

# The Phonetic Values of Divisions III and IV in the Menggu Ziyun\*

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## ABSTRACT

The Menggu Ziyun (MGZY) of the 13th century is one of the most important sources for the reconstruction of Yuan phonology. Because of the phonetic nature of the hP'ags-pa spellings, this rhyme book provides not only categorical information, but also the invaluable phonetic values of the phonological system. In the MGZY the contrast between MC divisions III and IV is preserved. In rhymes Xian, Xiao and Tan, the valuable phonetic characteristics of these two divisions are consistently represented by two hP'ags-pa letters ◀ and ≡.

However, because of the phonetic values of these two letters have long been controversial among the hP'ags-pa scholars, the phonetic distinction between divisions III and IV in the MGZY cannot be firmly established. In order to determine the phonetic values of divisions III and IV in the MGZY, this article draws evidence from a variety of relevant materials, which include the MGZY, the Mongolian documents written in the hP'ags-pa script, the Tibetan dialects, and the Wu dialects of Chinese. The result shows that hP'ags-pa letter ◀ must represent a higher vowel than letter ≡. Letter ≡ actually is an umlaut sign. Itself does not represent any certain vowel.

Based on the phonetic values of these two letters, it can be established that in the phonological system represented by the MGZY, division IV had a lower main vowel [ɛ] than division III, and the main vowel of division III could be a relatively high mid vowel [e]. This conclusion is in agreement with the evidence from some of the modern Wu dialects, which still keep the distinction of MC divisions III and IV.

**Key Words:** Yuan Phonology, hP'ags-pa Script, Divisions III and IV,  
Menggu Ziyun

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## 0. Introduction

The Menggu Ziyun 蒙古字韻<sup>1</sup> (MGZY hereafter), compiled in the second half of the 13th century, is unquestionably one of the most important sources for the reconstruction of Yuan phonology. Unlike other rhyme books, this rhyme book has a hP'ags-pa spelling for every homophonic group. The hP'ags-pa spellings used in the MGZY can be considered the first alphabetical system proposed in the history of the Chinese language. It appeared at least three hundred years earlier than the romanization introduced by various Christian missionaries during the 16th and 17th centuries. Because of the phonetic nature of the hP'ags-pa script, this rhyme book provides not only categorical information, but also the invaluable phonetic values of the phonological system, which we usually only can assess through reconstruction. Therefore, the MGZY bears extreme importance in the study of Yuan phonology.

One of the exciting facts of the MGZY is that in the MGZY the phonological contrast between MC divisions III and IV is preserved. In several rhymes, the phonetic characteristics of these two divisions are consistently represented by two hP'ags-pa vowel letters. If the phonetic values of these two letters can be determined, they actually can reveal the phonetic values of MC divisions III and IV in the 13th century, and, furthermore, can better our understanding of these two ancient categories in general.

### 1. The contrast between divisions III and IV in the MGZY

In the rhyme table tradition of Late Tang and Early Song times, all the finals can be arranged into four divisions according to their phonological features. The exact phonetic values which distinguish these four groups of finals have been the focus of Chinese phonologists' interest for almost a century. It is known that the distinction between divisions III and IV was totally lost in the *Zhongyuan Yinyun*, a famous Yuan rhyme book compiled in 1324. In the MGZY, the distinction between the four divisions is still preserved in several rhyme groups. This distinction is systematically shown in the syllables with guttural

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Junast, Yang Nai-si, and Zhang Ji-chuan. Of course, I am fully responsible for all the discussions and conclusions made in this article.

1. I have used all available published versions of MGZY: Junast and Yang, 蒙古字韻校本, Tsuboi Yoshimasa (ed.) *The Old Manuscript in Facsimile of the Menggu Ziyun of the British Museum*, as well as the reproduction in Luo and Cai, 八思巴字與元代漢語.

initials in four rhyme groups: the Han rhyme 寒韻, the Xian rhyme 先韻,<sup>2</sup> the Xiao rhyme 蕭韻, and the Tan rhyme 覃韻.

<i>Rhyme</i>	<i>Ending</i>	<i>I</i>	<i>II</i>	<i>III</i>	<i>IV</i>
Han	-n	干	間		
Xian	-n			鞮	堅
Xiao	-w	高	交	驕	驍
Tan	-m	甘	緘	檢	兼

The syllables which represent the four divisions are distinctively spelled in the hP'ags-pa alphabet. Since the main vowels in different rhymes are consistently spelled, the syllables from the Xiao rhyme are used for the purpose of illustration.

MC division	I	II	III	IV
Example	高	交	驕	驍
hP'ags-pa spelling	ᠬᠠ	ᠵᠠ	ᠵᠠᠷᠠ	ᠵᠠᠯᠠ

The phonetic values of divisions I and II are /ka/ and /kja/ respectively, which are basically not controversial among hP'ags-pa scholars. The phonetic values of divisions III and IV are more difficult to interpret. Of course, the key to this problem is what the phonetic values of these two letters are. If the phonetic value of these two letters can be determined, the phonetic values of divisions III and IV can be determined as well.

Some might think that the values of these two letters in question can be easily figured out by referring to the existing reconstructions of MC divisions III and IV. Such an approach is very tempting, but it is actually a circular argument. We do not know the phonetic values of MC divisions III and IV for sure. To use the reconstructed values to determine the value of hP'ags-pa letters will be a total waste of the valuable phonetic information contained in the hP'ags-pa spellings. In this paper efforts are made to avoid using existing constructions.

### 1.1. The phonetic value of letters e1 and e2.

Before we start analyzing the phonetic value of the two letters in question,

2. In MGZY the Han and Xian rhymes are separately listed. The traditional divisions I and II syllables are listed in the Han rhyme and the divisions III and IV syllables are listed in the Xian rhyme. However, in the Xiao and the Tan rhymes the syllables of all four traditional divisions are listed together. The homophonous groups (regardless of tones) are represented by the first Chinese characters listed, except the group represented by 鞮, since the first character is a rare one.

it is necessary to have a brief overview of all the hP'ags-pa letters for non-consonant sounds, namely, vowels and medials. The graphic similarities between the hP'ags-pa alphabet and the Tibetan alphabet clearly indicate that when Lama hP'ags-pa invented his new alphabet in the 13th century, he referred to the Tibetan alphabet which he was familiar with. Therefore, most of hP'ags-pa letters bear clear graphic similarities with their corresponding Tibetan letters. The seven hP'ags-pa letters are listed below according to their original order as seen in the *Fa Shu Kao* 法書考 by Sheng Xi-ming 盛熙明 of the Yuan dynasty and the *Shu Hui Ju Yao* 書會舉要 by Tao Zong-yi 陶宗儀 dated 1376.<sup>3</sup> The corresponding Tibetan letters and their phonetic values are listed below also.

hP'ags-pa letters	( )	ㄅ	ㄆ	ㄇ	ㄏ	ㄏ	ㄏ	ㄏ
Phonetic values	a	i	u	(e1)	o	(e2)	j	w
Tibetan letters	( )	ཨ	ཨ	ཨ	ཨ		ཨ	ཨ
Phonetic value	a	i	u	e	o		j	w

In the inventory of the hP'ags-pa alphabet for transcribing Chinese documents, seven letters and a zero form were used exclusively for transcribing vowels and medials. As with the usual conventions of Indian alphabets as well as the Tibetan alphabet, the inherent **a** after an initial consonant was not separately expressed; a syllable with a consonant plus an **a** appeared graphically as a consonant. This is also the convention of the hP'ags-pa alphabet. Of the other seven hP'ags-pa letters, six of them are clearly based on the corresponding Tibetan letters. The letters for the two high vowels **i** and **u** closely mimic their Tibetan counterparts graphically. The letters for the two mid vowels **e** and **o** are also based on their Tibetan prototypes, but have very different appearances. For some unknown reasons, these two hP'ags-pa letters were designed based on the upside down images of their Tibetan prototypes. Because of this unusual design, these two upside-down letters confused some hP'ags-pa scholars.<sup>4</sup> But their alphabetical order clearly indicates that they are based on the Tibetan letters for the vowels *e* and *o*. The last two letters are used to represent medials (onglides) only. They are never used to represent offglides with a similar phonetic quality. These two medial letters are also clearly based on their corresponding Tibetan

3. The reproduction of these two texts can be found in N. Poppe 1957:9-14. These two texts are similar but not identical. As far as the order of these seven non-consonantal letters are concerned, there is no difference.
4. Junast (1988) discussed the graphic shape of hP'ags-pa letter e1 and conclude that this letter is based on the Tibetan letter for vowel i. Here, I disagree with his view because there is no reason why two hP'ags-pa letters were based on one Tibetan letter, and the Tibetan letter for its vowel e was not adopted in the hP'ags-pa alphabet.

letters in their subscript forms. The puzzle is the letter listed between the vowel letters and the medial letters. This letter does not have its corresponding prototype in the Tibetan alphabet and is listed after two medial letters. From its order it is difficult to tell whether it represents a vowel, a medial, or something else.

The value to be ascribed to this letter has been a problem for all those who have studied the hP'ags-pa alphabet. After more than one and a half centuries of study, it still cannot be said yet that this problem has been satisfactorily resolved. For convenience, the letter which has its Tibetan prototype for the vowel *e* will be referred to as *e*1 and the letter which does not have a prototype will be referred to as *e*2 in following discussion.

As we know, hP'ags-pa letters were also used to transcribe Mongolian documents in history. But the phonetic value of letter *e*2 is also not easy to understand if we try to get answers in the Mongolian documents written in hP'ags-pa alphabet. In the Mongolian documents, the Mongolian vowel *e* is mainly transcribed by letter *e*2. This transcription causes a problem for understanding the value of *e*1, as we know that letter *e*1 was based on the Tibetan letter for the vowel *e*. The question which is raised immediately is why in many cases the existing letter *e*1 was not adopted but a new letter *e*2 was adopted for transcribing the Mongolian vowel *e*. Therefore, because of the new letter *e*2, the phonetic value of *e*1 becomes puzzling as well.

In the study of hP'ags-pa script, the phonetic values of these two vowel letters are most controversial and often are the focus of discussion. From H.C. von der Gabelentz (1839), A. Dragunov (1930), S. Hattori (1946), L. Ligeti (1956), N.N. Poppe (1957), P.B. Denlinger (1963), E.G. Pulleyblank (1970), to Junast 照那斯圖 (1988), many attempts have been made to determine the phonetic values of these two hP'ags-pa letters. Almost all the possibilities of transcribing these two letters have been suggested. The lack of consensus among the hP'ags-pa scholars shows the difficult nature of this problem.

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
<i>e</i> 1	<b>ye</b>	<b>é</b>	<b>ε</b>	<b>e</b>	<b>e</b>	<b>è</b>	<b>y(a)</b>	<b>e</b>	<b>e</b>
<i>e</i> 2	<b>e</b>	<b>e</b>	<b>e</b>	<b>ä</b>	<b>¨</b>	<b>e</b>	<b>j(a)</b>	<b>ï(a)</b>	<b>è</b>

(a) Gabelentz, 1839; (b) Dragunov, 1930; (c) Hattori, 1946; (d) Hope, 1953; (e) Ligeti, 1956; (f) Poppe, 1957; (g) Denlinger, 1963; (h) Pulleyblank, 1970 and (i) Junast, 1988.

In many early studies, the phonetic values of the letters are often provided without further explanations. Since it is not the intention of this paper to evalu-

ate each of these proposals, in the following only those relevant to our discussion will be further discussed. All the proposals for letter e2 can be analyzed into three types: (a) a mid front vowel, e.g. Poppe (1949/1957), (b) an umlaut mark, e.g. Ligeti (1956) and (c) a medial, e.g. Pulleyblank (1970). The relative vowel heights these two letters represent are also undetermined. Some consider e1 as a higher (more closed) vowel, e.g. Poppe (1949/57), and some consider e2 as a higher vowel, e.g. Hattori (1946). In addition to the values of the letters, Pulleyblank (1970:361) further provides phonological and phonetic representations of letters e1 and e2 in the context of the Chinese phonology. He suggests that the two letters represent two different medials, which occur in front of a default main vowel **a**.

	phonetic value of the letter	Phonological representation	Phonetic representation
e1	<b>e</b>	/ia/	[iɛ]
e2	<b>ja</b>	/jia/	[jiɛ]

Pulleyblank's interpretation suggests that phonologically and phonetically e1 represents a combination of a medial and a main vowel, although the letter itself represents a simple mid front vowel. The letter e1 represents a medial, but its phonological and phonetic value should be **-ji-**. By interpreting it this way, the difference between letters e1 and e2 becomes the presence or absence of the medial **-j-**. Division IV has an additional palatal medial than division III. However, such a contrast of /ia/ and /jia/ is quite unnatural according to the language universal. It also contradicts the known evidence of division III, which is that division III should have a palatal medial. Although such a solution can be conveniently used to explain some other phonological characteristics in the MGZY,<sup>5</sup> the transcriptions of these two letters seem to contain a certain degree of arbitrariness from their face values to their phonetic and phonological representations.

More recently, two papers have been written especially to deal with the problems with these two letters (Hattori 1984, Junast 1988). After quite exhaustive researches of the relevant materials, Hattori reaches no conclusion for the

5. Pulleyblank's adoption of /jia/ for division IV is an effort to show the parallel to division II which he interpreted **-ja**. He tries to use **-j-** to explain some similar changes in divisions II and IV that appeared in MGZY. This is a very interesting idea. But it is not necessary to consider that the changes in divisions II and IV happened simultaneously instead of sequentially. If the changes happened sequentially, there is no need to assume that divisions II and IV shared some phonological element at the time of MGZY.

phonetic value of e1. Junast focused on letter e1 in Mongolian. While realizing that e1 is a higher mid front vowel in Mongolian, he concluded that the phonetic values of these two letters are different in Mongolian and in Chinese.

	Mongolian	Chinese
e1	é	e
e2	e	é

Here é represents a more closed vowel than e, according to Junast (1988)

In Mongolian, e1 is a higher vowel, but in Chinese e2 is a higher vowel. In other words, the phonetic values of these two letters are flip-flopped from Mongolian to Chinese. Of course, this conclusion raises more questions than answers and makes this issue more puzzling.

In the following, I draw evidence from the hP'ags-pa spelling in the MGZY and in the Mongolian documents to show that e1 should be interpreted as a high-mid front vowel, and e2 as a low-mid front vowel. Furthermore, I also would like to show the phonological evidence from the Tibetan dialects and the Chinese dialects to back up my analyses of these two hP'ags-pa letters based on the internal evidence of hP'ags-pa spellings. Letter e2 is an umlaut sign. In the hP'ags-pa spelling letter e2 can combine with vowel letters **u** and **o** as digraphs, and represent **y** and **ø** respectively. Since vowel **a** in the hP'ags-pa script is a default, the letter e2 itself actually should be interpreted as an umlaut symbol plus vowel **a** (¨ + **a**). When letter e2 is used by itself, it represents E. Since all of the evidence from Chinese, Mongolian and Tibetan suggests the same phonetic relationship of these two vowel letters, I would like to suggest that the phonetic values of these two hP'ags-pa letters have their universal values. In other words, letters e1 and e2 consistently represent the same phonetic value in transcribing different languages.

## 2. The internal evidence from the MGZY

In the MGZY, letter e1 is chiefly used as the main vowel of a syllable by itself as seen in the Xian, Xiao and Tan rhymes. But in the Zhi rhyme 支韻, it appears after vowels u and y. In some of the previous studies (e.g. Nakano 1971, and Junast and Yang 1987), letter e1 after main vowels u and y is transliterated as a full vowel. Thus, two main vowels can appear within a single syllable, e.g. **-ue**, **-iue** (Nakano, 1971:112-3); **-ue**, **-éue** (Junast and Yang, 1987:152). Such a rendering apparently violates the syllable structure of Yuan Chinese, which is IMVE (in traditional terms IMVE represents initial, medial, main vowel, and

ending, respectively). From a phonotactic point of view, when letter e1 is used after vowels u and y in the Zhi rhyme, letter e1 cannot be interpreted as a main vowel. Also, if letter e1 is a main vowel, these syllables should be classified into the Ma rhyme, since the syllables with the same main vowels and the same endings should be classified together. To classify the syllables spelled with **u**+e1 and **y**+e1 in the Zhi rhyme clearly indicates that e1 is not a main vowel. Since the main vowels are u and y, the syllable structure only allows letter e1 to be the offglides of diphthongs.

An analysis of the syllables in the Jia rhyme 佳韻 may also help us to understand this issue. All the syllables in the Jia rhyme are diphthongs with either **a** or **ə** as main vowels and a palatal offglide. All the offglides are represented by the hP'ags-pa letter for **j**. Based on their distribution, it is quite clear that letter e1 and the letter for palatal glide were both used to indicate the palatal offglide but appear in different phonological conditions. The former is used after vowels **u** and **y** in the Zhi rhyme and the latter is used after vowels **a** and **ə** in the Jia rhyme. This fact is quite clearly demonstrated by Cheng (1985) in his complementary study of the hP'ags-pa letters.<sup>6</sup> This distribution is shown as below.

	<i>MGZY</i>		<i>Example</i>	<i>Mandarin</i>
	<i>Jia</i>	<i>Zhi</i>		<i>(in Pinyin)</i>
<b>-aj</b>	<b>-j</b>		該	kai
<b>-əj</b>	<b>-j</b>		得	dei(de)
<b>-uj</b>		-e1	歸	gui
<b>-yj</b>		-e1	圭	gui

There is also an overlooked piece of information in the MGZY which can be used to support the analyses above. In the prefatory pages of the MGZY, there is a circular diagram called 蒙古字韻總括變化之圖 (the diagram for a complete account of changes in the MGZY). The nature of this diagram is unknown. So far, little attention has been paid to it by hP'ags-pa scholars.

It is not the intention here to solve all the problems in this diagram, but the six letters on the top half of the diagram are very much relevant here. Besides letter e1, all five other letters can occur in the ending position after a main vowel in the MGZY. They represent all the possible endings in the sound system of MGZY. To list letter e1 along with these five letters clearly indicates that letter

6. Cheng shows the distribution of these two letters in complementary distribution in detail. However, Cheng suggests two alternative solutions for e1 at the final position: (1) an ending, or (2) a combination of a vowel plus an ending (1985:71).



e1 can be used as an ending as well. Since there are only five possible endings according to the phonotactics of MGZY, e1 must be an alloform of one of these five letters. Based on the phonetic values, e1 can only be the alloform of -j, because three of them are nasal endings, and one is a bilabial ending (offglide). These six letters and their phonetic values are:

𠄎	𠄏	𠄐	𠄑	𠄒	𠄓
-m	-n	-ŋ	-w	-j	-jʹ

This conclusion can be further backed up by their pronunciations in Chinese characters as seen in *Fa Shu Kao*. In *Fa Shu Kao*, a corresponding table is given to show the pronunciation of the hP'ags-pa alphabet in Chinese characters. This table is clearly independently made, since many distinctions of the hP'ags-pa letters as reflected in Chinese characters are not distinctive in MGZY. In this table, letter e1 has Chinese character 翳 as its equivalent and the vowel letter for i has 伊 as its equivalent. In the MGZY both 翳 and 伊 are in the Zhi rhyme and spelled exactly the same in hP'ags-pa letters as **ji**. This also suggests that the intrinsic value of letter e1 is a very high front vowel.

From the evidence that has been shown above, it is logical to reason as follows: Since letter e1 can be used as an allophone of palatal glide at the ending position and its intrinsic phonetic value is close to a high vowel [i], it must have a quite high vocalization, or, in other words, a quite closed [e].

### 3. The distribution of letter e1 in the hP'ags-pa materials for Mongolian

The vowel heights of e1 and e2 that we concluded based on the Chinese materials can be further confirmed by the Mongolian documents written in the hP'ags-pa script. In the Mongolian documents, letter e2 generally represents the vowel *e*. As noted by Nicholas Poppe (1957:25), with only one exception,<sup>8</sup> letter e2 never occurs in word initial position. Only letter e1 can appear in this position.

7. According to Liu Geng's preface, this diagram was the work of Zhu, Zong-wen, the editor of this only surviving version. These six letters were written on top of the circular diagram and written upside-down. As one of the common copying mistakes made in this version of MGZY, the last letter e1 was written as 𠄓 (Ning, Ji-fu, 1997:189-92). Ning Ji-fu provides an account for these six letters. He suggests that the last letter e1 represents a zero ending. His account is problematic, because it is difficult to understand why e1 was chosen to represent the zero ending instead of other vowel letters.

8. Poppe (1949/57:25) "Only one occurrence of it in initial position has been found. Example: *eldeb* various XIII 5; ..."

When e1 appears at word initial positions in front of vowels **i**, **e** or **u** in the following syllable, it corresponds to *e* in Written Mongolian. The examples below are based on Junast's detailed study on letter e1 in the Mongolian documents (1988). The hP'ags-pa letter e1 is represented by **è** and letter e2 simply by **e**.

	<i>hP'ags-pa spelling</i>	<i>Written Mongolian</i>	<i>meaning</i>
In front of <b>i</b>	<b>éyin</b>	<i>eyin</i>	'as'
	<b>éyimu</b>	<i>eyimū</i>	'this'
	<b>éšinu'ud-un</b>	<i>éšiniügiid-ün</i>	'queen, madam'
In front of <b>e</b>	<b>èŋk<sup>h</sup>e</b>	<i>engke</i>	'peace'
	<b>èjen</b>	<i>ejen</i>	'host'
	<b>ène</b>	<i>ene</i>	'this'
In front of <b>u</b>	<b>éd<sup>t</sup>u</b>	<i>edtü</i>	'possessed'
	<b>èdu'e</b>	<i>edüge</i>	'now'
	<b>èuri</b>	<i>egüri</i>	'forever'

In the Mongolian documents written in the hP'ags-pa alphabet, letter e1 can also occur as an offglide after vowels *e*, *u* and *ü* to spell diphthongs. When it occurs in this position, it always corresponds with Written Mongolian *i*.

	<i>hP'ags-pa spelling</i>	<i>Written Mongolian</i>	<i>meaning</i>
After <b>e</b>	<b>delegeè</b>	<i>delekei</i>	'world'
	<b>ʔügeè</b>	<i>ügei</i>	'have not'
	<b>ʔölʃeè</b>	<i>ölʃei</i>	'luck'
After <b>u</b>	<b>buguè-dur</b>	<i>bügiü-dür</i>	'when'
	<b>buè</b>	<i>bui</i>	'to exist'
	<b>boluè</b>	<i>bolui</i>	'to be'
After <b>ü</b>	<b>ʔüeles</b>	<i>üiles</i>	'things'
	<b>ʔüeled<sup>t</sup>ugeè</b>	<i>üiledtügei</i>	'to do'

It is easy to recall that this usage of e1 as an offglide is very similar to that in the MGZY. It has been discussed earlier that in the MGZY letter e1 can occur after main vowels **u** and **y** to form offglides. Furthermore, this letter sometimes alternates with letter e2. Below are three examples along with their occurring frequencies.

<i>with e1</i>	<i>with e2</i>	<i>meaning</i>	<i>frequency</i>
<b>č<sup>h</sup>érig</b>	<b>č<sup>h</sup>erig</b>	'soldier'	2/30
<b>t<sup>h</sup>éri·un</b>	<b>t<sup>h</sup>eri·un</b>	'leader'	1/19
<b>géyid-dur</b>	<b>geyid-dur</b>	'inside temple'	1/17

After Poppe's study, the letter e2 is commonly transcribed as *e* in the Mongolian materials. Shown by the examples given above, letter e1 corresponds to *e* at word initial position and *i* in the offglide position in Written Mongolian. There should be no question that the phonetic value of letter e1 in Mongolian must have its value between these two front vowels. The phonetic value of letter e1 should be higher or more closed than what letter e2 represents. The Mongolian e phonetically could be a low mid vowel [ɛ]<sup>9</sup> and was more accurately transcribed by letter e2 instead of e1.

#### 4. The umlaut in Tibetan

We have suggested in the previous parts that letter e2 is basically an umlaut symbol which is used in front of back vowel letters to form digraphs. These digraphs actually represent the fronted counterparts of the back vowels. However, it is quite puzzling how Lama hP'ags-pa could so clearly realize the parallel relationship between vowels *u*, *o* and *a* and their fronted counterparts *y*, *ø* and *ɛ*, and devise letter e2 as a phonological feature to account for such a phonological relationship. As we know, there is no other hP'ags-pa letter like letter e2, which functions only as a phonological feature. To devise letter e2 is a quite ingenious invention. However, if we take a look at the sound system of modern Tibetan dialects and the sound changes which have taken place, we may not be so surprised by this invention by Lama hP'ags-pa.

As observed in the Lasha dialect of Tibetan, back vowels *u*, *o* and *a* occurring in front of alveolar consonants *n*, *l*, *d*, or *s* changed to *y*, *ø* and *ɛ* respectively. If the vowels were in front of alveolar nasal *-n*, the fronted vowels are nasalized as well. Similar changes are also observed when these vowels are followed by *hi*, which is one of the possessive suffixes. Such a change is a typical case of umlaut. Since the tones are not the focus of this discussion, they are omitted in the following examples. All the examples below are based on Jin Peng's *Zangyu Jianzhi* (1982).

	<i>Written Tibetan</i>	<i>Modern Lhasa</i>	<i>meaning</i>
a) before -d	<i>lud pa</i> <i>bzod</i>	lyʔpa søʔ	'phlegm' 'to bear'

9. There is a lack of phonetic study of Mongolian vowels. The only quasi-phonetic description is found in Chaghanhad's study of the modern Korchin dialect of Mongolian (1995). In this study the mid front vowel is written as E, and its phonetic value is transcribed as [E].

	<i>brgjad</i>	cε?	'eight'
b) before -l	<i>dɣul</i>	ɲy	'silver'
	<i>btɕol</i>	tɕφ	'to leave with'
	<i>fikhhal</i>	khe	'to spin'
c) before -s	<i>dus</i>	thy?	'hour'
	<i>tshos</i>	tshφ	'dye'
	<i>ras</i>	rε?	'cloth'
d) before -n	<i>bdun</i>	tÿ	'seven'
	<i>ston ka</i>	t̃ka	'autumn'
	<i>bstan</i>	tẽ	'to show'
e) before -hi	<i>sufhi</i>	sy	'whose'
	<i>sofhi</i>	sφ	'dental'
	<i>safhi</i>	sε	'of land'

Obviously, the result of these sound changes indicates that *y*, *φ* and *ε* are historically related to *u*, *o* and *a* respectively. Very similarly, in the hP'ags-pa script letter e2 is used in front of back vowels, **u**, **o** and **a**, to form digraphs e2+**u**, e2+**o**, and e2+**a** for fronted vowels **y**, **φ** and **ε** respectively. As we know, a common way to write the fronted vowels is to write them as *ü*, *ö* and *ä*, using '¨' to indicate the front feature of these fronted vowels. In the hP'ags-pa spelling, letter e2 has the same function as the umlaut symbol. The relationship between the sound changes shown above and the function of hP'ags-pa letter e2 is strikingly parallel.

In the modern Lhasa dialect, there are eight vowels.<sup>10</sup> In addition to the five vowels in Written Tibetan, the three vowels added are the fronted ones *y*, *φ* and *ε*. If we arrange them into a vowel chart, the relationship between the back vowels and fronted vowels becomes obvious.

<i>Written Tibetan</i> (Before change)		<i>Modern Lhasa</i> (After change)	
<i>i</i>	<i>u</i>	<i>i, y</i>	<i>u</i>
<i>e</i>	<i>o</i>	<i>e, φ</i>	<i>o</i>
		<i>ε</i>	
	<i>a</i>		<i>a.</i>

10. However, Jin (1983:9:12) has a different account of the basic vowels. He listed 17 monosyllabic finals: nine are oral vowels and eight are nasalized vowels. The extra oral vowel listed is schwa. Since this issue is irrelevant in this context, the discrepancies between these two accounts will not be discussed further in this article.

Phonologically, they may represent a simpler relationship.

<i>Before change</i>		<i>After change</i>	
<i>i</i>	<i>u</i>	<i>i, y</i>	<i>u</i>
<i>e</i>	<i>o</i>	<i>e, ø</i>	<i>o</i>
	<i>a</i>	<i>ε</i>	<i>a.</i>

Now it becomes very easy to see that the Tibetan vowel represented by Tibetan letter *e* is a higher mid vowel and the new fronted one is a lower one. As we know, most of the hP'ags-pa letters are graphically based on the corresponding Tibetan letters. It would also be natural that the phonetic values of the hP'ags-pa letters were by and large inherited from their Tibetan prototypes. Therefore, hP'ags-pa letter e1 should be a high (more closed) mid vowel.

Also, it is very striking that the vowel system of the Lhasa dialect is exactly the same as the vowel system in the hP'ags-pa script, in terms of the number and the quality of the vowels. Such a striking similarity strongly suggests that Lama hP'ags-pa as a native speaker of Tibetan might refer to a similar vowel system when he invented the new script in the 13th century. However, there is a lack of information about the Tibetan sound system of the 13th century. It is well known that the spelling of Written Tibetan is basically fixed after the 9th century (Ma et al., 1991). The Tibetan data often only provide us with information about the sound system in the 9th century and its reflexes in the modern pronunciation. But, if we base our judgment on the adoption of letter e2 in the hP'ags-pa script to transcribe the fronted vowels, it is quite likely that such a sound change may have already occurred in the 13th century.

This argument can be backed up by the fact that this sound change is widely reflected in most Wei-Zang dialects, to which the Lhasa dialect belongs. Based on Jin (1983), the following examples show the wide spread of these very regular changes.

	<i>WT</i>	<i>Lhasa</i>	<i>Pengbo</i>	<i>Longzi</i>	<i>Rizeke</i>	<i>Jiangzi</i>
'seven'	bdun	tÿ	tÿ	tÿ	tÿ	tÿ
'you'	khjod	chø?	chø?	chø?	chø?	chø?
'old'	rgas	kε?	kε?	kε?	kε?	kε?

Such a vowel fronting process can also be found in another major group of Tibetan dialects, the Kang dialects.<sup>11</sup> Below are some examples from Changdu

11. There are three major dialects of Tibetan, the Wei-Zang dialect, the Kang dialect and the An-duo dialect. The Wei-Zang dialect is spoken in Tibet, the Kang in Sichuan and Yunnan, and the An-duo dialect in Qinghai and Gansu.

and Dege of the Kang dialects. They are listed with the example from the Lhasa dialect for comparison.

	<i>WT</i>	<i>Lhasa</i>	<i>Changdu</i>	<i>Dege</i>
'need'	dgo sa	k $\phi$ ʔ	g $\phi$ :	g $\phi$
'autumn'	stone ka	t $\tilde{\phi}$ ka	t $\tilde{\phi}$ ka	t $\tilde{\epsilon}$ kha
'cloth'	ras	r $\epsilon$ ʔ	z $\epsilon$ :	ʎe
'medicine'	sman	m $\tilde{\epsilon}$	m $\tilde{\epsilon}$	m $\tilde{\epsilon}$
'silver'	djul	ɲy	ɲy:	ɲu
'seven'	bdun	t $\tilde{y}$	d $\tilde{y}$	d $\tilde{\epsilon}$

That two of the three major dialects of Tibetan show this sound change indicates this sound change happened quite early in history. It is difficult to date the change exactly, but it is possible that this change had already taken place in the time Lama hP'ags-pa lived. If the vowel system in the language Lama hP'ags-pa spoke was very similar to that in the modern Lhasa dialect, it would have been very easy for him to recognize the parallel relationship between back vowels and their fronted counterparts. That is, vowel letters *u*, *o* and *a* in Written Tibetan must be pronounced as *y*,  $\phi$  and  $\epsilon$  in certain phonological conditions. The better explanation for adopting letter e2 is not that other languages, Chinese or Mongolian, demanded more vowel letters, but rather that the Tibetan language itself had these vowels already when the hP'ags-pa script was invented. In a more strict sense, the hP'ags-pa alphabet devised eight vowel letters **a, i, u, e, o, ä, ü** and **ö** instead of six as commonly thought. That is why letter e2 is not listed along with the vowel letters but after two medial letters. This order indicates e2 is not a vowel letter but a letter with special function.

### 5. The phonetic contrast of MC divisions III and IV in the Wu dialects

According to the phonetic value of hP'ags-pa letters e1 and e2, the contrast of divisions III and IV in the MGZY should be the following: the main vowel of division III is a high mid front vowel and division IV a low mid front vowel. This conclusion, of course, must be further examined against the evidence we have for the contrast between MC divisions III and IV.

In the study of MC phonology the phonetic difference between MC divisions III and IV has been a focus of research. The distinction between these two ancient divisions is almost entirely lost in the modern Chinese dialects. For a

long period of time, in the study of Chinese phonology, the reconstructed phonetic value of the MC four divisions was very similar to the description given by the Qing scholar Jiang Yong (1681-1762), which is: 一等洪大, 二等次大, 三四皆細, 而四尤細. (Division I is wide open, division II is less open, divisions III and IV are both closed, and division IV is more closed.) Karlgren's reconstruction of MC can be used to exemplify such a convention although his reconstruction is based on quite different arguments. For divisions III and IV, xi is phonetically interpreted as a high front medial j or i, and *youxi* is considered as a higher main vowel. His reconstruction for the four divisions is:

I	a	II	a	III	jä	IV	ie
高	kau	交	kau	驕	kjäu	驍	kieu.

Because of Jiang Yong's description and Karlgren's initial successes in the reconstruction of MC, such a scheme was widely accepted by historical phonologists. As a result, the phonetic value of divisions III and IV is widely accepted as that division IV should have a higher vocalization and more vocalic quality. Furthermore, such an influence even affects the reconstruction of Old Chinese phonology<sup>12</sup> as well as in study of MGZY.<sup>13</sup>

Starting from the late 1940's, studies (Lu, Zhi-wei 1947:66-7, Li, Rong 1951: 150) have shown strong evidence that the early reconstruction of division IV vowels is basically a mistake. The evidence from the transcriptions of proper names in Buddhist documents suggests that unlike division III, division IV finals did not have a medial and a higher main vowel than the finals of division III. In the following I am going to show that the distinction that has survived in the modern Wu dialects actually indicates that division IV had more open vowel than division III in history.

In most modern Chinese dialects, the syllables from corresponding divisions III and IV have merged and their contrast cannot be retrieved. However, it is

12. In Prof. Li, Fang-kuei's phonological system for Old Chinese, the contrast between divisions III and IV are distinguished by -j- and -i-.

13. While talking about the vowel heights of divisions III and IV in MGZY, M. Hashimoto (1978:69) made following comment:

"We thus have to face the odd conclusion that Medieval Chinese (Old Mandarin) syllables appearing in Division IV in the Rime Tables contained vowels lower than those occurring in the Division III, if we accept E.R. hope's interpretation."

This view represents a widely accepted understanding among historical phonologists that division III should have a lower vowel than division IV, and that the opposite is definitely a mistake.

quite fortunate that in a number of southern Wu dialects such a distinction is still kept. This distinction was first reported in existence in Yiwu of the Wu dialects, by Jin You-jing in 1964 and 1980. More Wu dialects with similar distinctions were reported later by Fu Guo-tong et al in 1985. According to Fu et al's report of the Zhejiang Wu dialects, the locations which have this distinction are concentrated in two subdialectal areas. One is the Wuzhou 婺州 area and the other is the Liqu 麗衢. In the example given below, Jinghua 金華 (JH), Lanxi 蘭溪 (LX), Yiwu 義烏 (YW) and Pujiang 浦江 (PJ) represent the Wuzhou area, and Qingtian 青田 (QT), Qingyuan 慶元 (QY) and Taishun 泰順 (TS) represent the Liqu area. This distinction is best preserved in the rhymes which historically had \*-m/\*-p, or \*-n/\*-t endings with velar initials.

The Wuzhou area preserves the contrast between MC divisions III and IV more systematically. It is preserved in both so-called *Yangsheng Yun* 陽聲韻 (with nasal consonant endings) and *Rusheng Yun* 入聲韻 (with oral consonant endings) of the MC phonology. The MC values are based on Baxter's reconstruction (1992).

		*MC	JH	LX	YW	PJ
III	仙	sjen	sie	sie	sie	siẽ
IV	先	sen	siɛ	sia	siɛ	siã
III	連	ljen	lie	lie	lie	liẽ
IV	蓮	len	liɛ	lia	liɛ	liã
III	劫	kjep	tɕie	tɕii?	tɕie	tɕiɛ?
IV	挾	kep	tɕiɛ	tɕio?	tɕiɛ	tɕia?

The Liqu area only preserves this contrast in some of the words in the *Yangsheng* rhymes. The examples here show that this contrast only exists in the syllables with an alveolar fricative initial, and tends to disappear in the syllables with a lateral initial.

		*MC	QT	QY	TS
III	仙	sjen	ɕiɛ	ɕiɛ	ɕiɛ
IV	先	sen	ɕia	ɕiaŋ	ɕiãŋ
III	連	ljen	liɛ	liɛ	lie
IV	蓮	len	lia	liɛ	lie

These data clearly show that division III syllables have a higher vowel than their division IV counterparts. The syllables listed form minimal pairs in MC, so that there is no other phonological factor that would cause this differentiation except what had been historically inherited. Regardless of various reflexes, some are



oral and some are nasalized vowels, the relative vowel height of these two divisions is fixed. The syllables of division IV always have a lower main vowel than the ones of division III.

It is unfortunate that such important evidence has long been overlooked and has not been fully taken into serious consideration in the phonological reconstruction at various historical stages. But, along with the evidence we have already shown from hP'ags-pa materials, the Wu dialect data provide two crucial pieces of information. First, division IV had a lower vowel than division III. Second, the main vowel of division III could be a relatively high mid vowel. Thus, it is quite likely that in the 13th century, the base dialect of the MGZY had similar phonetic characteristics for divisions III and IV as those in modern Wu dialects.

## 6. Toward a uniform solution

It is very likely that the unrounded front vowels of the three languages in question, Chinese, Mongolian and Tibetan, as reflected in the hP'ags-pa alphabet, might have the following relationship in terms of the vowel height in the 13th century. The mid vowel of Mongolian was a lower one than what letter e1 represented. The Tibetan alphabet lacked letters for this vowel, so of course a new letter was added to the hP'ags-pa alphabet to transcribe this vowel and two front rounded vowels  $\phi$  and  $y$  in Mongolian.

The relationship between phonetic values of hP'ags-pa letters and the unrounded front vowels of Chinese and Mongolian in the 13th century.

<i>hP'ags-pa letter</i>			<i>Chinese</i>		<i>hP'ags-pa letter</i>		<i>Mongolian</i>
Letter	Value	=		=	Letter	Value	
ᠶ	i	=	i		ᠶ	i	= i
ᠡ	e	=	je		ᠡ	e	= (i or ε)
ᠢ	ε	=	(j)ε		ᠢ	ε	= ε
( )	a	=	a		( )	a	= a

In the phonological system of the MGZY, division III had a fairly high front vowel, while division IV had a relatively lower front vowel as its main vowel. So, letter e1 was used for division III and letter e2 for division IV. Both hP'ags-pa letters e1 and e2 represent monophthongs. According to the intrinsic values of the hP'ags-pa letters, the MC four divisions as reflected in the Han, Xian, Xiao and Tan rhymes can be illustrated as following.

<i>Rhyme</i>	<i>Ending</i>	<i>I</i>	<i>II</i>	<i>III</i>	<i>IV</i>
Han	-n	干 -an	間 -jan		
Xian	-n			韃 -en	堅 -ɛn
Xiao	-w	高 -aw	交 -jaw	驕 -ew	驍 -ɛn
Tan	-m	甘 -am	緘 -jam	檢 -em	兼 -ɛm

Of course, whether divisions III and IV had a medial is still a question to be answered. First of all, it is not so surprising that the Chinese **-je-** and **-jɛ-** were perceived as monophthongs **e** and **ɛ** by a Tibetan native speaker, since Tibetan lacked these sequences in its phonology. But based on the evidence we know from Chinese phonology, the palatal medial was unquestionably in existence in division III. Whether division IV had a medial is not as easy to determine, since the available evidence is not conclusive. In any case, whether or not there is a medial in the division IV syllables, the relative vowel height of divisions III and IV in the MGZY remains the same.

In his *A Handbook of Old Chinese Phonology*, Baxter (1992:84) provides the following solution for the MC four divisions in the *Xiao She* 效攝 rhyme group. The distinction he made between divisions III and IV is that division III had a palatal medial and division IV did not have it. The main vowels of these two divisions were the same. They are 高 *kaw*, 交 *kæw*, 驕 *kjew*, and 驍 *kew*. Whether this solution is a final answer to the question of the reconstruction of the MC four divisions definitely needs to be further looked into. The *hP'ags-pa* spellings in the MGZY provide us with a rare opportunity to get a closer look at the phonetic values of the MC divisions in the 13th century. The conclusion we reached here may provide yet another valuable piece of information in the reconstruction of the MC major divisions.

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## 《蒙古字韻》中三等韻和四等韻的音值

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### 摘 要

編於十三世紀的《蒙古字韻》是研究元代語音的最重要的材料之一。由於此書用八思巴字標音，《蒙古字韻》不但提供了音系上的內容，更提供了難得的語音音值。在《蒙古字韻》中，中古三等韻和四等韻的區別依然在先韻，蕭韻和覃韻中保存，並一致地用八思巴字母◀和◻標示。

然而，由於八思巴學者對這兩個字母的音值歷來爭執不定，《蒙古字韻》中三等和四等的音值也因此難以確定。試圖解決《蒙古字韻》中三，四等韻的音值問題，本文研究了諸種與之有關的材料。這些材料包括《蒙古字韻》和蒙古文中八思巴字的拼寫規則，以及藏語方言的和漢語吳語方言的材料。研究的結果顯示，八思巴字母◀代表的元音要比字母◻所代表的要高。字母◻實際是個元音前化的標記，其本身並不代表任何一個確定的元音。

根據這兩個字母的音值，在《蒙古字韻》所代表的音系中，四等韻的主元音 [ɛ] 低於相對應的三等韻的 [e]。這一結論恰和現代吳語中區分三，四等韻的方言中所呈現的區別相符合。

**關鍵詞：**元代語音，八思巴字，三等和四等，《蒙古字韻》