not true. The fan-tsʻie in Kuang-yün consistently gives 居, 語, 香, 力, 巨, 巨, 渠 etc as tsʻie, all mouillé initials which appear only in the III division, i.e. before a consonantal *-i̯-*. All the more fatal is the appearance of *gʻ-* as initial which occurs only before a consonantal *-i̯-*; before a vocalic *-i-*, *γ-* should regularly appear. The number of words of this rime is very small, but we find no case of a non-mouillé initial We cannot explain all the mouillé initials by the phenomenon of 類隔; and the appearance of *gʻ-* in this rime is decidedly opposed to the reconstruction of a vocalic medial *-i-*. Karlgren's reconstructions such as 糾 *kiə̯u* for this rime have to be revised. The difference of 尤 and 幽 does not consist in the quality of the medial -i-, but has to be found elsewhere. I cannot find different origins for these rimes in Archaic Chinese, nor can I detect any difference in the modern dialects which is conclusive enough to determine their difference. I shall in this paper write *-i̯əu* temporarily for 尤 and 幽 alike, thus leaving this question open for further inquiry.

柳 *li̯əu*: 窌 *lau*, *li̯əu*: 聊 *lieu*
牢 *lâu*: 䜍 *lieu*
首 *śi̯əu*: 道 *dʻâu*
守 *śi̯əu*: 討 *tʻâu*
鳥 *tieu*: 島 *tâu*
帚 *tśi̯əu*: 掃 *sâu*
考 *kʻâu*: 巧 *kʻau*: 朽 *xi̯əu*
休 *xi̯əu*: 烋 *xi̯əu*, *xau*: 茠 *xâu*
老 *lâu*: 孝 *xau*
由 *i̯əu*: 軸 *d'ʻi̯uk*: 笛 *dʻiek*
逐 *d'ʻi̯uk*: 篴 *dʻiek*, *d'ʻi̯uk*
竹 *t'i̯uk*: 篤 *tuok*
丑 *t'ʻi̯əu*: 忸 *ni̯uk*: 政 *xâu*
[叟 *səu*]: 瘦 *ṣi̯əu*: 嫂 *sâu*: 艘*sieu*: 鷚 *si̯uk*: 数 *sau*: [螋 *ṣi̯u*]
透 *śi̯uk*, *tʻəu*: 秀 *si̯əu*
就 *dzʻi̯əu*: 殧 *tsi̯uk*
夙 *si̯uk*: 泦 *suok*
宿 *si̯uk*, *si̯əu*
壽 *źi̯əu*: 燾 *dʻâu*: 檮 *źi̯əu*, *źi̯uk*: [鑄 *tśi̯u*]: [犗 *tsʻâi* (?)]
肅 *si̯uk*: 嘯 *sieu*: 繡 *si̯əu*
臼 *ki̯uk*, [*ki̯wok*]
包 *pau*: 抱 *bʻâu*: 枹 *pau*, *bʻi̯əu*, [*bʻi̯u*]: 跑 *bʻau*, [*bʻåk*]: 雹 *bʻau*, [*bʻåk*, *pʻuk*]
冒 *mâu*, [*mək*]: 瑁 *mâu*, *muok*: 媢 *muok*, [*mək*], [*muk*]: 苜 *muok*, *mi̯uk*
叔 *śi̯uk*: 督 *tuok*: 寂 *dzʻiek*: [摵 *ṣɛk*]: [埱 *tsʻək*]: [椒 *tsi̯äu*]: [噈 *tsâp*]: [䙘 *tṣʻi̯wo*]
攸 *i̯əu*: 絛 *tʻâu*: 儵 *sieu*, *śi̯uk*: 條 *dʻieu*: 滌 *dʻiek*: [旐 *i̯äu*]
毒 *dʻuok*: 碡 *dʻuok*, *d'ʻi̯uk*, [*dʻuk*]: 纛 *dʻâu*
翏 *li̯əu*, *lieu*: 戮 *li̯uk*: 磟 *li̯uk* [*luk*]: 熮 *lieu*, [*li̯äu*]: 寥 *liek*, *lieu*: 嫪 *lâu*: 膠 *kau*
告 *kâu*, *kuok*: 焅 *kuok*, [*kʻuk*]: 梏 [*kåk*], *kuok*: 窖 *kau*: 簉 *tṣʻi̯əu*: [喿 *səu*]: [浩 *kâp*]
九 *ki̯əu*: 厬 *gʻi̯əu*, *kʻâu*: 軌 *k jwi*: [旭 *xi̯wok*]: 踂 *ki̯uk*
匊 *ki̯uk*: 鵴 *ki̯uk*, [*kʻi̯wok*]
舟 *tśi̯əu*: 鵃 *t'au*, [*tśi̯äu*]: [朝 *t'i̯äu*]: [貈 *γâk* (?)]
[孚 *pʻi̯u*]: 浮 *bʻi̯əu*: [殍 *pʻi̯u*, *bʻjwi*, *bʻi̯äu*]: 捊 *bʻau*: 捊 *bʻau*, [*bʻəu*]
秋 *tśi̯əu*: 愀 *dzʻi̯əu* [*tsʻi̯äu*]: 啾 *tṣi̯əu*, *tṣau*: 湫 *tsi̯əu*, *tsieu*
憂 *·i̯əu*: [擾 *nźi̯äu*]
曹 *dzʻâu*: 螬 *dzʻâu*, [*dzʻi̯äu*]: 慒 *źi̯əu*, [*dzʻuong*]
爪 *tṣau*: 舀 *i̯əu*, [*i̯u*]

柔 *nźi̯əu*: 猱 *nâu, ni̯əu*: [鍒 *nźi̯äu*]
丩 *ki̯əu*: [𦙶 *ki̯äu*]
咎 *gʻi̯əu*: 櫜 *kâu*: [欿 *bʻi̯äu*]: 叫 *kieu*: 麇 *kau*
矛 *mi̯əu*: 茅 *mau*: [楙 *məu*]: [雺 *məu, mung, muong*]: [霿 *mi̯u*]: [鶩 *muk*]: [瞀 *måk, məu*]: [稥 *muo*]

From the above list, we find only *9* series in which *-i̯wok, -åk,* and *-uk* forms are mixed in and 11 series in which *-i̯äu* forms are found; in the other 26 series no such forms are admitted. Altogether there are about 3 *-i̯wok*, 11 *-åk*, and 11 *-uk* forms and *18 -i̯äu* forms, against hundreds of forms in *-âu, -au, -i̯əu, -uok, -i̯uk*. On the whole then we may state without hesitation that the hie-sheng system keeps these two categories quite well apart. Exceptions may rise of course from various sources, and I have included in the above lists and calculation many probably spurious words which occur in Kuang-yün. We may, indeed, be surprised that these exceptions have not been more numerous.

We may now definitely reject Karlgren's tone theory, because we find no role which tone may be considered to have played in "Hie-sheng". Tuan's two categories then, with proper modification,[1] can be said to be established, and we have to find vocalic differences in these groups. The difference may be slight, in other words, there may be a certain amount of similarity between these vowels; for this reason we find some confusions in riming and in "Hie-sheng," but the general line of differentiation is clear, and can not be obliterated.

Further more, the above results obtained from the study of "Hie-sheng" present a curious phenomenon in the time of Tsʻie-yün. If we arrange the finals of these two groups, we at once discover a very peculiar combination :—

	A. *-âu, i̯əu* series		B. *-âu, -i̯äu* series	
Without Medial *-i̯-* :	*-âu* ,	*-uok*	*-âu* ;	*-âk, -uok*
	-au ;		*-au* ;	*-åk*
With Medial *-i̯-* :	*-i̯əu* ,	*-i̯uk*	*-i̯äu* ;	*-i̯ak*
With Medial *-i-* :	*-ieu* ;	*-iek*	*-ieu* ;	*-iek*

In forms without a final consonant it is only the forms with a medial *-i̯-* that manifest a difference; all the other groups have completely coalesced. But, in forms with a final *-k*, quite a good deal of distinction is still clear, thus *-uok* (< *-*uk*): *-âk* (< *-*åk*?), *-uok* (< *-*uåk*); *-i̯uk* (< *-*i̯uk*): *-i̯ak* (< *-*i̯åk*); only the *-iek* forms become identical. This clearly indicates that in the *-âu, -i̯əu* series we have to do with a closer variety of labial vowel, but in the *-âu, -i̯äu* series an opener variety of labial vowel. This evidence, I believe, is positive, and we have to reconstruct these finals according to this basis.

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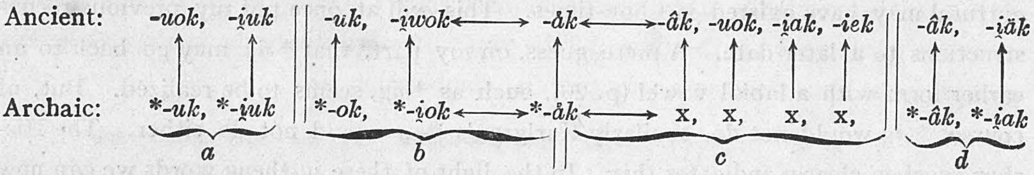
[1] cf. 孔廣森, 詩聲類卷十.

Let us start with the *-âk, -uok, -åk, -i̯ak, -iek* of series B. Karlgren's reconstructions are **-åk* (after *l-*, *ts-*, etc.),[1] **-uok, *-åk, *-i̯äk, *-iäk* some of which are already suggested in my previous article (p. 11) and accepted by Karlgren. I have equally suggested a labial vowel for the type *-âk*, but I hesitate to determine its exact value. If we examine Karlgren's reconstruction more closely, there are several difficulties which he did not explain.

(1) If *-âk, -i̯ak, -iek*, go back to Archaic **-âk, *-i̯äk, *-iäk*, we can not explain why they never rime with 屋 **-ok*, 燭 **-i̯ok*, as **-åk* (of 角 *kåk*) apparently does rather freely. We suspect then that the *-å-* in the above finals are not to be identified with the *-å-* in, for example, 角 **kåk* which rimes often with **-ok, *-i̯ok*.

(2) Karlgren assumes that after *l-*, *ts-*, **-åk* becomes *-âk*. But there are forms like *låk* (嶨, 礐, 嚛) in Kuang-yün, He has to explain why **låk* in one case become *lâk* and remains *låk* in the other. He cannot explain also such forms as 襮 *pâk, puok*: 爆 *b'åk, puok*, nor such forms as 鄗 *xâk, γâu*, 鶴 *γâk*: 確 *k'åk*, 翯 *xåk, γåk*.

Karlgren's law here must be wrong, we have to look elsewhere for explanation. Let us begin by examing the final -åk. The role played by **-åk* in these groups is interesting. It rimes, on one hand, with **-ok, *-i̯ok* and, on the other hand, with *-âk, -i̯ak, -iek*, but **-ok, *-i̯ok* do not rime with *-âk, -i̯ak, -iek*. It serves then, as it were, as a bridge between two series of finals, thus:



We have, it seems, from *a-d* a continuous lowering of the tongue position and a continuous unrounding of the vowel. We have determined that *a*-series has an *u* vowel, *b*-series *o* and *å*, *d*-series *â, a*, and part of *c*-series *å*. What is the main vowel of the other part of the *c*-series? It is not hard to answer. It is a vowel more close to *â*, but with a certain amount of liprounding, I shall designate it by *ω*. With this revision we have a new scale of rounded vowels for the Archaic Chinese:—

u	"a high back rounded vowel"
o	"a mid-high back rounded vowel"
å	"a mid-low back rounded vowel"[2]

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[1] But after p-, Karlgren cannot account for the form *-âk* (p. 168).

[2] *å* has in Archaic Chinese a slightly different value from that in Ts'ie yün.

ω "a low back rounded1) vowel"

The finals of the *c*-series, then, will be:—

Archaic: **-ωk* ; **-uωk* ; **-i̯ωk* ; **-iωk*
Ancient: *-âk* ; *-uok* ; *-i̯ak* ; *-iek*.

To these reconstructions, one may raise one objection that all these finals shall have a rath r unusual vowel *ω*, leaving us no **-i̯åk*, etc. I think, however, that this is not without a parallel in Archaic Chinese. If we recall those forms with an "*a*" head-vowel, we have to maintain there a difference in vocalic quality between words of the I division (namely 歌 **-â*), and those of the II division (namely 麻 **-a*), but for the III and IV division (namely 麻 **-i̯a* and 支 **-ia*) we need not assume two different shades of a. It is entirely analogous here. It is necessary that **-ωk*,)2) *-åk* must be clearly distinguished, but it is immaterial to reconstruct *-i̯ak*, *-iek* as **-i̯ωk* **-iωk* or as **-i̯åk*, **-iåk*; if we choose the latter forms, we have to understand thereby that the *-å-* there is already on the point of becoming an "*a*", thus its affinity with **-âk* but not with **-ok*. It still keeps a certain amount of lip-rounding which keeps it apart from **-âk*, **-i̯ak*. With such revisions, I believe, these reconstructions can be said to be put on solid ground.

We shall now turn to the *-âu*, *-au* *-i̯äu*, *-ieu* forms of series B. The parallel with the ju-sheng words is exact. I have in my previous article doubted the existence of a final guttural in this group (p. 20), and have reconstructed for these finals **-âu*, **-au*, **-i̯au*, **-ieu* for the Shï-king period, but I am now inclined to believe a final guttural may have existed in Chou-times. This will at once put my previous reconstructions to a later date. A mere guess, on my part, that **-âu* may go back to an earlier form with a labial vowel (p. 20), such as **-åg*, seems to be realized. But, of course, **-åg* would not do, similarly Karlgren's **-og* would not do either. The Hie-sheng system clearly indicates this. In the light of these ju-sheng words we can now determine that **-ωg* is to be preferred. The development of these finals can be represented thus:—

**-ωg* > **-ωu* > **-âu* > *-âu* (豪)
**-åg* > **-åu* > **-au* > *-au* (肴)3)
**-i̯ωg* > **-i̯ωu* > **-i̯au* > *-i̯äu* (宵)
**-iωg* > **-iωu* > **-iau* > *-ieu* (蕭)

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1) Probably not so rounded as the above 3 vowels.

2) Karlgren's **-åk* has to be rejected for reasons mentioned above in 2.

3) Karlgren's idea of the evolution of this final **kåg* > *kåag* > *kag* > Ts'ie-yün *kau* as given on p. 153 is not allowable. We have in Ts'ie-yun *-ăng*, and *-åk*. This *å* is preserved before *-ng* and *-k* and we can hardly expect that **å* will be delabialized to a before *-g*. It is much more feasible to consider the vocalization of *-g* as occuring before the change of *å* to *a*.

So much for series-B. For series-A, we cannot assign, as Karlgren did, a vowel identical to that of series-B. Tuan's distinction of these two series to my mind is real and not to be so lightly brushed off. To determine the vocalic quality of these *-âu*, *-i̯əu*, *-ieu*, etc., as distinct from those of series B. We have again to look for indications from the ju-sheng words. For the *-uok*, *-i̯uk* forms we have already reconstructed **-uk*, **-i̯uk*. What is then, this *-iek*? I have merely suggested in my previous paper (p. 11, note) that this *-iek* may go back to **-iok*. But this is impossible in view of the fact that it does not belong to Archaic **-ok*, **i̯ok* series which has been discussed in Sec. III. It belongs, on the contrary, to the **-uk*, **-i̯uk* series.[1] We have no other possibility but to reconstruct it as **-iuk*. This form must have undergone the effect of i-umlaut quite early, first giving us such forms like **-iük*, which becomes, through a slight lowering of the tongue position, **-iők*, and finally delabialized to *-iek*.

Corresponding to the *-iek* forms, we have *-ieu*. There are quite a few cases of alternative readings in Kuang-yün of such a type as *-ieu*: *-iek*, *-iuk*. For instance 篠 *tʻieu*, *dʻiek*, 寥 *lieu*, *liek*, 儵 *sieu*, *śi̯uk*, 㩋 䃤, 蟰, 橚, 潚 *sieu*, *si̯uk*, 蓼, 漻 *lieu*, *li̯uk*, etc. We have the right then to reconstruct this as **-iug*. The development of this final is also analogous, thus **-iug* > **iüg* > **-iőu* > **-ieu*.

Now let us turn to *-âu*, *-i̯əu* of this category. In my article about the sources of the Ancient Chinese vowel *â*, I have assumed on account of the striking vocalic alternation *â*: *ə* that they go back to **-əwg*, **-i̯əwg*. This, in the light of our present knowledge, will have to be given up, at least, in part. I see no objection, however, to consider this *ə* as secondarily evolved,[2] just as *-əu* from **-u*, and coalescing later with the original *ə* in the development which gives Tsʻie-yün *â*. As we shall see later, this is highly probable.

Some alternative readings of these *-âu* and *-i̯əu* are very su gestive as to the nature of these finals: 瑁, 相, 媢 *mâu*, *muok*, 告, 郜 *kâu*, *kuok* 纛 *dʻâu dʻuok*, 禱 *tʻâu*, *tuok*, 宿 *si̯əu*, *si̯uk*, 僇, 勠 *li̯əu*, *li̯uk*, 繆 *mi̯əu*, *mi̯uk* 殧 *dzʻi̯əu*, *tsʻi̯uk*, *tsi̯uk* etc. We have already shown that *-uok*, *-i̯uk* come from **-uk*, **i̯uk*, we can hardly doubt that the double readings here indicate an archaic relation of **-ug*: **-uk*[3] **-i̯ug*: **-i̯uk*.

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[1] The close relation of *-i̯ek* to *-i̯uk*, *-uok* can be seen from such series of Hie-sheng as 叔 *siuk*: 寂 *dzʻi̯ek*: 督 *tuok* (Many forms with *-i̯uk*, *-iek*, with but one form 椒 *tsi̯äu*); 攸 *i̯əu*: 絛 *tʻâu*: 脩 *sieu*, *si̯uk*: 條 dʻieu: 滌 *dʻiek* (many forms with *-i̯əu*, *-ieu*, *-i̯uk*, *iek*, except one single form 旒 *i̯äu*); 由 *i̯əu*: 軸 *dʻi̯uk*: 笛 *dʻiek* (many forms with *-i̯əu*, *-i̯uk*, *-iek* without a single form of *-i̯äu*), etc.

[2] Of course, we have to assume this *ə* is developed much earlier than the *ə* in *-əu*.

[3] Karlgren's reconstructions of the double readings of 告 as **kokʼ* and **kuok* are decidedly unsatisfactory. Our forms, **kug* and **kuk*, are much better. As to the final consonant, I believe that Karlgren has still not yet produced sufficient evidence for the the distinction of *-kʼ* and *-g*. What he considers to be in favor of his theory can be equally well explained in some other way. I shall discuss this problem in a seperate paper.

The development of these Archaic **-ug*, **-i̯ug* into Ancient Chinese is, I believe, as follows: before the vocalization of the final *-g* into *u*, the main vowel *u* has begun to delabialize slightly, finally yielding **-əu*, **-i̯əu* when the final consonant completely disappears. These **-əu*, **-i̯əu* having an *ə* identical to the original *ə*, similarly develops into *-âu*, *-i̯əu* in Tsʻie-yün, thus forming a complete parallel with such alternations as **-əm: *-i̯əm* > **-âm: *i̯əm*, etc.:—

**-ug* > **-ŭug* > **-əu* > *-âu*
**-.i̯ug* > **-i̯ŭug* > **-i̯əu* > *-i̯əu*

Let us now consider -au of this category. This is a rather troublesome form, but, I think, we may temperarily assign to it an Archaic **-og*:—

**-og* > **-oug* > **-ou* > **-au.*

There are two objections which can be raised to such a reconstruction. In the first place, why does this **-og* not belong to the **-ok*, **-i̯ok* series but to **-uk*, **-i̯uk* series? In the second place, would not this disturb the relation of *o*: *u* which are on the whole kept apart in Shï-king. To judge our reconstruction by its face value, it does seem that these two objections are justified. On the other hand, I think that this confusion has a close relation with the falling off of the final *-g*. To me the final -g in these categories are already weakened and on the point of vocalized into an *u*. This explains, on the one hand the rather rare cases of riming in Shïking with the ju-sheng words, and, on the other hand, it indicates that our **-og* probably already vacillates between **-og* and **-oug*; hence its affinity with **-ug*, **-i̯ug*. It does not go with **-ok*, **-i̯ok* because first, of the contrast of a strong *-k* and a weakened *-g* and, secondly, of the contrast in vowel *o: ou.*[1]

I shall now revert to one more point which Karlgren has not taken into consideration. We find in Section III certain examples of *-əu*, *-i̯u* (<**-u*,**-i̯u*) riming with **-ok*, **-iok*, etc. which we have temporarily put aside. These are exceptions, it is true, but they have to be explained because they never rime even exceptionally with **-ug*, **-i̯ug* (Karlgren's type: 母, 否, my type 告;) or *-uk*, *-i̯uk* (Karlgren's type: 服, my type: 毒, 宿). This is curious, and seriously questions the correctness of our reconstructions, if we do not explain away this phenomenon, exceptional as it may be. I shall advance a theory of certain influence of open and close syllables in Archaic chinese. In open syllables rounded vowels like *-o*, *-u* are more open and in syllables ended in a guttural, they are more close. For this reason **-u*, **-i̯u* of the open-syllable type approaches accoustically to **-o* of the closed-syllable type, and therefore rime exceptionally with it and form with it possibly certain exceptional hie-sheng words in one series of phonetic compounds. It is a contrast of this sort:

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[1] It seems to me that the very few cases of confusion in riming between **-uk*, **-i̯uk* and **-ok*, **-i̯ok*, but, on the other hand, the rather commoner confusions of **-ɷg*, **-åg*, **-i̯ɷg*, and **-i̯ug* are due to the persistence of *-k* on the one hand and to the weakening of *-g* on the other. I suspect that, in Shï-king period, final *-g* of these categories are already on the point of vocalizing into an *u*, and these finals may have already presented such forms as **-ɷug* **-åug*, **-ŭug* etc. It is for this reason that confusions arise:

Open syllable:	*o* (open):	*u* (open)
Closed syllable:	*o* (close):	*u* (close)

which excludes the chance of the open u to rime with the close u which must have been felt to be different. This explains very well the change of **-ok* to *-uk*, and similarly **-ong* to *-ung*; and the breaking of **-uk* into *-uək* and **-ug* > **-əu* > *-âu* is due the tendency of keeping the old *-u* distinct from the new *-u* which is forcing its way up. A parallel, though not identical process can be found in the great English vowel shift at the end of the Middle English period and in the beginning of the Early Modern English. There (due to a general tendency of raising of vowels,) the long ɔ is becoming *o*; long *o* is forcing its way up to *u*, and long *u* is compelled to break into a diphthong, thus [1]

$$\begin{tikzcd}
\textit{u} \arrow[r] & \textit{au} \\
\textit{o} \arrow[u] & \\
\text{ɔ} \arrow[u] &
\end{tikzcd}$$

We have here in Archaic Chinese, a similar tendency:

$$\begin{tikzcd}
\textit{uok} & \textit{uk, -ug} \arrow[l] \arrow[r] & \text{-əu} \arrow[r] & \text{, -âu .} \\
& \textit{-ok} \arrow[u] & &
\end{tikzcd}$$

On the other hand the *-u* of the open-syllable type, because of its open quality, develops much later into *-əu*, missing the chance of falling together with the original *ə* which later gives *â*.

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[1] Cf. O. Jespersen's diagram in his Modern English grammar vol. I, p. 232. Curiously enough it is believed that the development of *u* into *əu* and later *au* took place before *o* was shifted to *u*. In our reconstructions here we observe the same tendency, i.e. the shift started from the breaking of *-u-*.

VII.

Now I shall turn to a brief review of Karlgren's theory about Tsʻie-yün finals *-a, -i̯a, -uo, -i̯wo, -i̯u* (op. cit. p. 131 ff). First of all about the final guttural. Karlgren thinks that his type γ 路 has an implosive *-k* in Archaic Chinese. It rimes with Arch. **-o *-uo* because the final implosive is weak and accoustically very faint. This theory is very unlikely. He has in his former article (*Problems in Archaic Chinese,* JRAS, 1928) distinguished, fiirst, a *-k,* and a *-k\`* (falling tone) and later, added a *-g* (other tones). He has here again introduced, on account of certain difficulties of riming, a $-_k$ (implosive), and, in a foot note (p. 131-132), further suggested something like -u^w, -u^{wg} (dialectically ?) in order to explain some other difficulty of riming. If -u^w, -u^{wg} (with a velar "Nachschlag") can rime, through a poetical license, with Arch. **-ok *-iok,*[1] we can see no reason why we have never such rimes as *-o_k : *-ok* (路 : 谷) which are phonetically more similar. All these *-k, -k\`, -g,* $-_k$, and -^{wg} are, then, plainly artificial. There is no evidence whatsoever to verify these phonetic niceties, which are extremely dangerous to speculate on.[2] I shall discuss the problem of Archaic final consonants in a seperate paper.

His type γ 路, reconstructed as *-o_k , has two serious objections. First, it rimes frequently with **-o, *-uo, *-i̯o, *-i̯wo* which have no Archaic final consonant and, secondly, it never rimes with **-ok, *-i̯ok* which have an Archaic final consonant. This strongly speaks for a final **-o.* The only difficulty we have to explain is its "hie-sheng" with **âk.*

I have advanced a theory that the Hie-sheng system represents probably an older stage, so that **-âg* (karlgren's **-âk\`*) was already in Shï-king's time **-o.* It may have been, of course, dialectically preserved as **-âg* or in some other slightly different form. This agrees with both the Shï-rimes and the "hie-sheng," and explains why **-ok* and **-i̯ok* (木, 玉 etc.) are never mixed with this type, which they certainly would do if 路 were *lo_k , cf. such rimes as 雨 **-i̯wo*: 母 **muəg*; 木 **mok*: 附 **bʻi̯u*: 猷 **zi̯ug* : 屬 *d'*i̯ok* ; 奏 **tsu* : 祿 **lok,* etc. If words with no final consonant can occasionally rime with those with a final *-k* or *-g,* it is very unconvincing to assume that *-k* and $-_k$ would be sufficient to seperate two finals with an identical vowel in riming. Granted that a certain amount of accoustic difference exists between *-k* and $-_k$, the muscular movements and the muscular feeling involved in pronouncing these finals would be so extremely alike that they cannot help but to appear, if not too frequently, at least occasionally as rimes. Muscular feeling as well as accoustic impression is important in such considerations.

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[1] Cf. Sec. III.

[2] There is, further, no evidence to assume that Archaic explosive *-k* develops into Tsʻi -yün implosive *-k* Could it not be a general characteristic of the Sinitic languages to allow only implosive finals? No explosive finals, then, have existed.

Karlgren objects to this theory of mine because he finds that *-k`* was preserved as late as in middle Han epoch. The rimes of Han literature are very intricate and treacherous,[1] but even if *-k`* were preserved in other finals, does it necessarily affirm that *-k`* in *-âk`* etc. was not lost long ago? Different vowels may very likely exert different influences upon their final consonants. In the study of Yi-lin, Karlgren reconstructed 路 as lo_k . This is not justified, because such rimes as 兎 *tʿuo* : 路 *luo* : 得 *tək* prove nothing ; there are a large number of rimes such as 屋 *·uk*: 居 *ki̯wo*; 戶 *ɣuo*: 足 *ts'i̯wok*; 居 *ki̯wo*: 得 *tək* where an Arch. **-o*, or **-i̯o* rimes with a final *-k*. We have no adequate reason to think that 路 has still an implosive final consonant.

Because of the fact that the An-yang oracle bones have very few "hie-sheng" characters, Karlgren concludes that the majority of them are practically contemporaneous with Shï-king, and therefore the "hie-sheng" system, in deviating from the shï-rimes, shows a dialectical difference (op. cit. p. 139 ff.). This is, of course, a possibility, but it has really a very frail support. The extensive researches of Tuan yü tsʿai, Kiang You-kau, Kʿung Kuang-shen and others all confirm that the "hie-sheng" system agree admirably with the rime-system of shï-king. This theory of his explains why the inventers of "hie-sheng" characters put 路 *luo* and 各 *kâk* together because they pronounce them **glâk`* and *\*kâk*, but this still does not explains why shï-king does not rime 路 \*$glo_k$ with 木 *\*mok*, 玉 *\*ngi̯ok*. We have already shown that the distinction of *-k`* and $-_k$ is artificial, and if we imagine that some sort of a final guttural is still existant in words like 路. 夜, 庶 etc., there is only one solution left that is, 路 has a different vowel, and therefore does not rime with 木 **mok*. This is clearly out of the question, because it rimes with Arch. **-o*, **-i̯o* etc. The plain answer is that the final guttural has dropped in words like 路, 夜, 庶 and the "hie-sheng" system represents an older stage. That the An-yang oracle bones have very few "hie-sheng" characters is no objection. The Shï-king period is probably seperated from that by several hundred years, during which an elaborate "hie-sheng" system could have arisen and the final consonant in words like 路, 夜, 庶, could find time to drop out. Nor there is any serious difficulty to imagine that a more or less elaborate system of "hie-sheng" words exists side by side with the more primitive inscriptions on the oracle bones, which are definitely associated with the religious and superstitious practice of a special sort. On the other hand, this is not to exclude that "hie-sheng" characters are formed from time to time during the Shï-king period and probably in later times, and we may even suspect that many Tsʻie-yün _-uo_, _-i̯wo_, etc. may still go back to a form with a final guttural, but they are not revealed by "hie-sheng" on account of their late formation.

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[1] My colleague Mr. Lo Chʿang-pʿei is doing extensive research in the riming system of Han literature. His results will be of intense interest.

Karlgren has further mentioned as an objection to my theory that his type _a_ 家 _*kå_ rimes frequently with type B 故 _*ko_ but rarely with type ɣ 路 _*lo_ (Karlgren's *lo$_k$) (p. 135). But this clearly does not means that in the type 路 there is necessarily a final implosive guttural. The Shï-king riming system points to the contrary.[1] I rather leave this question open.

I shall give my reconstruction as follows:—

_*-âg_ > _*-o_ (shï-king; dialectically also _*-âg_) > _-uo_ (路)
_*-i̯ag_ > _*-i̯o_ (shï-king; dialectically also _*-i̯ag_) > _-i̯wo_ (庶)
_*-ɒg_ > _*-å_ (shï-king; dialectically also _*-ɒg_) > _-a_ (怕)
_*-i̯ɒg_ > _*-i̯å_ (shï-king; dialectically also _*-i̯ɒg_)[2] > _-i̯a_ (寫)
*-uâg > _*-uo_ (shï-king; dialectically also _*uâg_) > _-uo_ (護)
*-i̯wag > _*-i̯wo_ (shï-king; dialectically also _*-i̯wag_) > _-i̯u_ (瞿)
*-wɒg > _*-wå_ (shï-king; dialectically also _*-wɒg_) > _-wa_ (樓)

Karlgren has reconstructed 庶 as _si̯wakʼ_. This is not allowed by a study of the "hie-sheng," 䗪, 蹠, 墌, 摭, (_-i̯äk_ < _*-i̯ak_) are all kʻai-kʻou not ho-kʻou words. 庶 _si̯wo_ goes back then to _*si̯ag_, as I have done above. If _-uo_, _-i̯wo_ (Arch. _*-o_, _*-uo_, _*-i̯o_, _*-i̯wo_) go back to _*-âg_ _*-uâg_ and _*-i̯ag_ _*-i̯wag_, it is plain that Tsʻie-yün _-a_, _-i̯a_ cannot go back to the same sources. The interesting relation of 伯 _pɒk_: 怕 _pʻa_, 啞 _·ɒk_ and _·a_ leads us to reconstruct 怕 as _*pʻɒg_ and 啞 as _*·ɒk_ and _*·ɒg_. Similarly 夜 _i̯a_ has to go back to a final _*i̯ɒg_ not _*-i̯akʼ_ as given by Karlgren.[3]

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[1] It is needless to point out that in the type 路 a very weak final glottal catch may have been there as the remnant of the original final _-g_ such as in many modern Chinese dialects.

[2] Karlgren observes (p. 140) that type 夜 never rimes with the type 家 _*-kå_ and therefore cannot be *-i̯å$_k$ but *-i̯o$_k$. This observation is inexact. We can handly deny that 著 _tʼi̯wo_ (also (_tʼi̯ak_, _dʼʻi̯ak_) has had originally a final guttural, cf such forms as 櫡, 礡, 撯 _tʼi̯ak_, but it rimes in Shï-king with 素 _suo_ (< _*so_) and 華 _ɣwa_ (< _*gʻwå_) (齊 著 1). Similarly 者 _tśi̯a_ (< _*tʼi̯å_ < _*tʼi̯ɒg_) rimes with 馬 _*mǎ_, 野 _*diǎ_ (魯 頌 駉 1, 2, 3, 4), 都 _tuo_ (< _*to_ < _*tâg_) rimes with 家 _*kå_ (雨 無 正 1) etc. We can safely assume that _*-ɒg_, _*-i̯ɒg_ have become Shï-king _*å_ and _*-i̯å_.

[3] Karlgren's curious conclusion that the Tsʻie-yün language derives from an Archaic dialect that has not suffered the evolution *-i̯akʼ > *-i̯o$_k$ is most unconvincing. This implies that all Tsʼie-yün _-i̯wo_, in so far as they can be traced back to a final guttural, must go back to the ho-kʻou _*-i̯wag_, not the kʻai-kʻou _*-i̯ag_, thus his reconstruction 庶 _*si̯wakʼ_. This is not allowable. Words such as 庶 _śi̯wo_, 著 _tʼi̯wo_, 箸 _dʼʻi̯wo_, 據 _ki̯wo_, 遽 _gʻi̯wo_ must have been all kʻai-kʻou words, namely _*-i̯ag_; their "hie-sheng" words or alternative readings such as 著 _tʼi̯ak_, 劇 _gʻi̯ɒk_, 墌 _tśi̯äk_ clearly indicate

This leads us further to an examination of the ju-sheng words in Kuang yün which belong to the category of **-âk, *-i̯ak, *-ɒk,* etc. Are we to consider the double readings, *i̯a* and *i̯äk,* of 射 to be Arch. **-i̯ɒg: *-i̯ɒk* or **-i̯ɒg: *-i̯ak*? In other words, can we determine that one part of the *-i̯äk* forms may go back to **-i̯ɒk,* while the other part goes back to **-i̯ak* as previously determined by me (op. cit. pp 10 ff.)? This is highly probably because the final *-i̯ɒk* in Kuang-yün has only forms with guttural initials and one form with a labial initial, we may reasonably suspect that Arch. **i̯ɒk* after other initials have coalesced with **i̯ak* in becoming Tsʻie-yün *-i̯äk*:

**-i̯ɒk* (after gutturals and labials) > *-i̯ɒk* (劇, 檴)
**-i̯ɒk* (after other initials) > *-i̯äk* (射, 借)

On the other hand, *-i̯äk*[1] forms in Kuang-yün have no guttural, palatal explosive (*t', t'ʻ, d'ʻ*), nasal, and *l* initials, they are substituted by forms in *-i̯ak,* such as 脚 *ki̯ak,* 噱 *gʻi̯ak,* 著 *t'i̯ak, d'ʻi̯ak,* 媎, 蠚 *t'ʻi̯ak,* 逽 *ńi̯ak,* 若 *ńźi̯ak* 略 *li̯ak* etc., so that we have two different representatives, *-i̯äk* and *-i̯ak,* of Archaic **-i̯ak,* differentiated on account of their initials.[2] Similarly there are no ho-kʻou words, such as *-i̯wäk;* they are again substituted by forms in *-i̯wak* 玃, 攫 *ki̯wak,* 躩 *kʻi̯wak,* 戄 *gʻi̯wak,* 嬳, 臒 *·i̯wak,* 縛 *bʻi̯wak* etc. Thus:

$$\begin{tikzcd} & \text{-i̯äk} \\ \text{*-i̯ak} \arrow[ur] \arrow[r] & \text{-i̯ak} \\ \text{*-i̯wak} \arrow[r] & \text{-i̯wak} \end{tikzcd}$$

* * *

As a summary to what we have touched upon in our discussion, I shall make a list of our reconstructions and their developments into Ancient Chinese. I have tried to arrange the different stages of development according to a chronological order.

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this. This is due to his failure to recognize a **-i̯ag* which gives Shï-king **-i̯o* and latter *-i̯wo* and a **-i̯ɒg* which gives Shï-king **-i̯å* and latter *-i̯a.* Karlgren fails to observe that the ho-kʻou element exists in words of this category only after labial, guttural and laryngal initials. For this reason we have only 麌 *ngi̯u,* 武 *mi̯u,* 劇 *gʻi̯u,* 尃 *pʻi̯u* which go back to Shï-king **-i̯wo* but no such forms as *t'i̯u, tśi̯u,* etc. This is exactly parallel with such finals as **-uəg, *-i̯uəg, *-wək, i̯uək,* etc, which have also only labial, guttural and laryngal initials. Karlgren's explanation that 庶 *śi̯wo* has not become *śi̯u* on account of the final implosive *-ₖ* is altogether untenable (p. 145 note). Archaic Chinese has no such forms as **śi̯wak`*.

[1] I am only concerned with those *-i̯äk* forms which belong to the category in question. There are *-i̯äk* forms with various initials, such as 䵵 *t'i̯äk,* 滴 *d'ʻi̯äk* which belong to Tuan's 16th category and go back to altogether different finals. Similarly with ho-kʻou words such as 役, 疫 *i̯wäk,* 瞁 *xi̯wäk.*

[2] A few forms such as 鵲, 舄 *tsʻi̯ak* 諎 *tsi̯ak* etc., seem to have escaped from the umlaut.

This order must necessarily be relative and theoretical and may have included in one stage a very long period of time and in others a very short lapse of time, and some other uncertainties. But such an attempt will, at least, present clearly our arguments in a condensed form and will help to grasp the situation at a glance.

Archaic				Ancient	
**-əg*		**-əi*		*-ậi*	(哈)
**-ək*				*-ək*	(德)
**-úəg*	**-uug*	**-uu*	**-ůu*	*-əu*	(侯)[1]
**-uə́g*		**-uəi*		*-uậi*	(灰)
**wək*				*-wək*	(德)
**-i̯əg*		**-i̯əi*		*-i*	(之)
**-i̯ək*				*-i̯ək*	(職)
**-i̯úəg*	**-i̯uug*	**-i̯uu*	**-i̯ůu*	*-i̯əu*	(尤)
**-i̯uə́g*		**-i̯uəi*		*-wi*	(脂)
**-i̯uək*		**-i̯uk*		*-i̯uk*	(屋)
**-eng*				*-əng*	(登)
**-wəng*				*-wəng*	(登)
**-i̯əng*				*-i̯əng*	(蒸)
**-i̯uəng*		**-i̯ung*		*-i̯ung*	(東)
**-ong*				*-ung*	(東)
**-i̯ong*			**-i̯wong*	*-i̯wong*	(鍾)
**-ång*				*-ång*	(江)
**-ung*			**-uong*	*-uong*	(冬)
**-i̯ung*				*-i̯ung*	(東)
**-ωg (or *-ωug)*		**-ωu*	**-âu*	*-âu*	(豪)
**-ωk*				*-âk*	(鐸)
**-uωk*				*-uok*	(沃)
**-åg (or *-åug)*		**-åu*	**-au*	*-au*	(肴)
**-åk*				*-åk*	(覺)
**-iωg (or *-i̯ωug)*		**-i̯ωu*	**-i̯au*	*-i̯äu*	(宵)
**-i̯ωk*				*-i̯ak*	(藥)
**-iωg (or *-iωug)*		**-iωu*	**-iau*	*-ieu*	(蕭)
**-iωk*			**-iak*	*-iek*	(錫)
**-u*			**-ůu*	*-əu*	(侯)

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[1] After a labial initial and in shang-sheng.

Archaic				Ancient	
**-ug*	**-ŭug*	**-əu*		*-âu*	(豪)
**-uk*			**-uok*	*-uok*	(沃)
**-i̯ug*	**-i̯ŭug*	**-i̯u*		*-i̯əu*	(尤)
**-i̯uk*				*-i̯uk*	(屋)
**-iug*	**-iüug*	**-iöu*	**-ieu*	*-ieu*	(蕭)
**-iuk*	**-iük*	**-iök*	**-iek*	*-iek*	(錫)
**-og* (*or *-oug*)		**-ou*	**-au*	*-au*	(肴)
**-ok*			**-uk*	*-uk*	(屋)
**-i̯ok*			**-i̯wok*	*-i̯wok*	(燭)
**-âk*				*-âk*	(鐸)
**wâk*				*-wâk*	(鐸)
**i̯ak*				*-i̯äk*	(昔)
**-i̯ak*				*-i̯ak*	(藥)[1]
**-i̯wak*				*-i̯wak*	(藥)
**-ɒk*				*-ɒk*	(陌)
**-wɒk*				*-wɒk,*	(陌)
				also *-wɛk*	(麥)
**-i̯ɒk*				*-i̯ɒk*	(陌)[2]
**-i̯ɒk*				*-i̯äk*	(昔)
**-i̯wɒk*				*-i̯wɒk*	(陌)
**-âg* > **-o*[3]			**-uo*	*-uo*	(模)
**-wâg* > **-uo*				*-uo*	(模)
**-i̯ag* > **-io*			**-i̯wo*	*-i̯wo*	(魚)
**-i̯wag* > **-i̯wo*			**i̯u*	*-i̯u*	(虞)[4]
**-ɒg* > **-å*				*-a*	(麻)
**-wɒg* > **-wå*				*-wa*	(麻)
**i̯ɒg* > **-i̯å*				*-i̯a*	(麻)

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[1] After a guttural, palatal explosive, nasal or *l* initial.

[2] After a guttural or a labial initial.

[3] This and the following finals are identical with those which have originally no final guttural.

[4] After a guttural and a labial initial.

中文節要

從詩經的用韵跟諧聲的偏旁看起來，東 -ung, 鍾 -i̯wong 是屬于一部的，不常跟冬 -uong, 東（三等）-i̯ung 相混。 因爲東，鍾時常同江 -ång 押韵，所以我們可以擬定東韵是從上古 *-ong, 鍾韻是從上古 *-i̯ong 來的；冬韵跟東（三等）絕不與江韵押韵（除去一个來歷不明的降字），所以我們可以擬定他是從上古的 *-ung, *-i̯ung 來的。 我們知道 o 元音跟 u 元音在詩經裏不大混用來押韵。 高本漢把他們都擬作有 o 元音的，東 *-ong 冬 *-uong, 鍾 *-iwong, 東（三等）-iong 等，就不能解釋他們爲什麼分而不混了，所以我們不能接受他的學說。

同樣屋 -uk, 燭 -i̯wok 跟覺 -åk 常常的押韵而跟沃 -uok, 屋（三等）-i̯uk 分開，所以我也可以曉得屋韵，燭韵的字是從上古 *-ok, *-i̯ok 來的，而沃韵，屋（三等）是從上古 *-uk, *-i̯uk 來的。 高本漢對於這幾韵也犯了同樣的錯誤。

高本漢又反對我對於屬蒸部的東（三等）韵字的意見。 他以爲弓 ki̯ung 就是上古的 *ki̯ung, 這是不對的，因爲我們知道他顯然是不同上面所討論的冬，東(三等) *-ung, *-i̯ung 韵的字押韵和諧聲，並且照他的學說我們在上古時候差不多沒有 -un 音（有幾個例外可以別樣解釋）。 -i̯ung 同 -əng 押韵聲韵亦不諧協。 所以我還保持我的說學，弓 ki̯ung 是從上古 *kiuəng 來的；切韵系統很明白告訴我們 *-i̯uəng 到 -i̯ung 的變化：—

開口：	合口
登 -əng:	登 -wəng,（東 -ung 無屬蒸部者）
蒸 -i̯əng:	蒸（無），東（三等）-i̯ung

這顯然指明這種 -i̯ung 是從 -i̯uəng 來的。

同樣高本漢亦反對我對於屬之部的屋（三等）韵字的學說。 依上面同樣的理由我保持我的意見；例如服 b'i̯uk 是從上古 *b'i̯uək 來的而不是上古的 *b'i̯uk 。高本漢惟一的重要理由來反對我的辦法是因爲職韵有些合口字，如域 ji̯wək 。 我現在證明這類的字是有一種類推來的讀音，不代表眞正的音變。 對於這類字的音變我得了下列的定律：

上古 *-wəng, *-wək 在切韻時代還保存着，但是前面若是有个介音 -i̯- 的時候他們就變成 -i̯ung, -i̯uk. 廣韻職韵的合口字是類推來的讀音。

高本漢又修正我對於屬之部的尤韵字的意見。 他以爲否 pi̯əu, 有 ji̯əu 等字是從 *pi̯ug, *gi̯ug 來的。 這我也不能接受，不過我覺得我從前的意見有修改之必要。從前我以爲他們是開口字，這是錯的；他們是合口字，換言之，他們應該是上古的 *pi̯uəg, *gi̯uəg, 因爲輕重讀的地方不同我們在切韻得了兩種音：—

*-i̯úəg > -i̯uu > -i̯əu （尤）

*-i̯uə́g > i̯uəi > -wi （脂）

高本漢又修正我對於屬之部的侯韵字的意見。 他以爲母 məu 字應當是上古的 *mug 。 這我也不能接受，我以爲他是從上古 *muəg 來的。 上古的 *-uəg 在脣音的後面，因爲聲調的關係在切韻裏得出兩種音來：—

上聲　　：*-úəg > -uu > -eu（侯）

別的聲調：-uə́g > -uəi > -uâi（灰）

切韻賄韻（上聲）的脣聲母字只有兩个字每，挴是屬這類的，他們的讀音我覺得是由類推來的。 其餘屬侯韻的之部字大多數都在上聲，尤其是培，㟝等字的兩讀，上聲入厚，平聲入灰，顯然指示出來上列的兩條演變是對的。

高本漢對於幽部和宵部也有他的意見，他以爲這兩部是不應當分的，所以他的擬定是豪 *-og, 尤 *-iog, 肴 *-åg, 宵 *-i̯åg 蕭 *-iåg, 藥 *-i̯åk, 錫*-iåk, 覺 -åk, 等。 他的意見大體是對的，但對於幽，宵兩部的不分，我們不能承認的（理由詳本文），我現在把我從前的擬定從新修改如下：—

幽部	宵部
豪 -âu < *-ug : 沃 *-uok < *-uk	豪 -âu < *-ωg : 鐸 -âk < *-ωk
	沃 uok < *uωk
尤 -i̯əu< *-i̯ug : 屋(三等)-i̯uk <*-i̯uk	肴 -au < *-åg : 覺 -åk < *-åk
蕭 -ieu< *-iug : 錫 -iek < *-iuk	宵 -i̯äu < *-i̯ωg : 藥 -i̯ak < *-i̯ωk
肴 -au < *-og :	蕭 -ieu < *-iωg : 錫 -iek < *-iωk

在上古時候我們有下列四種圓脣元音：—

u	“高，後”
o	“中高，後”
å	“中低，後”
ω	“低，後”

高本漢對於魚的字如路等擬作 lo_k. 這我也不能贊成，因爲我我實在看不出爲什麼路 lo_k 不能同侯部的入聲如木 *mok 玉 *ngi̯ok 等押韻，我以爲路等字的韻尾已經失去了，我的擬定是：

-âg >-o （詩經；方言上也許是*-âg） >-uo （路）
-wâg >-uo （詩經；方言上也許是*-wâg） >-uo （護）
-i̯ag >-i̯o （詩經；方言上也許是*-i̯ag） >-i̯wo（庶）
-i̯wag>-i̯wo（詩經；方言上也許是*-i̯wag）>-i̯u （瞿）
-ɐg >-å （詩經；方言上也許是*-ɐg） >-a （怕）
*-wɐg >*wå （詩經；方言上也許是*-wɐg）>-wa（檴）
-iɐg >*i̯å （詩經；方言上也許是*-i̯ɐg） >-i̯a （寫）