

THE \*-I-/\*-JI- DISTINCTION IN THE OLD CHINESE RECONSTRUCTION  
SYSTEM OF LI FANG-KUEI<sup>1</sup>

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ABSTRACT

This paper considers an important syllabic contrast, \*-i- vs. \*-ji-, in the Old Chinese reconstruction system of Li Fang-Kuei (1971). It is noted that revisions to Li's system that have been proposed over the last three decades have eliminated this contrast in all but a few phonological environments. This raises the question of whether the contrast is tenable at all, and suggests that Li's system should ver further revised by eliminating the contrast altogether. Such a revision would force us to consider alternative views of the Old Chinese vowel system, and of the nature of Old Chinese \*-j-, which have been topics of debate in the field in recent years.

1. INTRODUCTION

The Old Chinese system of Li Fang-Kuei (1971) remains influential today and is still widely used, especially by scholars in Taiwan. In the thirty years since its initial publication, a number of revisions have been suggested by various scholars, including Li himself (1976). We can cite for example the proposals of Ting Pang-Hsin (1977-78) and Gong Hwang-cherng (1991, 1994, 1995), some of which incorporate elements of competing reconstruction systems. Among the changes that are now generally accepted are the reversal of Li's \*r- and \*l- initials, the reconstruction of medial \*-r- in (most) *chóngniǔ* 重紐 third-division syllables, and the reconstruction of \*-s as the source of Middle Chinese *qù* 去 tone.

When a sufficient number of revisions to a system have accumulated, it is well worth stepping back and re-evaluating the system as a whole. Individual

changes may have the aggregate effect of leading to imbalances or inconsistencies which are themselves impetus for further revision.

The purpose of this paper is to evaluate a series of revisions to Li's system proposed by previous scholars and by myself, and to consider the ramifications of these accumulated revisions on the overall structure of the reconstruction system.

## 2. THE \*V/\*IV CONTRAST IN THE SYSTEM OF LI FANG-KUEI

In addition to reconstructing \*i as one of four main vowels in his system (the other three being \*a, \*ə, \*u), Li also reconstructed \*i as the first element of two diphthongs, \*ia and \*iə. In his system the contrast between \*a and \*ia, and between \*ə and \*iə, which we can schematize as \*V/\*iV, was an important conditioning factor for several developments into Middle Chinese. Those conditioned by the presence of \*-i- were:

1) When not preceded by a medial, the development of Middle Chinese fourth-division rhymes.

2) When preceded by another medial (\*-r-, \*-j-, or \*-rj-), the development (in some rhyme groups) of Middle Chinese rhymes with higher, fronter vowels.

3) After medial \*-j- in some rhyme groups, the development of fourth-division Middle Chinese *chóngniǔ* 重紐 doublets after grave initials.

4) After labial initials and medial \*-j-, blocking of labiodentalization.

5) After medial \*-j-, blocking of the weakening of \*g<sup>w</sup>-, which normally became j-.

6) Blocking of the development of a rounded medial after dental initials in the WEI 微 and WEN 文 groups.<sup>2</sup>

It will be useful to divide these effects into two classes. I will refer to the first class, those effects labeled (1) and (2) above, as primary, and the second (labeled (3) through (6)) as secondary.

The primary effects are those that are system-wide and not disputed by scholars of Old Chinese. Everyone agrees, for example, that the distinction between first-division and fourth-division Middle Chinese syllables may be attributed to a difference in vowel quality at the Old Chinese stage, with fourth-division syllables derived from higher vowels. In some systems what Li

reconstructs as \***ia** > **ie** may be reconstructed as \***e** > **e**, but the quality of the distinction is not in doubt, and Li's use of the symbol \***i** can be taken at face value as representing a vocalic element [i]. Similarly, the rhyme splits found in certain rhyme groups leading to distinct second- and third-division Middle Chinese rhymes are reconstructed as real vocalic distinctions in all reconstruction systems.

It is the secondary effects which are the subject of this paper, and whose nature is more uncertain. In many cases it seems as if Li's reconstruction of \***i** was merely an orthographic, or notational, device, a way of marking a syllabic contrast whose phonetic nature is not clear. It is among these reconstructions that several revisions to Li's systems have been proposed. Before turning to the nature of these revisions, let us review in some more detail the motivations behind the reconstruction of \*-**iV**- in Li's system. (For simplicity's sake, I will refer to this \***i** as a 'medial' whenever it occurs before a main vowel.)

## 2.1 Medial \*-**i**- and Fourth Division

Karlgren reconstructed a medial \*-**i**- for all Middle Chinese fourth-division rhymes. Indeed, it is a defining characteristic of fourth division in his reconstruction, although a phonemic analysis might view it as redundant since all fourth-division rhymes also have main vowel **-e-**, which does not appear in any other divisions. One could thus rewrite Karlgren's fourth-division **-ie-** as simply **-e-** without disturbing the structure of the phonological system. Li was aware of this, but thought it irrelevant to the work of reconstructing Old Chinese: "Those who have studied the *Ch'ieh-yün* system in recent times have adopted the view that there was essentially no medial *i* in fourth division rhymes. Perhaps this does not occasion any great difficulties where the *Ch'ieh-yün* system is concerned; from the standpoint of Archaic Chinese, however, the system must at least have had a vocalic *i* in the fourth division rhymes, which in turn would enable us to avoid many complex vocalic problems" (1971 [2001]:23).<sup>3</sup>

For those Old Chinese rhyme groups which have no first-division reflexes in Middle Chinese, namely the ZHEN 真, ZHI 脂, GENG 耕, and JIA 佳 groups, Li simply reconstructed main vowel \*-**i**-. When not preceded by medials \*-**r**- or \*-**j**-, the breaking of this vowel to **-ie-** accounts directly for the development of

Middle Chinese fourth-division reflexes and explains the lack of first-division reflexes. For example, in the JIA 佳 group, *rù* 入-tone words develop this way:

<u>OC &gt; MC</u> <sup>4</sup>	<u>MC division</u>	<u>Example character</u> <sup>5</sup>
*-ik > -iek	fourth division	擊 *kik > kiek
*-rik > -ɛk	second division	擊 *prik > pek
*-jik > -jäk	third division	脊 *tsjik > tsjäk

But for the many rhyme groups which have both first-division and fourth-division reflexes (all of which have main vowels \*-a- and \*-ə- in Li's system), Li reconstructed medial \*-i- to account for the Middle Chinese fourth-division rhymes. Consider for example these developments in the YOU 幽 group:

*-ək <sup>w</sup> > -uok	first division	告 *kək <sup>w</sup> > kuok
*-rək <sup>w</sup> > -äk	second division	學 *grək <sup>w</sup> > ɣäk
*-jək <sup>w</sup> > -juk	third division	竹 *trjək <sup>w</sup> > tjuk
*-iək <sup>w</sup> > -iek	fourth division	迪 *diək <sup>w</sup> > diek

## 2.2 Medial \*-i- and Rhyme Splitting

“Rhyme splitting” (*chóngyùn* 重韻, literally “double rhymes”) refers to the fact that a single Old Chinese rhyme group may have more than one Middle Chinese rhyme reflex of the same division. The number of Middle Chinese rhymes is much greater than the number of Old Chinese rhyme groups. The reconstruction of medials \*r, \*j and \*i in Old Chinese accounts for many splits, with each medial type conditioning a different Middle Chinese division. But this is not sufficient to account for the development of all the Middle Chinese rhymes. For example, the YUAN 元 group of Old Chinese (with main vowel \*a) has reflexes in two different Middle Chinese second-division rhymes, Shān<sub>1</sub> 刪 -an and Shān<sub>2</sub> 山 -än. According to the single-vowel principle, which states that all the words in an Old Chinese rhyme group should be reconstructed with the same main vowel, both must be reconstructed with the vowel \*a. Since both are second-division rhymes, they must both be reconstructed with medial \*-r-. How then to account for the split? Li reconstructs contrasting vowels \*-a- and \*-ia- after medial \*-r-. The presence of \*-i- conditions the development of a higher vowel:<sup>6</sup>

\*-ran > -an      second division      刪 \*sran > šan  
 \*-rian > -ǎn      second division      山 \*srian > šǎn

The same device is used for third-division rhyme splits. The YUAN 元 group also has two different Middle Chinese third-division reflexes, the Yuán 元 -en and Xiān 仙 -ǎn rhymes. These are accounted for by reconstructing \*-jan for the former and \*-jian for the latter:<sup>7</sup>

\*-jan > -jen      third division      軒 \*xjan > xjən  
 \*-jian > -jǎn      third division      嗎 \*xjian > xjǎn

Rhyme splitting is largely confined to second- and third-division rhymes. In the few cases where it occurs in first-division rhymes, Li cannot employ the \*V/\*iV distinction, since the latter would give rise to a Middle Chinese fourth-division rhyme. In the case of the Old Chinese TAN 談 rhyme group, the traditional analysis of the rhyme groups—the legacy of the Qīng dynasty philologists—holds that it includes words found in two Middle Chinese first-division rhymes: the Tán<sub>1</sub> 談 rhyme (in its entirety) and the Tán<sub>2</sub> 覃 rhyme (in part; the rest derived from the Old Chinese QIN 侵 group).<sup>8</sup> Li, however, assigns all of the Tán<sub>2</sub> 覃 rhyme to the QIN 侵 group (1971 [2001]:28). This eliminates the first-division rhyme split.<sup>9</sup>

In the case of the ZHI 之, XIAO 宵 and YOU 幽 groups, each contains words from two different first-division Middle Chinese rhymes. Most ZHI 之 group words with no medial develop into Middle Chinese Hāi 哈 (*kāikǒu* 開口) and Huī 灰 (*hékǒu* 合口) rhymes, but some words with labial initials enter the Hóu 侯 rhyme. Li can find no explanation (1971 [2001]:38) for the split. A similar problem occurs with labial-initial words in the XIAO 宵 group (*rù*-tone only), but in these cases many of the words have multiple readings in Middle Chinese and Li ascribes the various reflexes to dialect mixture (1971 [2001]:62). Labial-initial words are again the trouble-makers in the YOU 幽 group, where some develop irregularly into the Hóu 侯 rhyme instead of the expected Háo 豪 rhyme.

### 2.3 Medial \*-i- and the Middle Chinese *Chóngniǔ* Distinction

The term *chóngniǔ* refers to a contrast found in Middle Chinese among third-division syllables having the same rhyme and initial, and having no *kāikǒu/hékǒu* distinction. When Li revised Karlgren's Middle Chinese

reconstruction, which had ignored this contrast, he set up two third-division medials, **-j-** and **-ji-**, to account for it. Thus in Middle Chinese the two Xiān 仙 rhyme *qù*-tone words 弁 *biàn* and 便 *biàn* are reconstructed **bjän** and **bjjän** respectively, and the two Xiāo 宵 rhyme *shǎng* 上-tone words 表 *biǎo* and 標 *biǎo* are reconstructed **pjäu** and **pjiäu** respectively. The medial **-ji-** is supposed to account for the fact that the word is third-division (thus the **-j-**) yet has features making it similar to fourth-division words (thus the **-i-**). The obvious difficulty of proposing that a language could effectively distinguish **bjV-**, **bjjV-**, and **biV-** was simply felt to be unavoidable because of the intractable nature of the so-called “*chóngniǔ* problem”, and Li indicated that the distinction between **-j-** and **-ji-** could be considered purely notational.

In cases where Middle Chinese *chóngniǔ* distinctions arose from a single Old Chinese rhyme group<sup>10</sup>, Li simply pushed back this **-j-/ji-** distinction into Old Chinese, setting up a contrast between **\*-jV-** and **\*-jjV-** after labial, velar, and glottal initials. Consider these examples from the XIAO 宵 rhyme group:

<b>*-ag<sup>w</sup></b> > <b>-âu</b>	first division	高 <b>*kag<sup>w</sup></b> > <b>kâu</b>
<b>*-rag<sup>w</sup></b> > <b>-au</b>	second division	巢 <b>*dzrag<sup>w</sup></b> > <b>dzau</b>
<b>*-jag<sup>w</sup></b> > <b>-jäu</b>	third division (III-3) <sup>11</sup>	表 <b>*pjag<sup>w</sup></b> > <b>pjäu</b>
<b>*-jiag<sup>w</sup></b> > <b>-jiäu</b>	third division (III-4)	標 <b>*pjiag<sup>w</sup></b> > <b>pjiäu</b>
<b>*-iag<sup>w</sup></b> > <b>-ieü</b>	fourth division	僚 <b>*liag<sup>w</sup></b> > <b>lieü</b>

(In fact the XIAO 宵 group is the only one for which Li was able to account for the *chóngniǔ* contrast in such a straightforward manner.)

Like the Middle Chinese reconstruction of a **-j-/ji-** distinction, this Old Chinese reconstruction has been criticized for artificiality. One might attempt to sidestep this problem by arguing that this is simply a notational device for recording a distinction whose phonetic nature is as yet unknown. One difficulty with this argument is that if the reconstructed phonological system and syllable structure cannot account for the distinction except in a clearly artificial manner, this may indicate a fundamental flaw in the reconstruction as a whole. In other words, future replacement of the notational device with an actual reconstructed distinction may require more than simple substitution; it may require a revamping of the system as a whole.

In the context of Li’s Old Chinese reconstruction, this solution to the *chóngniǔ* problem presents an even more immediate difficulty, however, since it

leads to direct contradictions. For example, in rhyme groups with main vowel \*i, it is not possible to set up a distinction between \*-jV- and \*-jiV-, and so there is no way to account for *chóngniǔ* distinctions in rhymes descended from the ZHI 脂, ZHEN 真 and JIA 佳 groups. For example, Li gives 眉 \*mjid > mji (III-3) but 匕 \*pjid > pi (III-4).<sup>12</sup>

Another contradiction is found with the use of the \*-j-/\*-ji- distinction to account for third-division rhyme splits. Within a single Old Chinese rhyme group there may potentially be contrasting syllables with reflexes in Middle Chinese third-division rhymes A and B, and rhyme B may in turn have a *chóngniǔ* contrast.<sup>13</sup> This three-way structural contrast is in fact found in the YUAN 元 group, since the Middle Chinese Xiān 仙 -ǎn rhyme contains a *chóngniǔ* distinction. If the Old Chinese medial distinction \*-j-/\*-ji- is used to account for the rhyme split, it cannot also be used for the *chóngniǔ* contrast; conversely, if it used to account for the *chóngniǔ* contrast, it cannot be used to condition the rhyme split. In the case of the YUAN 元 group, Li has chosen to account for the rhyme split, and has left the *chóngniǔ* distinction unexplained.

*-an > -ân	first division	難 *nan > nân
*-ran > -an	second division	刪 *sran > şan
*-rian > -ǎn	second division	山 *srian > şǎn
*-jan > -jen	third division	軒 *xjan > xjən, 反 *pjan > pjwən
*-jian > -jäñ	third division (III-3)	弁 *bjian > bjän, 褰 *khjian > khjäñ
*-jian > -jiän	third division (III-4)	便 *bjian > bjiän, 遣 *khjian > khjiän
*-ian > -ien	fourth division	見 *kian > kien

This is a direct violation of the regularity principle. It should be noted, however, that at the level of the individual syllable it is very difficult to find a minimal three-way contrast among actual words in the Middle Chinese third-division rhymes (-jen, -jäñ, -jiän). (Among acute-initial syllables we do not even find a single two-way contrast.<sup>14</sup>) In fact, only with initial k- do we find such a contrast. This (near-)complementary distribution, which Li apparently did not take into account, opens up several possibilities for resolving the contradiction. But it is not possible to do so in a consistent manner employing only the medial \*-ji-.

#### 2.4 Medial \*-i- and Labiodentalization

The third function of medial \*-j- in Li's system is related to the labiodentalization of bilabial initials in Middle Chinese. In the *Qiyùn* there is no evidence for more than one series of labial initials **p-**, **ph-**, **b-**, **m-**. By the time of the rhyme tables, however, a series of labiodentals appears in some third-division rhymes. These labiodentals are clearly derived from the earlier bilabials, but the conditioning factors accounting for the change are not easy to specify with precision. In general, labiodentalization seems to have occurred in the presence of medial -j- and a back vowel (Baxter 1992:72-3, 189-191). But this formulation is imprecise, and there appear to be a number of exceptions. Li argued that the conditioning factor for labiodentalization was medial -j- together with an allophonic rounded feature <sup>w</sup> of the labial initial, which was in turn conditioned in a rather complex (and phonetically not entirely plausible) way. The ordered rules for rounding and labiodentalization can be formulated as follows (Li 1971 [2001]:77):

1. \***p-** > **p<sup>w</sup>** / \_\_\_ {**u,o**}, \_\_\_ **V**{**n,t**}, \_\_\_ **jV**{**m,n,ng,p,t,k,i,u**}

(\***p** becomes rounded before a rounded vowel, before any vowel followed by -**n** or -**t**, or before medial \*-**j-** when the syllable has an ending after the main vowel)

2. **p<sup>w</sup>** > **f** / \_\_\_ **jV**{**m,n,ng,p,t,k,i,u**}

(the rounded allophone of /p/ becomes a labiodental before -**j-** when the syllable has an ending)

Note that the first rule applies to Old Chinese forms, and the second to Middle Chinese forms.

Even these complex rules were not descriptively adequate; a number of third-division labial initials do not become labiodentals as predicted by these rules. To account for this, Li modified these rules to note explicitly that although \***p** became rounded before \*-**jV**, it never became rounded before \*-**jiV**. He then added a third rule:<sup>15</sup>

3. -**jiV** > -**jV**

so that syllables whose labiodentalization was blocked by -**i-** would not automatically become *chóngniǔ* fourth-division.



It was then a matter of reconstructing **\*-ji-** rather than **\*-j-** in the appropriate places in Old Chinese to block rounding, which in turn prevented labiodentalization; the original conditioning factor **-ji-** then disappears, merging with **-j-**.

It has been argued that since labiodentalization is a phenomenon which occurred between the stages of Early and Late Middle Chinese, one need not take it into account in a reconstruction of Old Chinese. A counter-argument is that, if the conditions for the change were already in place by Early Middle Chinese, one should account for the presence of those conditions in Old Chinese. Li claimed that “the change in rule 3 had already taken place during the *Ch'ieh-yün* period.” This meant that Li had to account for these changes in his Old Chinese reconstruction.

Li's use of the **\*V/\*iV** contrast for this purpose was occasionally at odds with the other roles (accounting for rhyme splits and *chóngniǔ* doublets) described above. Indeed, in the earlier example

**\*-jian > -jän** third division (III-3) 弁 *\*bjian > bjän*

**\*-jian > -jiän** third division (III-4) 便 *\*bjian > bjiän*

the reconstruction of **\*-ji-** in both words could be attributed to the fact that neither developed a labiodental initial, rather than to the fact that they entered the Xiān 仙 rhyme instead of the Yuán 元 rhyme. In either case, the reconstruction conflicts with the need to reconstruct **\*-ji-** for *chóngniǔ* fourth-division words but simply **\*-j-** for *chóngniǔ* third-division words.

## 2.5 Medial **\*-i-** and the Development of **\*g-**

Another function of medial **\*-i-** in Li's system involves third-division developments of the Old Chinese velar initial **\*g-**.

In Middle Chinese, **g-** (*qún-mǔ* 群母) and **j-** (*yù-sān* 喻<sub>三</sub>) both appear only with third-division finals, and both are in complementary distribution with **ɣ-** (*xiá-mǔ* 匣母) which never occurs with third-division finals. Karlgren supposed that **g-** and **ɣ-** were descended from a common source, while Tung T'ung-ho (1944) reconstructed **j-** and **ɣ-** as descended from a common source. Li's insight that most syllables with initial **j-** are *hékǒu*<sup>16</sup> allowed him to place its origin in the labiovelar initial **\*g<sup>w</sup>-**, leaving **g-** and **ɣ-** as the only descendants of **\*g-** (1971 [2001]:18), and resolving the conflict:

\*g- + \*-j- > g- (third division only)

\*g- > ɣ- elsewhere (first, second, fourth division)

But since syllables with initial g- may be *kāikōu* or *hékōu*, the latter descended from \*g<sup>w</sup>-, a problem remains: how to determine when \*g<sup>w</sup>j- becomes **gjw-** and when it becomes **jw-**? Li's solution is:

\*g<sup>w</sup>- + \*-j- > **jw-** (third division only)

\*g<sup>w</sup>- + \*-ji- > **gjw-** (third division only)

\*g<sup>w</sup>- > ɣw- elsewhere (first, second, fourth division)

Thus the presence of \*-i- prevented the weakening of \*g<sup>w</sup>- to j- which otherwise occurred before \*-j-.

But, as with the use of \*-ji- to block labiodentalization, this use of \*-ji- to block the weakening of \*g<sup>w</sup>- conflicts with other uses of \*-ji-. This can be illustrated by the following two words in the Middle Chinese Yóu 尤 rhyme as reconstructed by Li (1971 [2001]:38):

舊 \*g<sup>w</sup>jəg > gjəu

又 \*g<sup>w</sup>jəg > jəu

According to his own criteria, Li should reconstruct 舊 **gjəu** as \*g<sup>w</sup>**jiəg**; but this is not an option since \*-**jiəg** is the source of the Middle Chinese Zhī 脂 rhyme.

## 2.6 Medial \*-i- and the Development of *Hékōu* Syllables

Medials \*-i- and \*-ji- are also reconstructed in a small number of syllables with dental initials to condition the development of Middle Chinese *kāikōu* syllables. Li proposed a sound shift \*ə > \*uə / T \_\_\_ T (where T represents a dental consonant) to explain the development of *hékōu* syllables descended from the Old Chinese WEI 微 and WEN 文 groups (\*-əd/\*-ət and \*-ən respectively). The motivation for this rule was the scarcity in Middle Chinese of contrasting *kāikōu* and *hékōu* syllables with dental initials descended from these groups. Nearly all Middle Chinese descendants are *hékōu*.<sup>17</sup>

Although he doesn't mention it explicitly, his charts make it clear that this change does not occur in fourth-division words; that is to say, it does not occur when the vowel is \*iə rather than simply \*ə. For example, Li lists (1971 [2001]:48-9) these words:

臀 \*dən > duən (first division *hékǒu*)

殿 \*diən > dien (fourth division *kāikǒu*)

We can describe the effect of medial \*-i- here as blocking the sound shift (in addition to conditioning the development of a Middle Chinese fourth-division rhyme).

It turns out, however, that Middle Chinese *kāikǒu* words descended from WEN 文 group words with dental initials are not as rare as Li implies. (They are rare in the parallel WEI 微 group.<sup>18</sup>) In third-division rhymes, a number of contrasting syllables can be found. For example, we have the two WEN 文-group words 晨 **džjĕn** and 順 **džjuĕn**, both commonly-occurring words. To explain this contrast, Li again employs \*-i- for its ‘blocking’ ability, reconstructing medial \*-ji- for the first word and \*-j- for the second:

晨 \*djiən > džjĕn

順 \*djənh > džjuĕn

Li (1971 [2001]:50) justifies these reconstructions by noting the parallel to his use of \*-ji- to block labiodentalization in labial-initial syllables.

(One might well ask whether a corresponding \*-r-/\*-ri- contrast is necessary to explain the contrasting pairs of second-division *kāikǒu* and *hékǒu* reflexes. Oddly enough, the WEN 文 group has no second-division words with dental initials, and the WEI 微 group contains only a handful, all *rù*-tone words, and all *hékǒu*, such as 聃 **twǎt**. Li does not list any of these words among those he reconstructs. The option of employing \*-i- to block rounding is of course not available for explaining contrasts found in first-division words, and Li therefore labels as irregular the *kāikǒu* words such as 吞 **\*thən** > **thən**.)

### 3. REVISIONS TO LI'S SYSTEM INVOLVING THE \*V/\*IV CONTRAST

#### 3.1 Revisions by Ting and Gong

The problems and contradictions involved with Li's reconstruction of \*-iV- in its secondary effects, which I have outlined above, have been noted by other scholars.

It was the conflict between rhyme splits and the development of \*g- and \*g<sup>w</sup>- which motivated Ting (1977-78) to revise Li's system by reconstructing initials \*ɣ- and \*ɣ<sup>w</sup>- at the Old Chinese level in addition to \*g- and \*g<sup>w</sup>-. Ting (1977-78:173-175) lists several cases where the need to reconstruct \*-j- or

\*-ji- to account for a rhyme split prevents the use of the \*-j-/\*-ji- contrast to explain the development of g- and j-.

For example, Ting (1977-78:175) lists the following four characters in the OC WEN 文 group as reconstructed by Li:

群 \*g<sup>w</sup>jiən > gjwən

雲 \*g<sup>w</sup>jən > juən

窘 \*gjiən > gjwěŋ

隕 \*gjən > jwěŋ

Normally in Li's system the \*-j- / \*-ji- distinction in the WEN 文 group is used to condition the rhyme split, but here it is used to explain the development of the initial, leaving the rhyme split unaccounted for.

Ting's revision, for which he found independent evidence in early layer Min dialect pronunciations, eliminates the \*V/\*iV contrast of the type labeled (5) above.

Li's use of the \*-j-/\*-ji- contrast to account for some *chóngniǔ* splits has also been revised, by Gong (1994), following a proposal first made by Pulleyblank (1962). Pulleyblank noticed that when velars and labials in third division alternate with l- in phonetic series, they are invariably *chóngniǔ* third-division rather than *chóngniǔ* fourth-division words. The following examples illustrate the point (1962:110):

<u>chóngniǔ third-division word</u>	<u>l-initial word in same phonetic series</u>
變 pjän	繚 luân
筆 pjět	律 ljuět
泣 khjəp	立 ljəp
品 phjəm	臨 ljəm

He also noticed the tendency for lower *fǎnqiè* spellers of *chóngniǔ* third-division words to correlate with lower *fǎnqiè* spellers of words with retroflex initials. Both these facts suggested that medial \*-r- was at least one source of *chóngniǔ* third-division words. Gong supplemented Pulleyblank's proposal by providing ample evidence in the form of Tibetan and Burmese cognates of *chóngniǔ* third-division words which contain medial or initial *r*. Therefore Gong reconstructs \*Crj- > Cj- (*chóngniǔ* third division), where C is a grave initial.<sup>19</sup>

In Gong 1997, the reconstruction of *\*-rj-* is extended beyond *chóngniǔ* third-division words to account for some third-division rhyme splits, again based on Tibeto-Burman evidence, thus obviating the need for Li's *\*-j-/\*-ji-* distinction in some (but not all) cases. (This change is actually of great importance for the rhyme groups with main vowel *\*i*, because Li's *\*-jV-/\*-jiV-* contrast is not available at all in such groups to account for either *chóngniǔ* or rhyme splits.)

Gong (1990:9) presents six cognate sets where Chinese words which Li reconstructed *\*g<sup>w</sup>j-* > *jw-* correspond to Tibetan *gro-*. He therefore supposes that the Proto-Sino-Tibetan origin is *\*\*gwrj-*. Gong does not make clear whether the Old Chinese reflex contained *\*-r-* or not; he sometimes writes *\*g<sup>w</sup>j-* (just as Li does), and sometimes *\*g<sup>w</sup>rj-*, at the Old Chinese level. Either reconstruction works in terms of explaining the correspondences, but if we suppose that the Old Chinese reconstruction was in fact *\*g<sup>w</sup>rj-*, then this would allow Li's *\*-j-/\*-ji-* opposition to be replaced with an *\*-rj-/\*-j-* opposition, giving:

*\*g<sup>w</sup>rj-* > *jw-* (third division only)

*\*g<sup>w</sup>j-* > *gjw-* (third division only)

Gong himself did not suggest this. We could view this suggestion as a supplement to Ting's revision described above.

### 3.2 A Note on Labiodentalization

I noted above that there is some dispute over whether an Old Chinese reconstruction should account for the conditioning factors for Middle Chinese labiodentalization. Li believed that it should, and accordingly his Old Chinese reconstruction was meant to provide for the phonetic factors—principally allophonic rounding of labial initials—which led to labiodentalization.

In my view, the dispute over whether an Old Chinese reconstruction should account for labiodentalization is misguided when cast in terms of phonetics. It is a fact that for any particular Middle Chinese rhyme, labiodentalization either does or does not occur. This means that phonetic features inherent in the Middle Chinese rhymes condition the change. Any Old Chinese reconstruction which accounts for the development of distinct Middle Chinese rhymes therefore is able to account, in phonological terms, for labiodentalization. Li's concern was over the phonetic features leading to labiodentalization. However, an unconditioned shift in phonetic features which

did not affect phonological categories could have occurred in some rhymes any time during or after the development of Middle Chinese. Therefore, it should not be necessary to account for such features in an Old Chinese reconstruction. Li's \*-j-/\*-ji- distinction, when employed to account for the blocking of labiodentalization, can therefore be safely removed from his system.

An additional proposal for revision

I would like to suggest another revision to Li's system, which I believe is supported by external evidence, that also impacts on the \*V/\*iV contrast. I noted earlier that Li's original motivation for establishing the sound shift \*ə > \*uə / T \_\_\_ T was a lack of contrasting *kāikōu* and *hékōu* syllables in the Old Chinese WEI 微 and WEN 文 groups. I also pointed out that there were a number of exceptions, some of which could be dealt with by Li's \*-i- as a blocking element, and some of which could not. Moreover, if one accepts Baxter's (1992:446ff) argument revising the dividing line between the WEI 微 and ZHI 脂 groups (and I believe this argument to be persuasive), then the number of exceptions grows even larger. Indeed, it is perhaps fair to say that the original motivation for Li's sound shift is more or less eliminated. The situation in the WEI 微 and WEN 文 groups is thus entirely parallel to that in the GE 歌, YUAN 元, and JI 祭 groups, in which Li reconstructs contrasting \*a and \*ua vowels to account for *kāikōu* and *hékōu* distinctions after dental initials.

I therefore propose that Li's system be revised to include contrasting vowels \*ə and \*uə, reconstructed in exactly the same environment as the \*a/\*ua contrast. This eliminates the need to reconstruct \*-i- as a blocking element. It also eliminates a proposed sound shift for which there is little phonetic justification. For example, the following words can now be revised:

晨 *djən > dźjěn	revised to *djən > dźjěn
順 *djənh > dźjuěn	revised to *djuəns > dźjuěn

Is there support beyond appeals to structural symmetry and phonetic plausibility for such a revision? Such support may be found in Tibeto-Burman cognates. The following Chinese words are given in Gong's revised reconstruction of Li. (All comparisons but the first may be found in Gong 1997.) All are *hékōu* syllables reconstructed by Li with simple vowel \*ə.

<u>Chinese</u>	<u>Tibeto-Burman</u>
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水 *hljədx > <i>świ</i> ‘water’	PTB *lwi ɤ *lwəy ‘flow, stream’
鈍 *dəns > <i>duən</i> ‘dull’	WT <i>rtul</i> ‘blunt, dull, stupid’
順 *djəns > <i>dźjuěn</i> ‘obey, submissive’	WT <i>'dul</i> ‘to tame, to subdue, conquer’; <i>dul</i> ‘soft, tame, gentle, mild’
尊 *tsən > <i>tsuən</i> ‘to honour, honourable’	WT <i>btsun</i> ‘respectable, noble, honourable’
卒 *tsjət > <i>tsjuēt</i> ‘finish, die’	WT <i>sdud</i> ‘to close, conclude, finish’

Note the evidence for a rounded vowel in the cognate forms. While it is certainly possible that an earlier Proto-Sino-Tibetan rounded vowel shifted to an unrounded vowel in Old Chinese and then shifted again to a rounded vowel in Middle Chinese, it is simpler—especially in light of other arguments made above—to reconstruct a rounded vowel \**uə* in Old Chinese.

#### 4. DISTRIBUTIONAL ANOMALIES

In Li’s original reconstruction, the distribution of the combination \**-ji-* was quite skewed. Many of the functions of \**-i-* involved third-division syllables and grave initials. Accounting for *chóngniǔ* doublets, labiodentalization, and developments of \**g-* meant reconstructing a \**-j-/\*-ji-* contrast in many syllables with grave initials. After dental initials, however, the contrast is seldom found. Even in its use to condition third-division rhyme splits, this contrast is often not necessary after acute initials. (For example, the YUAN 元 group has two third-division Middle Chinese rhyme reflexes: Yuán 元 and Xiān 仙. However, all dental-initial third-division words develop into the Xiān 仙 rhyme.) Naturally, this skewed distribution of \**-ji-* leads one to question its reconstruction.

Following the revisions to Li’s system outlined above, we once again find the distribution of \**-ji-* to be skewed, though now in a different way. With the elimination of \**-ji-* from so many of its roles, its occurrence in Li’s system is quite limited. Gong 1997 reconstructs it only in the OC YUAN 元, JI 祭, ZHI 之 (*rù*-type) and ZHENG 蒸 groups, to account for third-division splits.

## 5. CONCLUSION: THE ELIMINATION OF \*-jI- ?

Each revision to Li's system which eliminated a particular set of \***V**/\***iV** contrasts has resulted in a more coherent reconstruction, which also is more consistent with various sources of evidence about Old Chinese. When looked at in the aggregate, however, it is clear that as a result of these revisions, the entire reconstruction of the contrast, in particular after medial \*-j-, must be brought into question. The structural distribution and functional load of the \*-j-/\*-ji- contrast has simply become too tenuous. When we add to this our original concerns about the phonetic plausibility of such a distinction, it seems we are left with little choice but to consider abandoning the contrast altogether.

Of the four secondary effects of the contrast in Li's original formulation, we have already eliminated its reconstruction in three of them. It is not difficult to see how this might be done for the remaining effect, that of labiodentalization blocking. It seems to me that the reason the sound laws proposed by Li to account for labiodentalization are so complex is because they attempt to account for developments at one period in history according to *phonetic* features present in an earlier period. Although the distinctions which led to contrasts between later **P**- and **F**- were present in Early Middle Chinese, and therefore should be accounted for in Old Chinese, the phonetic nature of those distinctions were not the same at the two stages of history. It therefore doesn't make sense to seek natural classes of conditioning factors for labiodentalization at the Old Chinese stage. Accounting for rhyme splits at the Old Chinese stage is sufficient; the particular vocalic factors (presumably related in some way to rounding) which ultimately conditioned labiodentalization arose after these splits had occurred. Therefore, blocking of labiodentalization is not something that needs to be accounted for by reconstructing Old Chinese medial \*i; rather, it must be accounted for by reconstruction of the phonetic features as they developed into and throughout the Middle Chinese period.

The chief impediment to eliminating the \*-j-/\*-ji- contrast is the need to account for rhyme splits in third division syllables. The \*-j-/\*-ji- contrast here is actually a special case of the more general \***V**/\***iV** contrast which accounts also for first-division/fourth-division contrasts and for second-division rhyme splits. We can view the \***V**/\***iV** contrast as fundamental to the system, conditioning rhyme splits in each division. If we simultaneously view medial \*-j- as a unique



feature of certain types of syllables (third-division, or ‘Type B’ syllables in the parlance of Pulleyblank), then we must retain the \*-**jiV**- reconstruction, despite the structural and phonetic difficulties.

Alternatively, we could look at either eliminating medial \*-**j**- from Li’s reconstruction, or at eliminating the need for rhyme splits from the reconstruction. The former would involve replacing medial \*-**j**- with some other syllabic feature, perhaps prosodic. The latter would involve splitting or subdividing the traditional Old Chinese rhyme groups, so that the source of many “rhyme splits” would in fact be distinct main vowels. Both of these alternatives have been suggested by other authors (see for example Pulleyblank 1973, 1994, Yakhontov 1960, 1968, 1970, Baxter 1992), and since the arguments for them are well known there is no need to repeat them here.

Nor is it the purpose of this paper to advocate one or another of these solutions. It is rather to point out the existence of a significant problem, and to suggest that if Li Fang-Kuei’s reconstruction is to accompany us into the new century, this is one issue that will have to be addressed.

#### NOTES

1. An earlier version of this paper was presented at the International Symposium Commemorating the Centennial Birthday of the Late Professor Li Fang-Kuei, held at the University of Washington in Seattle, August 15-17, 2002. I would like to thank Professor Ting Pang-Hsin for making helpful comments on an early draft.
2. Throughout this paper, the romanized names of Old Chinese rhyme groups (*yùnbù* 韻部) are given in CAPITALS to distinguish them from the names of Middle Chinese rhymes (*yùn* 韻).
3. English translations of Li 1971 are quoted from Li 1974-75.
4. Except where otherwise noted, Old Chinese and Middle Chinese reconstructions are given according to Li 1971, except that tone marks have been left off for clarity of presentation. Note that Li’s Middle Chinese forms are a modification of Karlgren’s Ancient Chinese.
5. All examples in this paper are taken from Li 1971 [2000] unless otherwise

noted.

6. In Karlgren's notation, *ǎ* represents "short" *a* (see Karlgren 1957:4). However, most scholars now agree that the distinction between the vowels of the Shān<sub>1</sub> 刪 and Shān<sub>2</sub> 山 rhymes was one of height. Li Fang-kuei (1971 [2001]:51-52) reinterprets Karlgren's Middle Chinese in exactly this way.

7. But only after grave initials. See below.

8. For a summary of the work of the Qīng philologists in refining the rhyme groups of Old Chinese, see Baxter 1992:139-174. Note that the chart on page 148 lists only the Tán<sub>1</sub> 談 rhyme under the TAN 談 group, while the chart on page 537 lists both Tán<sub>1</sub> 談 and Tán<sub>2</sub> 覃.

9. The treatment of the parallel *rù*-tone groups is identical.

10. In some Middle Chinese rhymes, the *chóngniǔ* doublets have their origins in a single Old Chinese rhyme group; in others, they have their origin in distinct Old Chinese rhyme groups, and in still others they originate in a combination of the two.

11. Here III-3 stands for *chóngniǔ* third-division and III-4 stands for *chóngniǔ* fourth-division.

12. When the Middle Chinese main vowel is *i*, the III-3/III-4 distinction is notated as **-ji-/-i-** rather than as **-j-/-ji-**.

13. In theory a four-way contrast is possible, but in fact it is never the case that rhymes A and B both have a *chóngniǔ* contrast. This is not an accident, as we shall see.

14. This is because the Middle Chinese Yuán 元 rhyme lacks acute-initial words. And since there are no *chóngniǔ* doublets among acute initials, there is only one set of acute-initial words in the Xiān 仙 rhyme. Li therefore simply reconstructs **\*-jan > -jǎn** after dentals, with no **\*-j-/\*-ji-** contrast.

15. All three of the listed rules are accompanied by additional exceptions, not listed here.

16. There are a number of exceptions, which Li explained as resulting from dissimilation or the irregular development of high-frequency grammatical particles. As Ting (1977-78:173) has pointed out, these explanations are not convincing in all cases.

17. This may be contrasted with the situation in dental-ending groups with main vowel *\*a*, in which Li reconstructed an *\*a/\*ua* distinction to account for the Middle Chinese *kāikǒu/hékǒu* distinction in syllables with dental initials. This is the only place where medial *\*u* appears in Li's system, aside from a few sporadic reconstructions with initial *\*g-* in these same groups.

18. Baxter (1992:446ff) argues that the traditional division by Wang Li of the WEI 微 and ZHI 脂 groups needs modification. When this is done, the reflexes of the WEI 微 group parallel those of the WEN 文 group more closely, and *kāikǒu/hékǒu* contrasts are found in the WEI 微 group as well. If this revision is to be accepted -- and I think it should be -- then even more exceptions must be dealt with.

19. Li 1976 reconstructed *\*K<sub>rj</sub>-* as one source of Middle Chinese palatals. Gong has had to revise this as well, to *\*K<sub>lj</sub>-*.

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