THE DISTRIBUTION OF *-r-* AND *-j-* IN ARCHAIC CHINESE

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0. *Abstract* In Archaic Chinese, as reconstructed by Li Fang-kuei, there are three prevocalic on-glides: **-j-*, **-r-*, and **-rj-*.[1] The contrast between **-j-* and **-r-* is maintained in Ancient Chinese by means of vocalic gradation.[2] The contrast between **-j-* and **-rj-*, however, is not clearly shown except when co-occurring with dental initials,[3] or with unrounded velars.[4] The three-way contrast in glides suggests that the phonotactic structure of the language—disregarding the consonant clusters at the initial position, vowel clusters as syllabic nuclei, and the segmental or supra-segmental element for the tone—can be formulated as follows:

$$(C)(r)(j)VC/(C)(r)(j) \neq \phi$$

The constraint means that while any of the three segments is optional, at least one of them must be present. In other words, a syllable without any of these three nonsyllabics is not pronounceable in this language. For this formula to be true, the checked combinations of initials and finals in the following table must all be possible syllables.

1. See Li 1971, in which both **-j*V- and **-r*V- can be preceded by any consonant. The occurrance of **-rj*V-, however, is restricted to the syllables with *T- or *TS- series of initials. In his 1976 revision, *K*rj*V- sequences become possible. As for *KW*rj*V- and *P*rj*V- types, only slight traces of **gwrj*V- and **brj*V- syllables are found in the phonetic compounds.
2. The refexes of **r*V in Ancient Chinese are lower and more centralized in tongue position than those of **j*V, according to Karlgren's reconstruction.
3. The fact is that the contrast between *TS*r*- and *TS*rj*- is not as clearly maintained through history as that between *T*r*- and *T*rj*-. As Tung 1944 has pointed out, ṬṢV- and ṬṢ*j*V-, the Ancient Chinese reflexes of *TS*r*V- and *TS*rj*V- respectively, are almost in complementary distribution; and words of ṬṢV- reading may also have ṬṢ*j*V- reading. These may mean that *ṬṢ*r*- and *ṬṢ*rj*- have merged and redistributed into ṬṢV- and ṬṢ*j*V- before entering the Ancient period.
4. See Li 1976, also Mei 1981.

final type \ initial group	P-	T-	TS-	K-	KW-	*ϕ*-
VC	√	√	√	√	√	
*r*VC	√	√	√	√	√	√
*rj*VC	(√)	√	√	√	(√)	√
*j*VC	√	√	√	√	√	(√)

Of these combinations, only *P*rj*VC, *KW*rj*VC, and **j*VC, as indicated by enclosing them with parentheses in the table, have yet to be established.

This article attempts to posit the *-*rj*- /*-*j*- contrast after *P- and *KW-. As for **ϕj*VC, it seems to have been merged into **dj*VC, and thereafter redistributed into *dź*- and *ź*- in Ancient Chinese, leaving some traces in phonetic compounds too faint to be conclusive evidence.[5]

5. In phonetic compounds, words of *dź*- and *ź*- initials in Ancient Chinese tend to form two separate groups: one shows frequent contacts with words of *T- initials, including those of **r*- and **rj*-; and the other has contacts only with words of **r*- and **rj*-, if not confining to the initials of their own. The following list of words includes those of the latter group:

a. 射麝 źj- ; 射 øj- ; 謝 zj-
b. 筮噬遾遾 źj-
c. 善鄯僊膳鄯繕 źj-
d. 十什汁 źj-
e. 食蝕 dźj- ; 食 øj-
f. 繩譝澠鱦 dźj-; 蠅 øj-
g. 船 dźj- ; 沿鉛 øj-
h. 吮 dźj- ; 允統鈗阭 øj-
i. 抒紓 dźj- ; 墅 źj- ; 序抒 zj- ; 予仔野 øj- (exceptions: 苧杼 ḍj-)
j. 孰塾 źj-
k. 乘驂 dźj-
l. 上 źj-
m. 舌 dźj-
n. 實 dźj-
o. 市 źj-
p. 受綬授 źj
q. 涉 źj-
r. 雌雌 źj-
s. 舐貤 dźj- ; 匜酏也øj-

These 19 entries makes up over 40 percent of the total of the two groups. We do not rule out the possibility that it happens to fail to show their contact with *T-. In fact the chance for *øj*- and *zj*- of Ancient Chinese to have contacts with the initials of *T- origin through phonetic compounding is far greater than not, therefore it is expected to have some exceptions as 杼 in the list, and less than 50 percent allocation for this group.

We tentatively propose that the prevocalic elements of this group is **øj*-, which forms a natural group with **ør*- and **ørj*-, as all the other *C-, *C*r*-, *C*rj*-, and *C*j*- series do; and the prevocalic elements of the former group is **dj*-, accordingly it has frequent contacts with other dental initials. These two merged and then split into Ancient *dź*- and *ź*-. The diffusion of these rules may have taken different pace from place to place, thus the distribution of *dź*- and *ź*- are reported differently among the written records. For a fuller account of the redistribution of *dź*- and *ź*- after the Ancient period, see Cheng (forthcoming).

1. *Method* For reconstructing the phonological system of Archaic Chinese, phonetic compounds, and, less important, alternative pronunciations of identical characters, have been the major source materials. When these materials fail to provide sufficient information to enable reconstruction of the type of sound called for by historical rules, the historical rules then serve as the justification for such reconstruction. The on-glide **-j-*, for instance, is so reconstructed by Karlgren.

Since the **-rj-* / **-j-* contrast after labials *P- and rounded velars *KW- is least detectable in phonetic compounds and alternative pronunciations, historical rules concerning the development of **-r-* and **-j-* are reconsidered. The rules are then generalized to include some types of syllables with *P- as well as *KW- initials, so as to infer the existence of such a contrast in the specified environments.

2. *Different Development of the Same Vowel According to *r- or *-j-.* Velars K- of Ancient Chinese are palatalized almost without exception before the third and the fourth division unrounded finals. They are not as completely palatalized before the second division unrounded finals. It is generally believed that in the former case the on-glide *-j-* of the third division finals and main vowel *-e-* of the fourth division finals are the mechanism that triggered the palatalization.[6] In the latter case the phonological reason for the palatalization is unclear, but the environments do share a common feature; that is, the vowels of those finals are all by and large centralized. These descriptions can be summarized as

$$K > T'S \left\{ \begin{array}{l} -j \\ -e \\ \text{-centralized vowels.} \end{array} \right.$$

Examples of this palatalization process are:[7]

居 (residence) *kj*V- > *tśj*V-
鷄 (chicken) *ke-* > *tśj*V-
江 (river) *kǎ-* > *tśj*V-

6. The rule is more complicated than is stated here. For details, see Cheng ibid.
7. For Ancient Chinese, Li's revised version of Karlgren's system is adopted here.

皆 (all)	*kă-*	> *tśj*V-
閒 (space)	*kă-*	> *tśj*V-
嘗 (straw)	*ka-*	> *tśj*V-
交 (cross)	*ka-*	> *tśj*V-
嘉 (good)	*ka-*	> *tśj*V-
耕 (plow)	*kɛ-*	> *tśj*V-
緘 (seal)	*kă-*	> *tśj*V-
監 (oversee)	*ka-*	> *tśj*V-

In terms of distinctive features, *j* and *e* are both $\begin{bmatrix}+\text{front}\\-\text{back}\end{bmatrix}$. Thus, the change from *k* (which is [+back]) to *tś* (which is [+front]) before *j* and *e* is a natural process of regressive assimilation. The centralized vowels can at best be assigned with the feature [−back]. Nevertheless, palatalization of velars before [−back] still can not be described naturally, unless [−back] had already shifted to [+front] by this time, either through vowel change or the insertion of some [+front] on-glide before this [−back]. The difficulty is that there is no evidence whatsoever to support this hypothetical feature shift.

According to some other phonemicized versions of Karlgren's vowel system, the vocalics under consideration all share the feature [+front]. For example, in Hashimoto's system, the vowel for the second division finals is *e*, ɛ, or *ä*. In my proposed system, it is either ɛ or *ä*.[8] In either of these systems, the palatalization of velars in the syllables of the second division can be naturally described in rule (1):

$$(1)\ \begin{bmatrix}+\text{consonantal}\\+\text{back}\end{bmatrix} > \begin{bmatrix}+\text{high}\\-\text{back}\end{bmatrix} / \_\_ \begin{bmatrix}+\text{syllabic}\\-\text{back}\end{bmatrix}$$

Obviously this rule is an extension of the following rule, which governs the palatalization of velars before *j* and *e*.

$$(2)\ \begin{bmatrix}+\text{consonantal}\\+\text{back}\end{bmatrix} > \begin{bmatrix}+\text{high}\\-\text{back}\end{bmatrix} / \_\_ \begin{bmatrix}\alpha\text{syllabic}\\+\text{high}\\-\text{back}\end{bmatrix}$$

8. Ibid.

Rule (1) has never been completely in force, because at about the same time this rule was active, there was a competing rule affecting mainly the syllables of dental initials. This rule reads:

$$(3)\ \begin{bmatrix} +\text{syllabic} \\ -\text{back} \end{bmatrix} > [+\text{back}] / \begin{bmatrix} +\text{consonantal} \\ +\text{strident} \\ -\text{anterior} \end{bmatrix} \_\_$$

This rule has resulted in the -ɨ (支思) rime of the *Chung-yüan yin-yün* 中原音韵. The extension of this rule has also prevented some syllables of the second division finals with velar initials from behaving completely as rule (1) would require them to. Consequently, alternative pronunciations arose for some commonly used words:

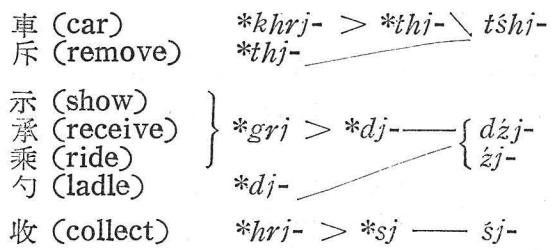
耕 (plow) k+[−back] > { tśj+[−back] (rule 1)
k+[+back] (extended rule 3··· [+strident] dropped) }

隔 (divide) k+[−back] > { tśj+[−back] (rule 1)
k+[+back] (extended rule 3) }

The feature $\begin{bmatrix} +\text{front} \\ -\text{back} \end{bmatrix}$ for the second division vowels is arrived at through reinterpretation of Karlgren's vowel system, which is done totally independent of the consideration of the palatalization rules. And now the palatalization rules also call for the same feature from the vowels involved. It is thus only logical to assume that the prevocalic element *-*r*- in Archaic Chinese has caused its immediately following vowel, **i*, **u*, **ə*, or **a*, to be fronted instead of centralized as suggested in Karlgren's system.

The prevocalic element *-*r*- could have such an effect on the vowels, simply because *r* itself is a dental. Its behavior in phonetic compounds also shows that **φr*- and other dental initials form a natural group. Even in **Krj*- type of prevocalics, *r* has caused its preceding velars to merge into dental initials, which in turn are palatalized:

支 (branch) **krj*- > **tj*- \ *tśj*
寘 (to place) **tj*- ___/



The segment *r in Archaic Chinese is used as an on-glide as well as a consonant ending. As an on-glide it shares the feature [−back] with *j, and as a consonant ending, it shares the feature [+coronal] with *t, *d, and *n. When it occurs next to the zero initial, it seems to function as both on-glide and consonant. And it does so when following velars. In the above examples, the feature [−coronal] of velars is assimilated to [+coronal] of *r.

Peculiarly, the vowels preceded by *-r- in Archaic Chinese all become front vowels in Ancient Chinese, whereas those with *-j- in Archaic Chinese do not entirely do so. Within the established system, we would have to conclude that the prevocalic on-glide *-j- does not cause the fronting of velars as *-r- does. Paralleling this phenomenon, Archaic velars *K- before *-j- are not palatalized until much later, and dentals *T- before *-j- are palatalized. That is to say, the first known palatalization rule in this language applies to *T- series, of which *-r- is a member. Since *T- and *-j- together would pass on a [−back] feature to the descendant of their combination, since *-rj- would also finally bring about a [−back] to its *K- initials, and since *-r- would cause its following vowel to acquire a bundle of $\begin{bmatrix} +\text{front} \\ -\text{back} \end{bmatrix}$ features, we may also expect the vowel after *-rj- to move forward or to a higher point of articulation under the influence of double $\begin{bmatrix} +\text{front} \\ +\text{high} \end{bmatrix}$ which is stronger than that of a single $\begin{bmatrix} +\text{front} \\ +\text{high} \end{bmatrix}$, i.e., a single *-$r$- or *-$j$-, provided that the vowel is not caused to change otherwise by its consonant ending, or through rule 3 above.

Interestingly enough, this turns out to be exactly the case as can be

seen from the following contrastive examples:[9]

赤 (red) **khrjak* > *tśhjäk* (*tś'jak*)/卻 (retreat) **khjak* > *khjak* (*k'jak*)

塩 (salt) **grjam* > *jiäm* (*jɛm*) / 嚴 (severe) **ngjam* > *ngjɐm* (*ngjəm*)

捐 (donate) **gwrjan* > *jiwän* (*wjɛn*) / 遠 (far) **gwjan* > *jwɐn* (*wjən*)

3. *A Case for KWrj-* In Li Fang-kuei's revised system, **gwrj-*, as in **gwrjan* in the above examples, is reconstructed as one of the sources of the Ancient *ϕ*- initial. The other types of *KW*rj*-, namely: **kwrj-*, **khwrj-*, **ngwrj-*, and **hwrj-*, are left for future consideration because of a lack of evidence. In the preceding section, it was found that evidence may lie in the differing influences of *-*rj*- and *-*j*- on the syllabic nuclei. The difference is

$$\mathrm{V} > \begin{bmatrix} +\text{front} \\ +\text{high} \end{bmatrix} / (\mathrm{C})\mathrm{rj}\ \text{——}$$

$$> \left\{ \begin{matrix} [+\text{front}] \\ [-\text{front}] \end{matrix} \right\} / (\mathrm{C})\mathrm{j}\text{——}$$

if no other factor is involved. On the basis of this observation, it may be hypothesized that K- of Ancient Chinese, when occurring before a non-front vowel with a *ho-k'ou* (合口) element -w-, could never be the reflex of Archaic *K- of the *KW*rj*- sequence, provided that the vowel has not been changed into such a non-front vowel by its consonant ending. And with regard to syllables of the types under consideration, if two alternative readings of a character, or two cognates written differently, show a high/non-high gradation in their vowels, they are the reflexes of *-*rj*V- and *-*j*V- respectively.

The origins in Archaic Chinese of the $\begin{bmatrix} +\text{front} \\ +\text{high} \end{bmatrix}$ or [−front] vowels of the types of Ancient Chinese syllables being considered here have been distinctively reconstructed by Li Fang-kuei. In his system, *-*i*- is used

9. The examples given in this and the next section are drawn from Li 1971, 1976 and 1977. The forms in parentheses are the phonemicized version by Cheng; see idib.

as the first component of many a vowel cluster to account for the development of the $\begin{bmatrix} +\text{front} \\ +\text{high} \end{bmatrix}$ feature in the syllabic nucleus. Without such an element, the nucleus is reflected as either [+front] or [−front], and if it is [+front], the nucleus is usually lower than the reflex of its *-*i*V- counterpart. E.g.,

龜 (turtle) **kwjiəg* > *kjwi* / 龜 (place name) **kwjəg* > *kjəu*
饋 (to present) **gwjiəd* > *gjwi* / 歸 (to present) **kwjəd* > *kjwěi*

These are further examples, phonologically in pairs as those of the above list:

淢 (torrent) **hwjiək* > *xjwək* / 囿 (garden) **gwjək* > *juk*
劌 (cut) **kwjiad* > *kjwäi* / 濊 (vast) **kwjad* > *jwɐi*
跪 (kneel) **gwjiar* > *gjwě* (*gwji*) / 虧 (loss) **khwjar* > *khjwě* (*k'wi*)
缺 (dificiency)? **khwjiat* > *khjwät* / 闕 (tower)? **khwjat* > *khjwɐt*
權 (power) **gwjiän* > *gjwän* / 遠 (far) **gwjan* > *jwɐn*
永 (long) **gwjiang* > *jwɐng* / 王 (king) **gwjɐng* > *jwang*

Historically, *-*i*- in these environments exerts precisely the same effect over the nuclei as *-*r*- does in other environments. Furthermore, these two sets of environments are in complementary distribution at least after velars:

*-*j*V-, after all types of initials.
*-*rj*V-, occurs after dentals, and velars *K-.
*-*ji*V-, occurs after rounded velars *KW-, and after labials as will be discussed in the next section. Also after dentals in 祭 and 元 rime groups, where *rj*V and *ji*V are in contrast.

As far as the finals in the envirments of *KW- are concerned, the vocalic difference as posited in *j*V/*ji*V contrast can be systematically interpreted to be prevocalic difference by means of *j*V/*rj*V contrast as it is after *K-.

Accordingly, there are **kwrj-*, **khwrj-*, **gwrj-*, and **hwrj-*, or even

possibly **ngwrj-* (e.g. 危 'lofty') in Archaic Chinese. These rounded velars would also merge into dentals as would the unrounded velars. The split of *KW*rj*- into *KW- and *TW- is similar to that of *K*rj*- into *K- and *T-, a case which, Mei 1981 believes, is due to dialectal divergence.

*K*rj*- may be preceded by **s*-, and so is *KW*rj*. For examples, words with phonetic symbol 毳 have either *khj*-, or *tshw*-, or *ṭṣhjw*-, for initial in Ancient Chinese. They must have derived from **khrj*-, **skhwr*-, and **skhwrj*- respectively, as follows:

橇 'sledge' *khrjagw > khjäu (?)
毳 'downy' *skhwrjad → *sthwjad > *tshwjad > tshjwäi
脆 'brittle' *skhwrjad → *sthwrjad > *tsrhwjad > ṭṣhjwäi

橇 is found in the *Hsia Pen-chi* chapter of the *Shih-chi* (史記夏本紀)。Hsü Kuang (徐廣) noted that it is alternatively written as 蕝 • 毳 appears in the *cheng-min* of the *Shih-ching* (詩烝民), of which, the *Shih-wen* (釋文) said, 脆 is used instead in some editions. 脆, a homonym of 毳, is better known as 脆. Its more standard form 脆, according to the *Shuo-wen chieh-tzu* (說文解字), has the phonetic symbol 絕 with the omission of 糸 radical.

Considering the forms of 跪 and 危 reconstructed above, as well as the fact that 絕 ('break off') can be written as 𢆶 (a semantic, and may as well a phonetic component of nowaday's 斷 'break'), we think that 色 and 危 under discussion are two variations of the same shape. Thus we have a word family with 絕 and 脆 as two of its members as follows:

斷	'break'	*kwran	>	tuân
折	'break'	*krjat	>	tśjät
絕	'break'	*sgwrjat	>	dzjwät
脆	'brittle'	*skhwrjad	>	tshjwäi
摧	'break'	*sgwrəd	>	dzuăi
⋮				

The last word has the phonetic symbol 隹, which, as Mei 1981 has demonstrated, may be a **kwrjəd*.

For the above reconstructions to stand, the fronting of vowels after

*-*r*- can take place only after the fronting of velars before *-*r*- has been completed. Chronologically, these two rules occurs far apart enough that they do not compete against each other. (It is interesting to note that the Ancient Ṭ- rarely occurs before the rounded Second Division finals.)

Another problem with our reconstruction of *-*rj*- after rounded velars is that the condition for the split of *g- into Ancient Chinese *ɣ(j)*- and *g*- formulated by Li again become unclear. My tentative explanation for the split is that the rule which changes **grj*V- into *ji*V- might have diffused to affect some of the **gwrj*V- syllables:

$$*\text{grjV-} > \text{jiV-} \quad ; \quad *\text{gwrjV} > \left\{ \begin{array}{l} \text{jwV} \\ \text{gjwV-} \end{array} \right\}$$

4. *A Case for *Prj-* The general contention regarding the condition of labio-dentalization of P- during the T'ang dynasty is that P- is followed by a prevocalic on-glide cluster -*jw*-, which is further followed by a central or a back vowel, in other words, a non-front vowel. This rule can be formulated as rule 4:

$$\begin{array}{lll} (4) & \text{P-} > \text{F-} \ / & \text{——jw [−front] [−front]} \\ & > \text{P-} \ / & \text{elsewhere} \end{array}$$

Thus the condition here is exactly the opposite to that of palatalization of unrounded velars before the second division finals. The mechanism of this process is again regressive assimilation in agreement with [+back], because labio-dentals are [+back].[10] The device designed to account for vowel gradation after rounded velars is also adopted here by Li Fang-kuei. Words in the following list are examples of this:

富 (rich) *pjəg > pjə̆u > pf- / 備 (prepare) *bjiəg > bji
馮 (surname) *bjəng > bjung > bv- / 馮 (cross) *bjiəng > bjəng
腹 (stomach) *pjəKw > pjuK > pf- / 愎 (perverse) *bjiəKw > bjəK
浮 (float) *bjəgw > bjə̆u > bv- / 彪 (stripes) *pjiəgw > pjiə̆u
風 (wind) *pjəm > pjung > pf- / 稟 (possess) *pljiəm > pjəm
弗 (not) *pjət > pjuət > pf- / 筆 (brush) *pljiət > pjə̆t[12]

10. For the reasons of assigning [+back] to labio-dentals, also see Cheng idib.

飛 (fly) *pjəd > pjwěi > pf- / 悲 (sad) *pjiəd > pji
文 (pattern) *mjən > mjuən > v- / 民 (people) *mjiən > mjiěn
發 (develop) *pjat > pjwɐt > pf- / 別 (depart) *pjiat > pjät
廢 (discard) *pjad > pjwɐi > pf- / 敝 (rag) *pjiad > pjäi
萬 (ten thousand) *majan > mjwen > v- / 面 (face) *mjian > mjiän
泛 (drift) *phjam > phjwəm > phf- / 貶 (demote) *pjiam > pjäm
縛 (tie) *bjaK > bjwaK > bv- / 碧 (emerald) *pjiaK > pjäK
方 (state) *pjang > pjwang > pf- / 兵 (weapon) *pjiang > pjwəng

From a structural viewpoint, *-*rj*- for the place of -*ji*- is sufficient to differentiate these two sets of words. And the *-*l*- in both 稟 and 筆 is readily accounted for by *-*r*-. That is to say the length of these syllables are even shortened. Viewed from another perspective, the *-*l*- reconstructed in the third division finals may be the remaining trace of a prevocalic *-*r*- once located there.

If this phonemicization is generalized as meaning that all *-*ji*V- following *P- or *KW be rewritten as *-*rj*V-, a total of 10 *ji*V sequence can be reduced from Li Fang-kuei's system. Some minor problems, like the one raised in section 3, will certainly arise. They, however, would present no major obstacles to this solution.

A short note before concluding this section: There have been some syllables with initial **m*- as *meng* 夢 (dream), *mu* 目 (eye) and *mou* 謀 (plot), in which labio-dentalization would have been expected to occur, but they did not undergo that process of phonetic change. They presumably had **mrj*- instead of **mj*- during the Archaic period.

5. *Conclusion* The main points of this discussion can be summarized as follows:

1) *-*r*- is a [−back] on-glide, as well as a $\begin{bmatrix} +\text{anterior} \\ +\text{coronal} \end{bmatrix}$ off-glide.
2) **r* occurring in the on-glide position causes the nuclear vowel to acquire [−back] feature, which in turn triggers the palatalization of *K- initials.
3) Vowels that become [+front] because of *-rj- prevent the labio-dentalization of *P- initials from taking place because labio-

dentals are [+back] themselves.

4) *-*rj*- is as symmetrically distributed as *-*r*- and *-*j*-. There are no further phonotactical constraints on the occurrences of prevocalic on-glides beyond the one pointed out at the beginning of this paper.

After those *-*ji*V- preceded by *P- or *KW- being reinterpreted as *-*rj*V-, there are still some *-*ji*V- remaining as they are in Li's system. They are uniformly in the shape of *-*jia*-, which parallels the existing *-*jua*- both structurally and distributionally,[11] and may as well historically.

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11. *-*jua*- is found only in the environments of *T- and *TS-. So is *-*jia*- after this reinterpretation. If the problem of the *ch'ung-niu* (重紐) is considered, we may want to retain some *-*jia*- so as to keep a rja-/jia- distinction for the sources of the contrasts. This, however, is not the only possible solution to this problem. Through a different approach, Pulleyblank also has -*rj*-, which can account for what our -*rj*- is meant to, but has different distributional pattern and range than outlined here.

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上古 r,j 兩介音的分佈
(中文提要)

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依李方桂先生的研究，上古有 r, j, rj 三個介音。其中 r, j 兩音在任何聲母後頭都可以出現，rj 則只能配舌、齒、及開口牙喉音；在唇音及合口牙喉音之後，只有跟全濁聲母的還留有殘跡，其他都暫時從闕。

從諧聲條例證介音的有無，雖富啓示，終嫌零散。自來成系統的擬訂，倚重音變規則的多，憑藉諧聲材料的少。例如介音 j，就是不循考古，而假審音的途徑構擬的。

本文試就審音的立場，論證李先生在唇音及合口牙喉音後設訂的 jiV，與在舌、齒及開口牙喉音後設訂的 rjV，到了中古時期元音的舌位都提前。既然 rj 與 ji 地位互補，作用相同，應可合用同一標法。由於 r 介音對元音正有提前的作用，本文建議採用 rj 以求一致。如此既可省去不少 ji，rj 的出現地位也可以不再受限制。賸下沒有改寫過來的 jiV，都在祭元兩部。其音韵地位，正與李先生原訂的 jua 相當。若從歷史的角度看，中古後期的顎化與輕唇化的現象，乃至中古音裡部份重紐的分別，也都可以在上古三個介音的對比上找到一以貫之的遠因。