

## *Hui Tai Ru Yu* and Its Related Matters

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### **Abstract**

This paper deals chiefly with the phonological phenomenon “*Hui Tai Ru Yu*” (灰泰入虞) in modern Chinese dialects, which means *hui* 灰 and *tai* 泰 rhymes convergence into *yu* 虞 rhyme in terms of Middle Chinese. Firstly, the author gives a detailed description of the *Hui Tai Ru Yu* in the Jin, Tong-Tai, Gan, northern Min dialects and Yuebei and Xiangnan Tuhua respectively. Secondly, by means of a method of dialectal comparison, the paper analyzes the phonological process. Thirdly, based on the argument of the present study, the author discusses the problem that whether the *Qieyun* Division IV finals have a medial -i- or not.

### **Keywords**

*Hui Tai Ru Yu*, the process of sound change, Chinese historical phonology, modern dialects, Division IV finals of the *Qieyun*

## 1. Introduction

“*Zhi Wei Ru Yu*” 支微入虞 (hereafter ZWRY), found in most Chinese dialect, is a famous topic in the field of Chinese historical phonology and Chinese dialectology. It actually designates merger of the *hekou* ‘closed’ syllables of division III under the *zhi* 止 rhyme group including the *zhi* 支, *zhi* 脂 and *wei* 微 rhymes and the *yu* 遇 rhyme group including the *yu* 魚 and *yu* 虞 rhymes in Early Middle Chinese (hereafter MC).<sup>1</sup> Many previous studies have focused on this phenomenon from both synchronic and diachronic perspectives. A recent detailed survey and analysis can be referred to Zheng (2012).

However, ‘*Hui tai ru yu*’ 灰泰入虞 (hereafter HTRY), another related phenomenon, has not yet been paid as much attention to as ZWRY. HTRY means the 灰 and 泰 rhymes in MC merge into the 虞 rhyme. It is well known that the 灰 and 泰 rhymes in the MC *xie* 蟹 rhyme group are both division I finals. A low back [ɑ] for the 泰 rhyme and a central [ə] or [ɐ] for the 灰 rhyme are postulated as the main vowel. As division III finals, the 支, 脂, 微 and 魚, 虞 rhymes all have a palatal medial -i-. So it’s understandable that the final of these five rhymes becomes the same when they undergo some sort of sound changes after the *Qieyun* period. However, it seems unreasonable to assume the merger of the rhymes 灰, 泰 and 魚, 虞 because 灰, 泰 rhymes are historically not palatalized, not like 魚 and 虞 rhymes.

In this study, the materials of Chinese dialects will be introduced and analyzed in detail. Besides, we are not only interested in the synchronic distribution of HTRY, but the phonological nature and diachronic process of the sound change. We hold that the phonological innovation after the period of Middle Chinese matters greatly in its typological significance of accounting for some related phonological evolution in the history of ancient Chinese.

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<sup>1</sup> It is traditionally called 支微入魚 but not ZWRY. But the paper holds that the latter term is more desirable because the *kaikou* ‘open’ reading of MC 魚 rhyme as colloquial layer is common in southern Chinese dialects. Thus, it is impossible for the merger of 支, 微 and 魚 rhymes. By contrast, 虞 rhyme is almost pronounced as *hekou* final in Chinese dialects.

## 2. HTRY in modern Chinese dialects

Based on our observations, ZWRY is in wide existence in Chinese dialects, including Wu, Old Xiang, Hui, Tong-Tai,<sup>2</sup> Kejia, Gan, Min, Jin and some Mandarin dialects<sup>3</sup> (see Zheng 2013: 144). By contrast, the geographic distribution of HTRY is a little narrower, although it can not only be found in the northern but southern Chinese dialects, including Jin, Tong-Tai, Gan, Hui, Min dialects and Yuebei Tuhua 粵北土話 (aboriginal in northern Guangdong) and Xiangnan Tuhua 湘南土話 (aboriginal in southern Hunan). In the following discussion, we will call 灰 rhyme ‘GRAY’ and 泰 rhyme ‘SAFE’ and abbreviate them as ‘G’ and ‘S’ if necessary. Following usual practice, we will use the level tone rhymes G to refer to his respective counterpart in rising and departing tones. By the way, note that there is only departing tone in the syllables of S rhyme. If the colloquial/literary stratum distinction exists, we will separate them with stripe.

### 2.1. Jin

According to Pan (1993), the *hekou* characters of MC 灰 and 泰 rhymes have the same final reflex as those of MC 魚 and 虞 rhymes in the Qingxu dialect, which is classified as a Jin dialect. See the related example as follows:

灰 rhyme: 罪 tɕy<sup>5</sup>/tsuai<sup>5</sup>, 盞 k<sup>h</sup>y<sup>1</sup>, 瑰 ky<sup>5</sup>  
 泰 rhyme: 劊 ky<sup>5</sup>

### 2.2. Tong-Tai

Eastern Mandarin, also referred to Jiang-Huai dialects, includes the dialects spoken in central Anhui and Jiangsu north of the Yangzi, as well as in the region of Nanjing and Zhenjiang. In addition, Huang-Xiao dialects in Hubei is aslo regarded as one of the varieties of Jiang-Huai dialects. ZWRY can be found in both Tong-Tai and Huang-Xiao dialects, but we find HTRY is only visible in the Tong-Tai dialects. Examples in some Tong-Tai dialects are listed as follows.<sup>4</sup>

<sup>2</sup> Geographically speaking, eastern Mandarin in Jiangsu is mainly referred to dialects distributed in the cities of Nantong and Taizhou, hence the usage of Tong-Tai dialect as an alternative term is more common.

<sup>3</sup> It is referred to southwestern Mandarin and northern Mandarin.

<sup>4</sup> The tone symbol of Chinese character as example is omitted if not necessary as below.

		Rugao	Haian	Dongtai	Taizhou	Jiangyan
G	堆 heap	ty/ tuei	tɕy	ty/ tuei	ty/ tuəi	ty/ tuəi
G	雷 thunder	ly/ luei	ny/ nuei	ny	ny/ nuei	ny
G	內 inside	ny/ nuei	nuei	ny	nuəi	ny/ nuəi
G	崔 surname	tɕ <sup>h</sup> y	tɕ <sup>h</sup> y	tɕ <sup>h</sup> y/ tɕ <sup>h</sup> yei	tɕ <sup>h</sup> y/ ts <sup>h</sup> uəi	tɕ <sup>h</sup> y/ ts <sup>h</sup> uəi
S	兌 exchange	ty/ tuei	ty/ tuei	t <sup>h</sup> y/ tɕy	ty/ tuəi	ty/ tuəi
S	最 most	tsuei	tsuei	tɕy/ tɕyei	tsuəi	tɕy/ tɕyəi

### 2.3. Hui

The Hui dialect spoken in the south of the Yangzi in Anhui province shares some phonological features with the Gan and Wu dialects. We find that unlike ZWRY which is very common in those Hui dialects, HTRY only exists in the Yixian dialect. For comparison, we exemplify the characters of 灰 and 魚, 虞 rhymes as follows:

灰 rhyme: 瑰 tɕyei<sup>5</sup>

魚 and 虞 rhymes: 鋸句 tɕyei<sup>5</sup>

### 2.4. Gan

It's well known that the Gan and Kejia dialects share a number of similar phonological features. Hence the two dialect groups are traditionally put together and called the Ke-Gan dialect in the literatures of Chinese dialects. ZWRY exists in both the Kejia and Gan dialect but HTRY can only be found in the latter. See the examples in the Lichuan dialect (Yan 1993):

灰 rhyme: 雷 ly<sup>2</sup>, 播 ly<sup>2</sup>, 推 t<sup>h</sup>y<sup>1</sup>, 堆 ty<sup>1</sup>, 內 ny<sup>6</sup>

泰 rhyme: 兌 t<sup>h</sup>y<sup>4</sup>, 最 tɕy<sup>5</sup>

It's worth noting that the final reflex [y] of the characters 推 and 內 exists in the literary layer of the Lichuan dialect. The same sound change can be found in the Nancheng dialect, i.e. 罪 tɕy<sup>5</sup>, 隊對 ty<sup>5</sup> and 最 tɕy<sup>5</sup> (Qiu 2001: 347-348).

### 2.5. Northern Min

In Min dialects, ZWRY can also be found, but it varies in the amount of lexical items and MC phonological categories involved with the sound change in different

subgroups of Min dialects. For example, as represented by Xiamen, Quanzhou, Chaozhou, Jinjiang etc., only 龜 [ku<sup>1</sup>] merges into 虞 rhyme in the southern Min. In the central Min, as represented by Shaxian, the final of the character 葵 is [y] (Li 2001: 282). Similarly, in the eastern Min, the final [y] only occur in a few characters from MC 支 and 脂 rhymes, e.g. 嘴 ts<sup>h</sup>y<sup>5</sup> and 赫 tsy<sup>3</sup> in Fuzhou, 吹炊 t<sup>h</sup>y<sup>1</sup> and 赫 t<sup>h</sup>y<sup>3</sup> in Shouning (Xietan) and 穗 θy<sup>5</sup> in Zherong (Fuxi) (Peking Univeristy 2003, Hiroyuki 2010). In a word, the distribution of ZWRY is obviously sporadic in eastern, southern and central Min dialects. However, ZWRY is quite common in the northern Min.

By contrast, HTRY can be exclusively found in the subgroup of Min in quite a small number of characters, for example, the character 背 of 灰 rhyme is pronounced [py<sup>6</sup>] in the Songxi dialect (Hiroyuki 1993).

## 2.6. Yuebei and Xiangnan Tuhua

Yuebei Tuhua (hereafter YBTH)<sup>5</sup> spoken in northern Guangdong and Xiangnan Tuhua (hereafter XNTH) spoken in southern Huangnan are dialects of unclear affinity. These two groups dialects is geographically adjacent to each other. As for YBTH, according to Zhuang's (2004) study from a perspective of phonological evolution, it is divided into three subgroups, Xiongzhou 雄州, Lianzhou 連州 and Shaozhou 韶州 groups. There are five towns where the *hekou* G and S syllables are pronounced final [y] among YBTH. They are Meicun, Changlai, Huangpu, Guitang and Xingzi (Zhuang 2004: 89). The same phenomenon is also found in some dialects belonging to Lianzhou Tuhua and XNTH. See some examples listed as follows. Dialectal data are quoted from Chang (2000: 66), Chang (2004: 73) and Shen (2001: 66).

		Changlai	Huangpu	Guitang	Xingzi	Chishi
G	堆 heap	ty	ty	tu	ty	—
G	腿 leg	t <sup>h</sup> y	t <sup>h</sup> y	t <sup>h</sup> u	t <sup>h</sup> y	—
G	雷 thunder	ly	ly	ly	ly	—
G	内 inside	ly	nɔi	ny	ny	—
G	罪 crime	t <sup>h</sup> y	t <sup>h</sup> y	—	ts <sup>h</sup> y	tɕ <sup>h</sup> y/ tsuei

<sup>5</sup> It is also called Shaozhou Tuhua 韶州土話 in *Chinese Languages Atlas* 中國語言地圖集 published in the end of 1980.

### 3. The historical process of HTRY

Historically, no ZWRY or HTRY existed in the phonology of the Middle Chinese rhyming standard, namely the *Qieyun* of 601, or any earlier rhyme dictionary and other document. Thus, the two kinds of sound changes should be regarded as a later phonological innovation in various Chinese dialects. Furthermore, the discussion above shows that the distribution of ZWRY and HTRY are both supradialectal. The nature of HTRY can be better understood if we relate this change to ZWRY. Besides Luo's (1933) excellent work on the materials of Tibetan transcription of northwest Chinese dialect in Tang and Five Dynasties period, many predecessors' enlightening studies mentioned the process of ZWRY. Among them, at least four hypotheses have been proposed:

- a. \*wi → \*ju (Chang 1992: 257);
- b. \*uei → ui → y (Chang 1993: 166; Ting 2003: 26; Wang 2006: 80);
- c. \*iuei → ui → y (Wang 2010);
- d. \*jwji → jwi (Wang 2011: 646).

It's well acknowledged that the phonetic value of the 虞 rhyme in modern Chinese dialects and various Sino-Xenic documents including Go-on, Sino-Korean, Kan-on, Sino-Vietnamese can't be [ui] anyway, so the merger of 虞 rhyme and *hekou* 止 (including the MC 支, 脂, 微 rhymes) and 蟹 (including the MC 祭, 齊 rhymes) rhyme groups can only be realized as the stage of [iu] or [y]. Thus, these two classes of rhymes undergo the sound change as follows: (Zheng 2013: 139)

- 止 and 蟹 rhyme groups: \*iuei → iui → iu > y (i.e. the loss of ending -i)  
 虞 rhyme: \*iu → y

In Baxter's (1992: 65) notation, division I finals can be identified by the presence of one of the back vowel -a, -o, or -u as main vowels, without a preceding -i- or -y-. So it's different from ZWRY to HTRY as the historical source of sound change, though the target is certainly both [y]. Now the question is how the *hekou* 灰 and 泰 rhymes become [y] from earlier [uei] or [ui]? To answer it exactly, we compare the phonological evolution of these two sound classes in different dialects. See the related lexical items of the MC rhymes in Chinese dialects as follows.

		Qingxu	Wenxi	Nantong	Dongtai	Jiangyan	Lichuan
堆	G	tɕy	tyei	te	tɕy/ tuei	ty/ tuəi	ty
灰	G	xuai	xyei	xue	xuei	xuəi	foi
雷	G	luai	lyei	le	ny	ny	ly/ lɛu
最	S	tɕy	tsuei	tɕye	tɕy/ tɕyei	tɕy/ tɕyəi	tɕy

Taking the character 最 as an example, we would find at least five different final reflexes, i.e. -y, -uei, or -ye as the colloquial layer in Qingxu, Lichuan and Dongtai, and -yei and -yəi as the literary layer in Dongtai and Jiangyan. Thus, it shows that the process of sound change should be realized as follows:

$$*uei \rightarrow yei \rightarrow yi \rightarrow y$$

In detail, the initiate stage can be [uei] or a similar reflex [ui]. Influenced by the front feature of vowel [e], the tongue position could probably be moved forward. The reflex [yei] or [yəi] could be regarded as an intermediate stage. The merger of 灰, 泰 and 虞 would be realized when the former has involved into [y]. Why don't we propose an assumption of  $*uei \rightarrow *ui \rightarrow y$  as the sound process? If this really happened, it would be more economic and convenient than the above-mentioned process. There are at least two major reasons to abandoning this assumption: (1) typologically, the process  $*uei \rightarrow *ui \rightarrow y$  is less common than  $*uei \rightarrow yei \rightarrow yi \rightarrow y$ , the latter has been observed in light of dialectal comparison; (2) historically, the latter could be backed up by the process of  $*ue \rightarrow uie \rightarrow ye$  as revealed from the vowel development of division IV finals from Early Middle Chinese to Late Middle Chinese (see the discussion as below).

#### 4. The issue of -i- medial of the *Qieyun* division IV from a HTRY perspective

The division IV finals are those exclusively in division IV of the rhyme table. Whether the *Qieyun* division IV finals<sup>6</sup> have a medial -i- or not is a long-standing puzzle that has been debated for almost a century since Karlgren published his monumental works entitled *Etudes sur la Phonologie Chinoise* from 1915 to 1926. As far as the topic is concerned, two opposite viewpoints can be summarized. One school

<sup>6</sup> Some scholars also call them “pure division IV finals” 純四等韻 to distinguish them from the division IV *Chongniu* finals, which are actually a subtype of the division III finals.

insists that there is no medial -i- in the syllables of the *Qieyun* division IV, i.e. Zhiwei Lu, Rong Li, Pulleyblank E. G., Rongfen Shao, Shangfang Zhengzhang, Wuyun Pan, etc. The other linguists such as Karlgren B., Yuen-ren Chao, Li Wang, Fang-kuei Li, Fa-kao Chou, Tung-ho Tung, Pang-hsin Ting, Guanghe Liu, Zhiping Yuchi and so on, however, hold that the presence of a medial -i- in the MC division IV syllables can only account for the related phenomena. In a recent study, Professor Ting (2006) examines the problem from four perspectives as follows: (1) phonological evolution of the *hekou* division IV syllables; (2) readings of the division IV *chongniu* 重紐 characters in Sino-Vietnamese; (3) transliterations of division IV characters in Buddhist canons translated from Sanskrit; (4) tendency of the rhyming behaviors of division IV characters in the Wei-Jin and Northern and Southern dynasties. Finally Ting (2006) concludes that the *Qieyun* division IV finals do have a medial -i-. The four evidences which Professor Ting mentioned can be classified into two types. The evidences (1) and (4) are internal materials in the history of Chinese itself, while (2) and (3) are external.

Let us firstly come to the evidences (2) and (4). As Ting (2006) points out, the MC division IV *Chongniu* syllables with labial initials (i.e. MC 幫, 滂, 並, 明 initials) show up in Sino-Vietnamese as dentals [t t<sup>h</sup> z] respectively.<sup>7</sup> And so do the pure division IV syllables. The lexical items as examples include 並 *tin*h, 酪茗 *zan*h, 霹 *t<sup>h</sup>*it, 藪 *ti*, 劈 *tich*, 僻癖 *tich* (Ting 2006: 4). This evidence seems to favor interpreting the medial -i- exists both in the division IV and division IV *Chongniu* syllables. However, it's widely acknowledged that Sino-Vietnamese represents the phonological system of Late Middle Chinese at the time of Middle and Late Tang Dynasty. By contrast, the *Qieyun* is a representative work of Early Middle Chinese. Thus, a mismatch between the argument and proof is inadvisable. From a *fanqie* 反切 spelling point of view, the divisions I and IV finals form a natural distributional form in Early Middle Chinese. Note also that the division IV finals occur with exactly the same set of initial as the division I finals, which show neither palatalization nor retroflexion. It is clearly that division I is a MC sound class without -i- medial. As for the quality of vowels, the difference between division I and division IV finals is that the former have back vowels, while the latter have the front high vowel [e] in Early Middle Chinese. By Late

<sup>7</sup> The consonant written d- in Vietnamese is now pronounced [z] or [j], depending on dialect. See Baxter (1992: 283).

Middle Chinese, it is likely that a sound change had introduced a front glide [i] before the vowel [e] in division IV finals and the merger of divisions III and IV finals has happened because of the presence of -i- medial in these two types of syllables.

The fourth evidence is the rhyming behaviors around the time of the *Qieyun*. Ting (2006) find that rhyming tendency between the division III and IV syllables is quite common. Since there is undoubtedly presence of a medial -i- in the *Qieyun* division III syllables, so do the division IV syllables. Likewise, it's problematic. The rhyming tradition as reflected in ancient Chinese poetry tells us the characters with the same nucleus and ending can rhyme each other regardless of the presence or absence of medial. For example, rhyming practice between the final -ien and -en, or -iue and -e is actually accepted. Hence we can't deny the possibility of absence of medial -i- for the *Qieyun* division IV syllables according to rhyming tendency. As for the evidence from Buddhist canons translated from Sanskrit, we need review the related materials cautiously and all-sidedly. Using the MC 齊 rhyme as an example, we can find the presence of the finals -i, -ai and -e in the Buddhist canons. It's difficult for linguists to reconstruct the phonetic value of the MC 齊 rhyme if they exclusively refer to the materials exemplified above. Therefore, as a kind of indirect evidence, the phonetic information from Buddhist canons translated from Sanskrit is certainly an important reference to the study of Chinese historical phonology but not a decisive one.

In a word, the above-mentioned evidences are probably not sufficient to reconstruct an -i- medial for the MC division IV finals. The remaining evidences focus on the evolution of *hekou* division IV finals. The *kai/he* distinction is referred to the presence of absence of a rounded -u- medial in the syllable. In the *Qieyun*, this distinction exists in five division IV finals. They are 齊, 先, 青, 屑, 錫 rhymes. Following Li's (1956) reconstruction, the finals of these five MC rhymes can be represented as follows:

	齊	先	屑	青	錫
<i>kaikou</i>	-ei	-en	-et	-eŋ	-ek
<i>hekou</i>	-uei	-uen	-uet	-ueŋ	-uek

Taking the 先 rhyme as an example, we note that division IV finals undergoes a different sound change from MC to modern Mandarin (Beijing), i.e. \*uen > ien 賢

顯 ; uen>yen 玄淵 . If we follow Li's (1956) assumption on the phonetic value of MC division IV, we can't explain how MC -u- medial becomes -y- at the present day. At a contrast, Karlgren's reconstruction is listed as follows:

	齊	先	屑	青	錫
<i>kaikou</i>	-iei	-ien	-iet	-ieŋ	-iek
<i>hekou</i>	-iuei	-iuen	-iuet	-iuenŋ	-iuek

It's easy to understand a medial change of *iu>y*. The final reflex of some division IV characters like 圭桂 is -uei, which undergoes a loss of -i- medial. It can be explained by the dissimilation between -i- medial and -i- ending (Ting 2006: 2). Thus, Professor Ting argues that it's more reasonable to assume the presence of -i- medial for MC division IV finals. However, the presence of -i- medial fails to explain some other related phenomena. We can find the absence of -i- medial for some *hekou* division IV characters in Mandarin. For instance, the final reflex of the characters 玄, 犬 is -uan in Wuhan, 決, 穴 is -ue in Shuangfeng and -uek in Chaozhou. Obviously, we can't explain the final reflexes of those syllables above as the dissimilation between medial and ending, because 玄, 犬 have nasal ending -n in Wuhan and 決, 穴 have stop ending -k in Chaozhou, but not -i ending as 桂圭 in Beijing.<sup>8</sup> So it's not improper to abandon the reconstruction of -i- medial for the MC *kaikou/hekou* division IV finals, namely the final class all has the main vowel [e], but not -ie- or -ye.

In our view, the above-mentioned HTRY shows that it is likely a sound change had introduced a front rounded [y] from back rounded [u] before the vowel in the *hekou* division IV finals:

u→y/C\_\_eE (C represents consonant initials; E represents endings -n, -t and -i, etc.)

As a result, the earlier *hekou* 灰 rhyme final reflex -uei becomes -yei in some dialects, and then becomes monophthone -y in the dialects where HTRY happened. Enlightened by the phonological process of HTRY, we could rethink about the possibility of vowel

<sup>8</sup> There is a more detailed discussion in Ma (2011: 42).

change ue>ye which undergoes in the *hekou* syllables of MC division IV finals. If we acknowledge the argument that a sound change had introduced a front glide before the vowel -e- in division IV finals by Late Middle Chinese:  $\emptyset \rightarrow i/C\_e$  (Baxter 1992: 66), we can propose the intermediate stage of the sound change ue>ye is [uie], i.e. ue→uie→ye. That's to say, influenced by the following [i] with the front feature, [u] becomes [y]. Thus, we needn't hypothesize that the division IV finals all have a medial -i- or -y- plus a main vowel [e] in Early Middle Chinese. Besides, from a condition of sound change point of view, the various endings of division IV finals (i. e. -i, -n, -t, etc.) have little influence on the development of *hekou* division IV finals.

## 5. Conclusion

Chinese linguists have been quite familiar with the phenomenon ZWRY in synchronic and diachronic Chinese materials, however, not with HTRY. Based on the detailed description of geographical distribution of the sound change above, it's quite obvious that HTRY is the result of independent phonological innovation. By means of dialectal comparison, we could reconstruct the process of the change as \*uei→yei→yi→y.

Another interesting topic discussed above is the presence or absence of medial -i- for division IV finals in Early Middle Chinese. By employing the MC 齊 rhyme as an example at the time of the *Qieyun*, the present paper assumes that the final reflex of division IV is *kaikou* -e or *hekou* -ue, but not -ie or -iue. On the one hand, there exists a parallelism between HTRY and the change of [ue]>[ye] of *hekou* division IV finals. On the other hand, the latter has provided worthwhile phonetic information, with which the continuous process “ue→uie→ye” can be reconstructed for the former.

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## “灰泰入虞”及其相關問題

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### 提要

本文主要討論漢語方言裏的“灰泰入虞”，即中古一等灰韻、泰韻合口字與三等虞、魚韻字的音類合併現象。這種現象見於晉語、江淮官話通泰片、贛語、徽語、閩北方言和粵北、湘南土話等，文章對此作了詳細的分析。此外，還討論了該音變的性質，以及怎樣解釋《切韻》合口純四等韻是否具有 -i- 介音及其後來的演變等問題。

### 關鍵詞

灰泰入虞，地理分佈，音韻史，現代方言，《切韻》四等韻