中央研究院

第二屆國際漢學會議論文集

語言與文字組（上冊）

慶祝中央研究院院慶六十週年

中央研究院 編印

中華民國七十八年六月

台灣 台北

中央研究院

第二屆國際漢學會議論文集

中華民國七十五年十二月廿九日至卅一日

語言與文字組 (上冊)

慶祝中央研究院院慶六十週年

中華民國七十八年六月

台灣 台北

中央研究院

第二屆國際漢學會議論文集

中華民國七十五年十二月廿九日至卅一日

語言與文字組 (下冊)

慶祝中央研究院院慶六十週年

中華民國七十八年六月

台灣 台北

中央研究院
第二屆國際漢學會議論文集
語言與文字組（上、下冊）

全套　精裝十冊定價　新臺幣　　元、美金　　元
語言與文字組　精裝兩冊定價　新臺幣　　元、美金　　元

編輯者：中央研究院第二屆國際漢學會議論文集編輯委員會
發行者：中央研究院
院　址：臺北市南港區研究院路二段一二八號
電　話：七八二二一二〇～九（十線）
印刷者：大進印刷有限公司
地　址：臺北市西藏路二五一巷八號
電　話：三〇三九二四九

中華民國七十八年六月出版

中央研究院

第二屆國際漢學會議論文集

語言與文字組

目　　錄

上　　册

下 册

ABLAUT AND INITIAL VOICING IN OLD CHINESE MORPHOLOGY: *a AS AN INFIX AND PREFIX

Edwin G. Pulleyblank

University of British Columbia

I. Introduction

Over twenty years ago I identified under the term 'ablaut' a morphological process in Old Chinese word families consisting of alternation between the vowels *ə and *a in pairs such as *tán* 譚, EMC dəm, 'talk about (trans.)', and *tán* 談, EMC dam, 'talk (intrans.); conversation' or *sì* 似 EMC zi^{2} < *-əγ^{2} 'resemble' and *shiàng* 象 EMC ziaăŋ^{2} < *-àŋ^{2} 'image; to imitate' (Pulleyblank 1963, 1965a). I compared it with similar patterns of vowel alternation, associated with a contrast in meaning that can be labelled extrovert/introvert, in Tibetan, as well as in Kabardian, a Northwest Caucasian language, and Indo-European. Further examples from Old Chinese were added in my paper 'Some new hypotheses concerning word families in Chinese' (1973). More recently (1986), in the light of the hypothesis that, throughout the history of Chinese, ə is to be interpreted, not as an underlying vowel, but as a minimal feature of syllabicity inserted, as required, between consonants by rules of syllabification, I have proposed a reinterpretation of this ablaut as the infixation of a morpheme *a. I have also suggested that this same morpheme can be recognized as the prefix, cognate to Tibetan *ḥa-čhung*, which was responsible for the voicing of initial obstruents in pairs such as 見 *jiàn* 'see', EMC kɛn^{h}, *shiàn* 'appear', EMC ɣɛn^{h}. In both types of derivation the 'introvert' meaning of the morpheme *a, changing transitives into intransitives or verbs into nouns, seems to be much the same, derivable from the meaning 'in, inside' which appears in the independent words *yú* 於, 'in, at', EMC ʔi̯ă < *ʔàă and *yāng* 央 'inside, middle', EMC ʔi̯ɑŋ < *ʔàŋ, evidently derived from the same root. This is the hypothesis which I propose to explore further in the present paper.

II. The Old Chinese Vowel System

The proposal to recognize a process of ablaut based on the ə/a opposition has not been much followed up or even discussed by others working in the Sino-Tibetan field, probably because it seems to have far-reaching implications that people find unacceptable on *a priori* grounds. Leaving aside the question of possible prehistoric

connections between the Sino-Tibetan and Indo-European language families, which, in light of some recent theories about the Indo-European homeland, are less implausible than most people have assumed, the ablaut hypothesis is intimately connected with the theory that Old Chinese had only a single, two-way, contrast in rhyme vowels, based on tongue height, which I have also advanced in a series of articles (1963, 1977-78, 1982a, 1982b, etc.). This has been something of a scandal among my colleagues, since it allegedly violates the universality of the **i-a-u** vowel triangle. See, for example, Ting 1975:32. Nevertheless, as Ting admits, citing the authority of the Ching philologist, Jiang Yung 江永 as well as the modern scholar, Fang-kuei Li, '[The] theory of two vowels contrasing in tongue height has very significant meaning, because this contrast occurs through the whole history of the Chinese language... We believe that, as Pulleyblank claims, this contrast may hold true for the basic nuclear vowels of Sino-Tibetan.' Nevertheless, he doubts 'whether [*ə and *a] are the *only* vowels in Archaic Chinese' (his emphasis), on the grounds already mentioned, that is, the universality of the **i-a-u** triangle.

There seems to be some confusion of thought here. The concept of basic and non-basic vowels is one that is unfamiliar to me and I do not know what Ting means by it. What needs to be emphasized is that those who, like A. H, Kuipers in his celebrated analysis of Kabardian (1960), have made proposals for two-vowel, one-vowel or no-vowel languages do not in any way deny the significance or the universality of the **i-a-u** triangle. What is at issue is whether, in the languages concerned, these vowels, especially the two high vowels **i** and **u**, which in many languages alternate in phonological processes with the consonantal glides **j** and **w**, are best regarded as belonging to the vowel system as such, or are to be analyzed as syllabic realizations of consonantal features, in the same way that syllabic liquids and nasals can be treated as syllabic realizations of the corresponding consonants and do not require the setting up of separate phonemes. This is why, according to one analysis, **i** and **u** are excluded from the vowel system of proto-Indo-European in spite of the fact that, at the surface level, they are present in all Indo-European languages.

The advent of CV phonology within the generative school, which treats syllabicity, not as an inherent feature of individual segments, but as a function of the place of the segment in the syllable, has provided a convenient way of disposing of the problem of how to show the relationship between vowels and their corresponding glides. In a number of recent papers (1983b, 1986b, 1986c) I have argued that, not only the high vowels **i** and **u** but also the low vowel **a**, have non-syllabic glide counterparts. More will be said about this below. Of more immediate relevance to the question at hand, that is, the naturalness or otherwise of a language with only a two-way contrast in rhyme vowels, is the example of modern Mandarin, a language which probably has more native speakers than any

other in the world and can hardly be thought of as 'unnatural', especially in the context of providing a model for the reconstruction of Old Chinese.

As is well known, the Mandarin finals ending in consonants (-n or -ŋ) or high glides (-j or -w) fall into two rhyming sets each, distinguished by relative tongue height of the nuclear vowel. Thus the four finals -ən, -in, -wən, -yn rhyme together in contrast to the four finals -an, -jɛn, -wan, -ɥan. Similarly, -əŋ, -iŋ, -uŋ, -juŋ constitute a single rhyme in contrast to -ɑŋ, -jɑŋ, -wɑŋ. If, as I argued in my paper for the first Taipei conference in 1980 (Pulleyblank 1981) and in my recent book (1984), one recognizes a low glide -ă as the ending of the finals that are normally regarded as ending in mid and low open vowels: -ɤ /əă/, -iɛ/iă/, -uɔ /uă/, -yɛ /yă/, -ɑ /ăă/, -jɑ /jaă/, -wɑ /waă/, this pattern extends to all Mandarin finals except the high vowels -i, -u, -y and the finals -ɿ and -ɻ, which alone have no consonantal ending.

This rhyming pattern in Mandarin is sometimes explained by assuming that there is an underlying ə vowel in -in, -yn, -iŋ, -uŋ which is deleted in surface pronunciation, while ɛ in -jɛn is merely an allophone of /a/. See, for example, M. Chen 1976, who distinguishes between 'the three high vowels (or glides)' and 'two "vowel grades" /ə/ and /a/' in Pekingese phonology. A more economical solution, as I have shown elsewhere, is to say that ə, when it appears, is inserted epenthetically, filling an empty V slot between consonants by rules of syllabification (Pulleyblank 1983b, 1984, 1986b). On this analysis, the high vowels i, u and y are derived from underlyingly glides j, w, and ɥ attached to the second C-node of the invariant C(C)VC template of the Mandarin syllable. If the V-node is empty and the final C-node is filled by one of the possible consonants n, ŋ, r, j, w or the low glide ă, syllabification is achieved either by spreading from a preceding glide or by insertion of ə in accordance with a fairly simple set of rules of frontness harmony between the glide and the final consonant. In the case of the final -jɛn, derived from underlying /jan/, there is also spreading from the glide into the vowel. When the final C-node is empty, the V node is always empty underlyingly. In the absence of a final consonant, ə cannot be inserted and syllabification is only possible through spreading, either from a glide, giving the finals -i, -u and -y, or from a preceding retroflexive or dental sibilant, giving the finals -ɻ and -ɿ (Pulleyblank 1986b).

It is important to note that, however we analyze the Mandarin vowel system, as far as rhyming is concerned the main discriminating features seem to be (a) the final consonant, and (b) the opposition non-low/low in the nuclear vowel, with the features of frontness and rounding in the vowel playing, at most, a secondary role. Moreover this is not based on literary traditions or linguists' theories. In his study of popular children's songs in Peking, Witold Jablonski distinguished thirteen rhymes, as follows (converting his transcriptions into my phonetic

notation): (1) **-i, -y, -ɿ, -ʅ,** (1a) **-u** (sometimes rhyming with rhyme (1)), (2) **-ɑ, -jɑ, -wɑ,** (3) **-ɤ, -ɔ, -uɔ,** (4) **-iɛ, -yɛ,** (5) **-aj,** (**-jaj**), **-waj,** (6) **-ej, -wej,** (7) **-ɑw, -jɑw,** (8) **-ow, -jow** (sometimes rhyming with rhyme (7)), (9) **-an, -jɛn, -wan, -ɥan,** (10) **-ən, -in, -wən, -yn,** (11) **-ɑŋ, -jɑŋ, -wɑŋ,** (12) **-əŋ, -iŋ, -uŋ, -juŋ,** (13) **-ər** — he notes that when this syllable is suffixed to other syllables it reduces the possible rhyme distinctions to six or seven. (1935: 13ff.) This agrees with Chang Hsün-ju, *Bei-ping yin-shi shr-san che* (1937), except that Chang makes (1) and (1a) separate rhymes.[1]

If we extend our theory of Mandarin syllable structure to Late Middle Chinese (LMC), we find that the distinction between finals with **a** and those without corresponds to the 'outer'/'inner' distinction of the rhyme tables and that not only the finals as grouped in the tables but the actual rhyming of poets divided finals with the same consonantal endings into 'inner' and 'outer' rhyming sets. Moreover, this analysis enables us to set up a simple sets of rules for the development of the language from LMC to the Early Mandarin (EM) of the Yuan period, and also to Cantonese and presumably other modern dialects (Pulleyblank 1984, 1986b, 1986c). There are differences, of course. In LMC the syllable template was C(C)V(V)C, not C(C)VC. That is, the 'outer' finals in LMC had the possibility of the vowel clusters **aa, ia, ua** and **ya** in addition to **a** alone. On the other hand, there were fewer open syllables in LMC than in Mandarin. The only syllables that did not end in a stop consonant, nasal or one of the glides **j, w** and **ă**, were those in **-i, -ɿ** and **-ʅ**. The Mandarin finals **-u** and **-y** developed out of LMC **-uă** and **-yă**, with accretions from **-ut, -yt, -əwk, -iwk, -ywk**. The LMC finals **-ɿ** and **-ʅ** had developed through the loss of **-i** after initial **r** and after retroflex and dental sibilants, and could still rhyme with **-i**, as well as **-uj** and **-yj**. The final **-i** itself seems to have developed through the loss of the final glide in earlier **-ij**. The theory that Old Chinese allowed no open syllables and that there were, at most, two rhyming sets of finals, one 'inner' and one 'outer' with any one syllable closure thus receives direct typological support from LMC.

It is true that more elaborate systems of rhyming have existed at various stages. The *Jung-yuan yin-yun*, representing Early Mandarin of the Yuan period, has 19 rhymes compared to the 13 of Pekingese. Three of these are rhymes in **-m** which have since been lost through the merger of **-m** with **-n**. There were also rhymes in **-ɛn** and **-ən**, as well as **-an**. As I showed in Pulleyblank 1986b (which modifies the conclusions of Pulleyblank 1984), this resulted from the fusion of

[1] A recent study by Paul Li (1986) on popular rhyming in Taiwanese shows that a number of phonemic distinctions in finals can be ignored—(a) the distinction between nasalized and oral vowels, (b) final glottal stop, (c) the distinction between close [**o**] and open [**ɔ**]. With regard to (c) he cautions that there are dialects that merge these two vowels but gives no evidence that their interrhyming is confined to such dialects. Compare the occasional interrhyming of [**ow**] and [**ɑw**] in Pekingese noted by Jablonski.

the LMC vowel clusters **-ia-** and **-ua-** to **-ɛ-** and **-ɔ** respectively, creating contrasts between **-jɛn** and **-jan** and between **-ɔn** and **-wan** respectively. In Pekingese **-jan** has merged with **-jɛn** and **-ɔn** has merged with **-wan.** Although the phonetic distinction remains, **-jɛn** now rhymes freely with **-an.** Other differences between Early Mandarin and Pekingese rhyming were: (a) there was an **-uŋ** rhyme, including **-juŋ,** separate from **-əŋ, -iŋ, -yŋ** (though it is clear that **-yŋ** was in the process of shifting to **-juŋ**), (b) the **-ʐ** and **-ɽ** finals were treated as a separate rhyme, (c) **-i** rhymed with **-əj** and **-uj,** (d) **-y** was not treated as rhyming with **-i,** as it normally is in Pekingese, but instead rhymed with **-u.**

The early Tang period, as represented by the *tung-yung* categories of the *Guang yun,* which were canonized in the official examination system and have remained ever since the standard for regulated verse (*liu-shr*), had a more elaborate system of rhyming but it must be remembered that this developed out of the first self-conscious prosodic theories of poetic composition associated especially with the name of Shen Yue 沈約 in the late fifth century. As I suggested in Pulleyblank 1984, it is hardly likely that the sudden increase in rhyme distinctions in poetry that we find at that period really reflects change in the language. For example, it seems that retroflex (Grade II) and nonretroflex vowels were no longer allowed to rhyme together. As far as linguistic reconstruction is concerned, however, I still find it ironic that those who profess to be so strict in interpreting Old Chinese rhyme distinctions remain content with Karlgren's Middle Chinese system, which requires us to believe, for example, that **-ən** and **-uən** could not rhyme with **-jən** and **-juən,** but instead rhymed with **-jɒn** and **-jwɒn,** and that **-ien** and **-iwen** could not rhyme with **-jĕn** and **-juĕn,** but instead rhymed with **-jän** and **-jwän.**

The relation of rhyming in poetry, which is a matter of aesthetic feeling, to the organization of phonology, which is a matter using sounds to make the distinctions needed for encoding meanings, is not necessarily a straightforward one but it presumably has something to tell us about the intuitions of native speakers about their language. At the very least, what we find true for rhyming in present day Mandarin is probably relevant for the interpretation of rhyming at earlier stages of the language. When the naturalness or otherwise of competing reconstructions of Old Chinese is at issue, it is salutary to note that, by the conventions of modern Mandarin, finals such as **-in** and **-ən,** or **-əŋ, -iŋ** and **-uŋ,** which have been set up by various scholars as quite separate rhymes for the *Shr jing,* would rhyme freely together. Of course they do not rhyme by the standards of English or other familiar European languages but is this a valid criterion to apply to Old Chinese? With the examples of modern Mandarin and LMC staring us in the face we need not go to the exotic-seeming languages of the Northwest Caucasus, with their huge arrays of consonants apparently compensating for the poverty of their vowel systems, for parallels to support the reconstruction of only

two contrasting rhyme vowels in Old Chinese. It may be worth noting, however, that two-term, vertical vowel systems have also been reported from New Guinea and Australia (Pike 1964; Dixon 1980:131).

What is probably the most popular Old Chinese reconstruction at present, that of Fang-kuei Li (1971), goes along with the idea of a two-way, **ə/a** opposition, with additional types of final consonant, to the extent of reconstructing labiovelars in addition to the labials, dentals and velars of Karlgren's system. He still has **i** as a rhyme vowel before dentals and velars and **u** before velars, however, which saves the appearance of conforming to the universality of the **i-a-u** vowel triangle but at the expense of giving the two high vowels a very limited and hardly very natural distribution. His reconstruction of final labiovelars, on the other hand, makes sense, not only because it extends the **ə/a** opposition and extends a type of consonant which one must postulate in syllable initial position to syllable final position as well, but also, as I have shown, because it needs to be extended to Middle Chinese also (Pulleyblank 1983a, 1984). As I have also argued, however, (Pulleyblank 1977-78, 1982b), there is at least as good evidence for adding final palatals to the Old Chinese inventory as final labiovelars. We can thus redefine Li's ***-in** and ***-iŋ** (= Karlgren's ***-ien** and ***-ieng**) as ***-əɲ** and **-*aɲ**, respectively, and so extend the **ə/a** opposition to ten of the eleven major *Shr jing* rhyme categories. To complete the pattern, we need to add final uvulars, **-q** and **-ɮ**, corresponding to Karlgren's **-ok -og**. A case for distinguishing uvulars from both plain velars and labiovelars in initial position was made in Pulleyblank 1982a on the basis of early Miao-Yao and Kadai loans and Sino-Tibetan comparisons, and further arguments on the basis of internal reconstructions will be made below.

Demonstrating that there is typological support within Chinese itself for the two vowel analysis of Old Chinese rhyming and that it also does not violate cross-linguistic universals does not, of course, prove that it is the correct analysis, though I would claim that the evidence that I have been able to provide for the continuity of palatalized, labialized and pharyngealized velar endings from Old Chinese right through Middle Chinese does create a strong presumption in favour of the theory quite apart from its attractiveness in giving a tidy and symmetrical account of the *Shr jing* rhyme categories.

III. The Bodman-Baxter Vowel System

The most serious difficulty with the two rhyme vowel theory from the point of view of the internal reconstruction of Chinese is that it leaves unexplained an anomaly within the accepted *Shr jing* rhyme categories in the distribution of labialized (*he-kou*) syllables. Before Middle Chinese velar endings one finds such syllables contrastively only after back initials (velars and laryngeals). This is the principal evidence suggesting that Old Chinese had a distinct class of labiovelar

initials. Before dental endings, and also in certain Middle Chinese rhymes that can plausibly be derived from dental endings in Old Chinese, however, one finds *he-kou* syllables in Middle Chinese with dental, retroflex and palatal initials. Since, as traditionally interpreted, there are also no *Shr jing* rhyme categories with rounded vowels and dental endings, this has suggested to some scholars that between Old and Middle Chinese rounded vowels were subject to breaking before dental endings ***-un** > **-wən**, ***-on** > **-wan**, etc.

The Russian scholar, S. Yakhontov, was the first to use this as the basis for revising Karlgren's Old Chinese reconstruction (1960). He claimed that it was possible to distinguish six previously unrecognized finals, ***-un**, ***-ut**, ***-ur**, ***-on**, ***-ot**, ***-or**, in rhyming and *shie-sheng* series. Before I learned of Yakhontov's article, I had come to a similar idea independently (1962). It was attractive not only because it seemed to account for the distribution of *he-kou* syllables in Middle Chinese but also because it showed promise of bringing the Old Chinese vowel system closer to the five-vowel system of Classical Tibetan. I eventually gave it up (1963), however, when I found that it was very difficult to carry through a clear separation in the rhymes and the phonetic series. Moreover, by itself, adding ***u** and ***o** to the repertory of vowels before dentals still leaves an unbalanced distribution of vowels, since according to the conventional analysis of the *Shr jing* rhymes, there have to be not two, but three, back rounded vowels with velars as against two central vowels and one front vowel.

Recently the proposal to extend the distribution of the vowels **o** and **u** to dental finals has been taken up and developed further by Nicholas Bodman and, especially, William Baxter. They propose a symmetrical six vowel system, two front, two central and two backrounded, for Old Chinese (Bodman 1980, Baxter 1977 and several other articles including, most recently, 1986a, 1986b). I shall not discuss their proposals in detail here. They involve setting up even finer distinctions within the traditional *Shr jing* rhyme categories that, in some cases, even invade individual *shie-sheng* groups. Moreover, to explain various difficulties, they are led to propose untestable assumptions about Old Chinese dialect differences, a slippery slope that all too easily leads to building houses of cards. The evidence that Baxter has been able to assemble in support of his theory on the basis of rhyming seems to me quite problematical and capable of different interpretation, especially in the light of the kind of evidence about the nature of rhyming in Chinese that I have referred to above.

Another serious weakness in the Bodman-Baxter system, as in that of F. K. Li, is their failure to find a solution, other than a purely notational one, for the phonological distinction underlying the so-called *chung-niou* in the *Chie yun*. This, I believe, is because they insist on adhering to Karlgren's yod, **-i̯-** = **-j-** in IPA, as the determining characteristic of so-called 'Grade III finals' (which does not mean

the actual Grade III of the rhyme tables but, rather, what I call Type B finals, *Chie yun* finals which, for the most part, fall at least partly into Grade III but may also contain Grade II and IV words). For some animadversions on the weakness in trying to reconstruct Old Chinese on the basis of an inadequate reconstruction of Middle Chinese, see Pulleyblank 1985.

Returning to the problem of the distribution of *he-kou* finals with dental endings in Old Chinese, though I have no definitive solution to offer at present, I do not think that it seriously undermines the validity of my hypothesis about the Old Chinese vowel system. Some suggestions for dealing with the problem were made in Pulleyblank 1977-78: 200-204.

IV. Derivation by *a as a Prefix and an Infix

As mentioned above, I posit a morpheme ***a** in Old Chinese, which could appear as an independent word in the coverb *yú* 於, 'in, at' EMC **ʔɨă** < ***ʔàă**, with its sandhi variant *hū* 乎, EMC **ɣɔ** < ***Háă-**, as a non-syllabic prefix ***a-**,[2] cognate to Tibetan *ḥa-čhung*, which caused voicing of initial obstruents, and as an infix. In the remainder of this paper I shall discuss some additional sets of cognate words to illustrate these derivational processes.

(1) *chiōu* 丘 EMC **kʰuw** < ***kʷʰəɣ** < ***χəɣ** 'hill; grave mound; empty', *shī* 虛 EMC **xɨă, kʰɨă** < ***χăɣ** 'large hill; grave mound; site of an abandoned city; empty'.

(2) *jiŏu* 久 EMC **kuw²** < ***qʷəɣ²** < ***qəɣ²** 'for a long time'; *jiòu* 舊 EMC **guwʰ** < ***ăqʷəɣ²s** < ***ăqəɣ²s** 'old'; *gŭ* 古 EMC **kɔ²** <**qáɣ²** 'old times, ancient'; *gù* 故 EMC **kɔʰ** < ***qáɣ²s** 'old (friend, acquaintance); precedent; cause, reason, etc.'; *hú* 胡 EMC **ɣɔ** < ***ăqáɣ** 'long-life, long-lived'.

These two word families are examined together, not because they are semantically related but because they show a similarity in their phonetic make-up. In both cases the 'inner' members of the families, reveal labialized initials through their shift from the Old Chinese *jr* 之 rhyme category to the *you* 幽 category, while the 'outer' members, belonging to the Old Chinese *yu* 魚 category, show unlabialized initials. This would normally exclude them from consideration as cognates. However, the close semantic relationship between the members of set (1), reflected even in the graphs, and the fact that they even appear to be used interchangeably at times, have long led scholars to assume they were closely related words. See, for example, Wang Li 1982: 85, who quotes the *Shuo wen*, along with the Ching dynasty commentary of Shiu Hau 徐灝, and a number of passages

[2] In the cited article I reconstruct the prefix as ***ʔa-**, that is, as (initially) syllabic, even though unstressed. This now seems to me to be unnecessary. If it could become non-syllabic, as we must assume if our interpretation of Tibetan *ḥa-čhung* is correct, it is surely better to reconstruct it as non-syllabic from the beginning, since this is the form in which it is actually attested in Tibetan.

in the *Yi jing*, *Shr jing* and later works of the classical period.

There is, I believe, a good explanation for the apparent phonetic irregularity. If my assumptions about the final consonants of Old Chinese are correct, at the time of the *Shr jing* uvulars survived as a distinct set only after the vowel **a** in the 'outer' finals, that is, in the *shiau* 宵 category, Karlgren's **-ok**, **-og**, (which, it will be remembered, has no corresponding nasal finals). In the 'inner' finals, after **ə**, they had become labialized, merging with the *you* 幽 category. If we assume that initial uvular stops and fricatives followed the same pattern, becoming labialized in front of **ə** but not in front of **a**, this will account for such cases as (1) and (2).

In (1), for reasons which I will set out more fully elsewhere, I assume that the original initial was a voiceless uvular fricative *χ. Whether the aspirated stop that we find before the 'inner' final in EMC is just the normal development of this in its particular environment or requires some special explanation is difficult to determine at present. The *Guang yun* gives the alternative reading EMC **khiă** for 虛 in the sense of 'mound', as well as an alternative graph enlarged with the 'earth' radical, but the status of this is not quite clear. The current pronunciation is *shiū* in all senses. The pronunciation *chiū* may be influenced by the pronunciation of 丘. If Shiu Hau is right, the meaning 'empty' is merely an extension of the primary meaning 'large hill; grave mound' and not a separate word.

If we may believe the *Shuo wen*, the primary difference between 丘 and 虛 was in terms of size, the latter, with the vowel **a**, being larger than the former. This corresponds to a commonly observed generalization about sound symbolism but is not easy to relate to the specific 'introvert' meaning that I postulate for the morpheme ***a** in other contexts. This is not, of course, evidence against the correctness of the hypothesis. All occurrences of ***a**, even all alternations between ***a** and ***ə** (i. e. phonologically zero) do not have to be instances of the morpheme ***a** any more than all instances of final **d** in English have to be instances of the past tense marker.

In set (2) above, on the other hand, though there are some obscurities, the semantics seem to fit the introvert/extrovert hypothesis very well. 久 *jiŏu*, presumably representing the simplest form of the root, though given the dictionary meanings 'long, for a long time,' is not an adjective but an active verb, meaning, 'to last a long time'. In the *Shr jing* 37/2 Karlgren translates *hé chi jiŏu yĕ* 何其久也 appropriately as, 'Why does he tarry?' 舊 *jiòu*, on the other hand, is an adjective, often used predicatively, meaning 'old' as opposed to 'new'. With departing tone and voiced initial, it shows both the voicing perfix and the ***s** suffix, so it is difficult to determine what is the effect of each. Possibly the suffix had a perfective meaning—'having lasted a long time'. Compare the *-s* suffix which is characteristic of the perfect form of the verb in Tibetan. The prefix, on the other hand, may

have had the effect of turning the active verbal meaning into a quality. Compare the adjective *cháng* 長 'long' EMC **drɨaăŋ**, with voiced initial, and the transitive and intransitive verbs *jāng* 張 EMC **trɨaăŋ** 'stretch' and 長 *jǎng* 'grow' EMC **trɨaăŋ**[2], with voiceless initials.[3]

Turning to the 'outer' members of set (2), the first one *gǔ* 古 is commonly rendered as 'old, ancient' in dictionaries. Grammatically, however, there is no doubt that it is really a noun, meaning something like 'olden times', and not an adjective. *gǔ rén* 古人 and *gǔ jī rén* 古之人 mean 'men of old', not 'old men'. Moreover *gǔ* is not found as a predicate adjective like *jiòu*. As we should expect, *jiòu* can take the regular verbal negator *bù* 不, like other adjectives. See *Juang-tz* 20/22, 23/77, 78, 33/18. *bù gǔ*, on the other hand, would seem to be quite impossible. Though, as I have suggested, the adjective *jiòu* had the ***ă** *prefix*, it still lacked the ***a** nuclear vowel and so was more 'extrovert', that is, in this case, more relational, than the noun *gǔ*.

The most familiar usage of the fourth member of the set, *gù* 故, is as a noun, meaning 'cause, reason'. This is already the most common sense that we find in the *Shr jing*, for example in 36/1, 微子之故 'if not for my lord's sake'. We also find it, however, in the meaning 'old acquaintance, old friend', as in 81/1, 不寔故也 'Do not be brusque to an old friend'. The basic meaning of the word must be 'thing or person of former times', hence 'established fact, precedent, cause, reason,' in its non-personal applications. Thus, it can be clearly seen as a derivative of *gǔ* 古 'former times' in an individuating sense. From the point of view of the present discussion, its substantival character corresponds to the 'introvert' force which we ascribe to the vowel **a**.

The character *hú* 胡 EMC ɣɔ < ***ăqáɣ**, with 古 as phonetic, which most commonly has the meaning of an interrogative pronoun 'why, how', occurs twice, in *Shr jing* 290 and 292, in the combination *hú kǎu* 胡考, translated by Karlgren as 'those of great old age.' The Mau commentary glosses *hú* as *shòu* 壽 'long-life, old age', which is also supported by a passage in the *Yi Jou shu*. It glosses *kǎu* as *chéng* 成 'complete, achieve'. Since *kǎu* often means 'old', Karlgren prefers another interpretation, which takes *hú* as a loan for *shiá* 遐 'distant', hence 'distantly old' (1946 Gloss 1126). It seems likely, however, that *hú* is yet another member of the word family we are discussing. Unfortunately, the evidence is insufficient to determine its meaning and grammatical category precisely.

It will be noted that in discussing the words in this set I have ignored the fact that the 'inner' pair belong to what I call Type B, falling into Grade III in

[3] While the Departing Tone plays a very prominent and well recognized role in morphological changes in Old Chinese, the Rising Tone is less commonly met with in such alternations. Could the final glottal stop which we reconstruct as the source of this tone in Middle Chinese represent an old ***a** suffix? I leave this question for future investigation.