COMPETING FINAL SYSTEMS IN
THE JIAN'OU DIALECT*

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ABSTRACT

This is a study of the sound change that occurred in Jian'ou, a northern Min dialect. It is based on a rime book titled Jianzhou Bayin (A.D. 1795) supplemented by data on its modern descendants. The earlier Jian'ou dialect as reflected in the rime book shows complicated developments of finals. The complexity in final systems can be attributed to the accretion of phonological strains over centuries of dialect contact as well as system-internal developments. In this paper I propose a new methodology to arrive at a unified account. Min dialects have long been known to preserve the relic forms of Old Chinese. Instead of relying solely on the Middle Chinese (i.e. Qiyeun) system I use phonetic compounds (i.e. xiesheng) and the Old Chinese system as major frames of reference in tracing the evolution of finals in Jian'ou. An attempt is also made to date various stages of the development in the light of previous studies of the evolution of rime patterns. This new approach has turned up many interesting results: a revelation of Min-unique traits of finals, the great vowel shift in the colloquial layer,

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an insight into the interaction between internal development and contact-induced change, and lexical diffusion as exhibited in the on-going change of competing finals.

1. INTRODUCTION

This is a fine-grained study of final developments in the Jian’ou dialect spoken in the northern part of Fujian. It forms Northern Min along with its adjacent dialects—Jianyang, Songxi, Zhenghe and Pucheng (Chen et al 1982). Jian’ou diverges from Xiamen, a Southern Min dialect, and Fuzhou, an Eastern Min dialect, in many respects. To name a few, Jian’ou has lost the stop endings leading to a merger of plain finals (陰聲韻) and finals with historical stop endings (入聲韻), the realization of the Middle Chinese 來 (*l) initial as a fricative /s/ and the unique development of Tone Iv (i.e. 濁平) (Chang 1988 and Hirata 1988).

The earliest extant material recording this dialect is a rime book titled Jianzhou Bayin dating back to 1795 (Lin 1795). This book may have been modelled after Qilin Bayin, a rime book codifying Fuzhou dialect, judging from the unconventional arrangement of tones (Li 1989).

This report is mainly based on the data pool culled from Lin (1795), Huang (1957), Norman (1976), Chen et al (1982), Anonymous (1962-3) and Beijing Daxue (1989). Since Jianzhou Bayin was written in Chinese characters, it is necessary to convert the characters into phonetic values. The phonetic values worked out in Huang (1957) on the basis of modern Jian’ou dialect are therefore adopted here with some minor modifications. Jianzhou Bayin, the earliest record of the Jian’ou dialect, has been given a full treatment in Chang (1989a) where its phonological system is largely adumbrated. (1)

Many considerations compel me to take a fresh look at Jian’ou. One of the most intriguing features of Min dialects is the preservation of Old Chinese

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(1) The system of finals in Jian’ou is given Appendix 1. Chang also take pains to unravel the multi-layered phonological systems in Min (Chang 1984 and 1989b). In working through the Jian’ou system I constantly refer back to his works for inspiration.
(OC) phonological traits. (2) It would not be going too far to say that our knowledge of OC hinges crucially on a proper understanding of southern dialects like Min, Yue and Kejia. Previous efforts at reconstructing OC sound systems were overwhelmingly biased toward northern dialects. As a result, there are many areas where the OC systems thus obtained cannot be reconciled with some phonological developments in southern dialects. Therefore, there is a wide gap that needs to be filled in our endeavor to better our understanding of the evolution of Chinese phonological system. I hasten to add that I am not implying that there are no Middle Chinese (MC) or even modern elements in southern dialects. Only the scale of OC traits in these dialects is incompareable.

The bulk of this paper is organized into five sections. Section 2, the longest one, gives a detailed treatment of the evolution of finals with OC rime categories taken as a point of departure. Section 3 offers an overview on the general trends of developments of finals in tune with the principle of phonological symmetry. Sections 4 and 5 are case studies of competition of finals as revealed in the MC 蟹 rime group and the OC rime categories 沃, 鎳 and 錫. Section 6 discusses the on-going sound change in the xiesheng series in support of the thesis of lexical diffusion. It is the intent of my present effort to tease out the OC traits and their subsequent evolutions and present a unified account of vowel shift that shows patterns of parallel development. I also look at the interaction between system-internal development and contact-induced change and explore the temporal dimension of the xiesheng series. A new perspective is added to the theory of lexical diffusion in the light of the on-going vowel shift exhibited in the xiesheng series.

(2) In Wang's (1958:32-35) periodization of the history of the Chinese language, the periods prior to the third century are regarded as Old Chinese and the periods from the fourth to twelfth century are taken as Middle Chinese (MC). The third to fourth century is a transitional period when China experienced socio-political upheaval and large-scale disintegration that had a tremendous impact on the structure of the Chinese language. Our knowledge of OC is chiefly derived from the riming patterns of Shijing or the Book of Odes (ca. 1100 - 600 B.C.), phonetic compounds, and rime categories of verses of Han periods (206 B.C.- A.D. 220). The MC phonological system is inferred from Qieyun (601), the earliest extant rime book.
2. THE DEVELOPMENT OF FINALS IN JIAN'OU

In this section I will trace the evolution of finals in Jian'ou taking the rime categories of OC and the correlated MC values as a frame of reference. (3) But the rime categories of OC are taken as a major frame of reference. As will become clear in the following discussion this new approach is justified since many OC features are preserved in this dialect. In keeping with the traditional classification of OC rime patterns the following deliberation falls into three parts: 2.1. the plain finals or finals with voiced stop endings (i.e. 阴声韻), 2.2. the finals with voiceless stop endings (入声韻), and 2.3. the finals with nasal endings (陽声韻). In the following the deliberation of the evolution of each OC rime category is preceded by a table showing the stratal distinction as well as the correlated MC information. In the coded MC information as given on the rightmost column the first character denotes the rime group, the second character the 開/合 (unrounded/rounded) distinction, the third character the grade and the fourth character the rime. The MC code in parentheses means that it has few reflexes. For stratal distinction lit. means literary layer, col. colloquial layer, and x. status unknown.

2.1. THE PLAIN FINALS

2.1.1. THE 之 (ZHI) CATEGORY

<table>
<thead>
<tr>
<th>之</th>
<th>*ə (*əə)</th>
<th>col.</th>
<th>x.</th>
</tr>
</thead>
<tbody>
<tr>
<td>lit.</td>
<td>o 陪灰佩媒</td>
<td></td>
<td>蟹合一灰</td>
</tr>
<tr>
<td></td>
<td>ai 才待來在耐胎</td>
<td>o 才在胎</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ε 菜來耐 uε 災待</td>
<td></td>
<td>蟹開一咍</td>
</tr>
<tr>
<td></td>
<td>ai 埋</td>
<td></td>
<td>蟹開二皆</td>
</tr>
</tbody>
</table>

The 尤 and 脂 rimes partially branched off into the 幽 category in the Western Han period (206 B.C. - A.D. 23). (Luo and Zhou 1958: 13). A group of words in the 哉, 灰 and 賜 rimes split off and developed into an independent category as early as the Three Kingdoms period (A.D. 220-280) . (Zhou 1983: 92). It is a process of diphthongization and vowel lowering yielding /ai/ . (4) /o/ or /e/ as a reflex of the 蟹 or 止 rime group belongs in the colloquial layer as opposed to the literary layer /ai/, /i/ or /u/.

If 開口 and 合口 in MC differ in the absence and presence of a rounded medial, the reflexes in colloquial layer are found to be in conflict with this distinction. Since such a discrepancy is manifested only in the colloquial layer which is the earliest system, there is every reason to believe that the colloquial layer represents a pre-MC, if not the OC, system. There is ample evidence in support of this Min-unique colloquial layer: the realization of 哉 (開口) as /ue/ in words like 戴, 載, 待, 宰, 海, 災 and 亥, and the lack of distinction between 哉 and 灰, both of which are realized as /o/. (5) The appearance of the rounded medial in the 賜 (合口) group, as in 怪 /-uε/-yε/, which is in keeping with the MC distinction, must be a later development.

(4) For a full treatment of the evolution of /ai/ as a reflex of the 蟹 rime group see Section 4.

(5) 戴, 載, 待, 宰, 海 and 災 are also realized as /ue/ with a rounded medial in Shuangfeng, a Xiang dialect. (Beijing Daxue 1989: 146-151) This unique realization should not be dismissed as fortuitous. There are many areas of commonality, especially the value of finals, shared by Min dialects and Shuangfeng. It is not unlikely that they are substratally related.
2.1.2. THE 幽 (YOU) AND 宵 (XIAO) CATEGORIES

幽 *u (*wug)
lit. au 老鳥抱怨 e 老鳥抱怨老鳥報 y 邪 x. 敷開一裹
au 孝貌茅 iau 巧 e 茅卵 y 鮮 a 膨

x. iau 營 敷開三裹
iau 條 敷開四裹

e 臭 au 流 iau 救
tau 流救 流開三尤
iu 幽 (流開三幽)
e 質 (流開一候)
y 達 (止合三脂)
y 鑄 (遇合三虜)

A portion of the 幽 category (幽 1) coalesces into the rime group 敷 along with the whole 宵 category. Another portion of it (幽 2) shifts to the rime group 流. Thus, the 敷 words derived from 幽 1 and 宵 exhibit virtually no difference in the development of finals both in literary and colloquial readings. For the 敷 and 宵 rimes (敷一二) there is still a stratal distinction between /au/, /iau/ (literary) and /e/, /ə/, /y/ (colloquial). The 宵 and 蕭 rimes (效三四), however, show no stratal difference.

The development of 幽 2 into 流 represents a different story. There are very few words in the 幽 category evolving into the 侯 (流一) and 幽 (流三) rimes and they show no stratal distinction. Unlike these two rimes the 尤 rime (流三) has a larger share of 幽-derived words and the reflexes of /iu/, /e/, /au/ and /iau/. The distribution of /au/ as a colloquial pronunciation is much more limited in Jian’ou than Xiamen:

<table>
<thead>
<tr>
<th></th>
<th>Jian’ou</th>
<th>Xiamen</th>
</tr>
</thead>
<tbody>
<tr>
<td>九</td>
<td>e</td>
<td>au</td>
</tr>
<tr>
<td>臭</td>
<td>e</td>
<td>au</td>
</tr>
<tr>
<td>姓</td>
<td>iu</td>
<td>au</td>
</tr>
<tr>
<td>留</td>
<td>iu</td>
<td>au</td>
</tr>
</tbody>
</table>
流  au  au
救  iau  iu
涸  iau  iu

The alternation between /au/ and /iu/ or /e/ may have come about as early as MC times. This claim is supported by the fact that the word 廖 is recorded as a doublet in Guangyun; it belongs to the 尤 and 蕭 rimes at once.

The 尤 rime has another colloquial reading /e/ reflecting the combined effect of lowering and fronting. The /e/ occurs in both the rime groups 效 and 流 in the colloquial layer. This may reflect a stage when these two rime groups still stuck together under the 幽 category.

宵  *o (*aug)

lit.  col.
au 逃离肴獠盗  o 逃离  效開一裳
au 巢敲 iau 敲  e 巢  效開二肴
au 樃 iau 妙朝  io 搭朝 e 肇  效開三宵
au 皎 iau 皎  效開四肇

As mentioned in the discussion of the 幽 category, there is a close parallelism between 宵 and 幽 in the vowel shift. However, the development in the 宵 category is much more uniform since unlike the 幽 category it corresponds to a single MC rime group, i.e., 效. The colloquial forms are realized as /ɔ/ (裳), io (宵) and /e/ (肴, 宵) as opposed to the literary form /au/ and /iau/. There seems to be a chronological dimension in the literary layer. The plain /au/ is earlier than the yodized /iau/. The earlier form /au/ implies no contrast between Grade 1 (裳) and other grades (肴, 宵, 蕭). For 蕭 (效四) rime the colloquial forms have all been replaced by the literary forms.
2.1.3. **THE 魚 (YU) AND 侯 (HOU) CATEGORIES**

魚 *a (*ag)  
lit.  
遇 u 鋒 chu 螌 h 螅 y 鋒  
col.  
遇合一模  
iə 媼  
遇合三虜  
iə 著 오 去 uə 鋒  
遇合三魚  
ua 華  
假合二麻  
a 把  
假開二麻  
iə 爺 ia 野 a 野  
假開三麻

In general, this category follows two routes of development. *a (*ag) is raised in the rime group 遇, but its lower value remains unchanged in the rime group 假. For the first group the words in the colloquial layer derive the mid vowels by raising /a/ to /ə/, /o/ or /ε/. The -i- or -u- glide may have a role in the raising of vowels. The words in the literary layer take on the high vowels /u/ and /y/ representing a further step of raising. This innovation seems to near completion since there are only a few words left that keep the colloquial readings. There is a large proportion of words in this group where the reflex /ɔ/ in Xiamen, a Southern Min dialect, correspond to /u/ or /y/ in Jian’ou. If we assume that Jian’ou and Xiamen evolved from the same ancestor language, there must be a common stage when the words in this group were realized as /ə/. The literary layer of the 遇 group represents a finer contrast between /u/ (literary) and /y/ (colloquial), which is parallel to the contrast between /u/ (literary) and /o/, /oɔ/ (colloquial) in Wenzhou, a southern Zhejiang dialect, in words such as 鋒, 螅 and 把. The parallelism in the colloquial pronunciation may well mean a common substratum the exact nature of which is in need of further probing.

Unlike the first group the second rime group (假) has only one layer preserving the low vowel /a/. As early as the Western Han period (206 B.C. -A.D. 24) this group had merged to the 歌 category (Luo and Zhou 1958: 22). This may explain why the /a/ in this group was not raised to /ə/.

Since 魚 /*a (*ag)/, 鐸 /*ok/ and 陽 /*əŋ/ are identical in the values
of main vowels they have rather similar patterns of vowel raising as indicated in their uniform reflexes /ɔ/ and /a/.

侯 *ɔ (*ug)

lit. col. x.
au 嘔 e 狗嘔偷猴厚透 流開一侯
y 樹柱珠住取 u 符 iu 樹柱珠住取 遇合三虞
iu 晉 e 晉 e 鎖 (流開三尤)

Except for sporadic cases showing the contrast of /au/ (col.) and /e/ (lit.) and /iu/ (col.) and /y/ (lit.) the stratal distinction is hard to draw. Xiamen has the contrast of /au/ (col.) and /ɔ/ (lit.) in the 侯 rime and /au/ (col.) and /iu/ (lit.) in the 尤 rime. In the light of the stratal contrast in Xiamen, it can be assumed that Jian’ou has lost the colloquial layer corresponding to /au/ in the 侯 and 尤 rimes in Xiamen. The emergence of /e/ may be a result of dialectal substratum or due to the system-external influence; e.g. the Shuangfeng dialect also has realized the 侯 rime as /e/.

For the 尤 rime words like 樹 and 柱 still retain a contrast of /iu/ (col.) and /y/ (lit.). An important innovation of this rime is that there is an alternation between /y/ and /u/ where the former is derived from fronting /u/.

2.1.4. THE 歌 (GE) AND 支 (ZHI) CATEGORIES

歌 *ai (*ar)

lit. col. x.
ɔ 蠕我多 a 他 ye 鹑 uɛ 蛇我多
a 巖 破磨 o 裏磨 ua 科裏 uɛ 磨破
ia 芡腐 ye 瘟 ia 沙麻 ua 麻 uɛ 沙
i 蛇 a 蛇 ye 蛇
ie 爹 a 爹

果開一歌
a 差 ai 差 (蟹開二佳)
果合一戈
果合三戈
假開二麻
假開三麻

ua 瓦 假合二麻
The reflexes in the literary layer are more uniform than those in the colloquial layer. Consider first the literary layer. The rime group 果 are realized as /a/ (Grade 1) or /ia/ (Grade 3) resulting from the raising of *ai (*ar). The 開口 words in the rime group 假 yield /a/ (Grade 2) and /ie/ (Grade 3), while the 合口 words show no stratal distinction. The 支 and 脂 groups bring forth the high vowels, i.e. /i/ (開口) and /y/ (合口) effected by the two-step process of raising.

The colloquial layer is much more diversified in its modern reflexes. However, since this layer reflects earlier stages of development, it is to be expected that earlier forms are more well preserved. The forms such as /ye/, /uc/, /ie/, /ia/ and /a/ meet our expectation. They preserve better the original form. Words of 支/脂 rimes are especially revealing. They split off from the 歌 category into the 止 rime group, but some of them still keep the pre-MC values in colloquial pronunciation, as in 奇 ye, 奇 ye, 奇 uc, 疲 ye and 地 ia/ie. (Huang 1982: 181-182 and Chang 1984: 430). The mid vowel /e/ in the forms /ye/, /ie/ and /uc/ are derived from raising /*ar/ under the influence of the preceding high medial. (6)

Luo and Zhou (1958: 26-27) shows that the 歌 and 支 categories were pretty close in pronunciation in the Western Han period. The alternation of /i/ and /a/ in the word 蛇 in Jian’ou lends support to the documented evidence that this word was put under the 支 category when occurring in the compound 龍蛇 and the 歌 category when occurring in 委蛇 in the Eastern Han period although both instances were put together under the 歌 category in the Western Han period.

(6) In many OC categories besides 歌 the distinction of 開口 and 合口 in the great number of words can not be correlated with that in the MC final system. Karlgren (1954: 246-247) (cf. Chao 1941) points out that this distinction of 開口 and 合口 as registered in 廣韻 for the 山 rime group is absent in 切韻. This unique trait in Jian’ou as well as many Min dialects may represent a different system antedating the 廣韻 system.
COMPETING FINAL SYSTEMS IN THE JIAN’OU DIALECT

In the Shijing period a clear line can be drawn between the 支 (*ig) and 歌 (*a) category, but in the Western Han period they began to show signs of riming. This means that the reflexes /ia/ /ai/ of the 開支 group are earlier than the reflex /i/ and must be regarded as belonging to the colloquial layer. 支 (*ig) and 錫 (*ik) are the same in vowel height and parallel in taking on the low vowel /a/ as the modern reflex and in the absence of /ɔ/ in the colloquial layer (see Section 2.2.5). In the Northern Wei period (386-534) the 資 group merged with the 皆 category (comprising MC 皆，咍，灰 and 齊 rimes) which branched off from the 脂 category in the Jin period (265-420).

2.1.5. THE 脂 (ZHI) AND 微 (WEI) CATEGORIES

The 脂 category split into 脂 and 齊/皆 rimes in the Jin period (265-439). 齊/皆 experience lowering. The 哉 group of the 之 category has /ai/ as a literary reading as opposed to /o/ or /ɛ/ as a colloquial reading. This distinction arises since the 哉 words do not undergo vowel lowering in Jian’ou,
whereas other dialects do. However, the 齊 (蟹開四) group of both 支 and 脂 categories has /ai/ as a colloquial reading as opposed to /i/ as a literary reading. In Jian’ou and many other southern dialects /ai/ resulting from vowel lowering does not undergo further change. But in many other dialects it is monophthongized and merges with /i/. Thus, the /i/ of the 齊 group as a secondary development is evidently different from the /i/ of the 開脂 group as a primary development. Unlike 齊, the /ai/ of 皆 has never undergone monophthongization and no stratal distinction can be drawn system-internally, but it can be regarded as belonging in colloquial layer when contrasted with the reflexes in northern Chinese.

In the literary layer /ai/ is a much later development derived from /i/ by backward shifting under the influence of the 精 and 知照 (-grave) series in Jakobsonian terms. It corresponds to the apical vowels /ʌ/ and /ɻ/ in Mandarin. The merger of 支, 脂, 之 and 微 into /i/ must have been completed before the 8th century (Wang 1958: 163). The apicalization of /i/ of 支, 脂 and 之 into /ʌ/ and /ɻ/ conditioned by the 精 and 知照 series could not have occurred later than the 12th century (ibid. 164). While these three rimes have fallen together in the literary pronunciation, they still preserve various degrees of distinction in colloquial speech in Jian’ou as evidenced in the above discussion. This is probably a Min-unique phenomenon (cf. Norman 1988).

<table>
<thead>
<tr>
<th>微</th>
<th>*ei (*əd)</th>
</tr>
</thead>
<tbody>
<tr>
<td>lit.</td>
<td>col.</td>
</tr>
<tr>
<td>ye 開</td>
<td>uɛ 衰</td>
</tr>
<tr>
<td>o 罪</td>
<td>ai 彈</td>
</tr>
<tr>
<td>uɛ 淮槐</td>
<td>蟹合二賀</td>
</tr>
<tr>
<td>y 累跪</td>
<td>o 累毁</td>
</tr>
<tr>
<td>ye 體</td>
<td>o 尾 ye 尾體飛</td>
</tr>
<tr>
<td>ye 機</td>
<td>yɛ 機</td>
</tr>
<tr>
<td>o 衰</td>
<td>(止開三微)</td>
</tr>
<tr>
<td>o 悲霉</td>
<td>(止開三脂)</td>
</tr>
</tbody>
</table>
微 *əi (*əd), 物 *ət and 之 *ə (*əg) have the vowel height in common and show parallel development in that they share /o/ in the colloquial layer. The clear-cut distinction between 微 *əi (*əd) and 脂 *e (*id) witnessed in Shijing and the rime patterns in the Nanbei Chao period (Wang 1958: 83) is maintained in the colloquial reading in Jian’ou. The final develops into /y/, a high front vowel, in the literary reading. As shown elsewhere, it is a unique Min phenomenon that in colloquial layer the 開口 rime may yield a reflex with a rounded medial, as in 機 /ye/.

2.2 THE FINALS WITH VOICELESS STOP ENDINGS

2.2.1. THE 職 (ZHI) CATEGORY

職 *ə (*ək) (7)

<table>
<thead>
<tr>
<th>lit.</th>
<th>col.</th>
</tr>
</thead>
<tbody>
<tr>
<td>o 国或惑</td>
<td>曾合—登</td>
</tr>
<tr>
<td>ə 刻特勒北則賊黑墨塞 a 塞</td>
<td>曾開—登</td>
</tr>
<tr>
<td>i 逼值植翼食 u 食</td>
<td>曾開三蒸</td>
</tr>
<tr>
<td>y 域</td>
<td>(曾合三蒸)</td>
</tr>
<tr>
<td>y 昼 u 牧服伏</td>
<td>通合三東</td>
</tr>
<tr>
<td>u 衽</td>
<td>(通合三錘)</td>
</tr>
<tr>
<td>ə 核革 o 核 a 麥</td>
<td>(梗開二耕)</td>
</tr>
<tr>
<td>o 賽</td>
<td>(蟹開一咍)</td>
</tr>
<tr>
<td>o 背潰</td>
<td>(蟹合—灰)</td>
</tr>
<tr>
<td>ai 楽</td>
<td>(蟹開二皆)</td>
</tr>
<tr>
<td>ai 懿</td>
<td>(蟹開二夬)</td>
</tr>
<tr>
<td>i 意試置異</td>
<td>止開三之</td>
</tr>
<tr>
<td>i 備</td>
<td>(止開三脂)</td>
</tr>
</tbody>
</table>

The development of this category is more or less parallel to the development of the 之 category since they are identical in vowel height. The

(7) For the 入聲 categories the MC nasal rimes are used in place of the homorganic rimes with stop endings. For example, 登 stands for 德.
mid vowels /o/, /ɛ/ and /ie/ (曾三) which this category shares with the 職 category represent the earlier and more conservative forms in contrast to the high vowels /i/, /u/ and /y/.

It was in the Three Kingdoms period that the 職 category split into two classes: (1) 登 (曾一) and 耕 (梗二), and (2) 蒸 (曾三) and 東 (通三) (Zhou 1983: 109). The modern reflexes partially reflect such a difference. /o/ and /a/ are found in Class 1 only. On the other hand, the literary pronunciation shows much resemblance in Class 2. This contrast can be regarded as an innovation antedating Qieyun times. It should be noted that even though the 職 category is found to split into 登 蒸 and 東 rimes in MC, these rimes still maintained an intimate relationship as evidenced in the rime patterns during the Six Dynasties (222-589) and Tang (618-907) and Song (960-1279) Periods. (Wang 1958: 86)

2.2.2. THE 屋 (WU) AND 覺 (JUE) CATEGORIES

屋 *ok (*uk)

lit. col.

u 獨鹿卜連讀昏屋碌祿 o 捲 e 讀 通合一東

y 肉褥 通合三東

y 燭欲促蜀獄續 u 促 o 欲 a 獄 通合三鍾

y 捉 o 鐵琢樸削角 a 嶽岳殼 u 削角殼 江開二江

e 寇漱湊 流開一侯

u 計數 遇合三畝

The literary layer of this category yields the rounded high vowels: /u/ (東一), /y/ (東三) and /u, y/ (鍾虞). On the contrary, there are many types of reflexes for the colloquial layer which are identified as a mid vowel /ɔ, ə, e/ or a low vowel /a/. There are some residual words in 江 rime such as 削角殼 which retain the high back vowel of the 屋 (*uk) category in the colloquial pronunciation as opposed to /ɔ/ or /a/ in the less colloquial pronunciation. This reflex is echoed in Shuangfeng and should be regarded as a primary development in contradistinction to /u/ in the literary layer just as the collo-
quial pronunciation /au/ as a reflex of the 幽 category in words like 老草撮 should be distinguished from the literary pronunciation /au/ in words like 島稻抱 in Xiamen.

<table>
<thead>
<tr>
<th>覺</th>
<th>*uk (*œuk)</th>
</tr>
</thead>
<tbody>
<tr>
<td>lit.</td>
<td></td>
</tr>
<tr>
<td>u</td>
<td>督酷毒</td>
</tr>
<tr>
<td>au</td>
<td>電</td>
</tr>
<tr>
<td>y</td>
<td>廣祝眾築</td>
</tr>
<tr>
<td>i</td>
<td>迅</td>
</tr>
<tr>
<td>au</td>
<td>奧懊炷告騫</td>
</tr>
<tr>
<td>au</td>
<td>窖</td>
</tr>
<tr>
<td>col.</td>
<td></td>
</tr>
<tr>
<td>e</td>
<td>毒</td>
</tr>
<tr>
<td>o</td>
<td>學覺 a 學覺</td>
</tr>
<tr>
<td>ai</td>
<td>逐 e 覆</td>
</tr>
<tr>
<td>o</td>
<td>縮</td>
</tr>
<tr>
<td>a</td>
<td>笛</td>
</tr>
<tr>
<td>e</td>
<td>灶</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>通合一冬</td>
<td></td>
</tr>
<tr>
<td>江開二江</td>
<td></td>
</tr>
<tr>
<td>通合三東</td>
<td></td>
</tr>
<tr>
<td>通合三東</td>
<td></td>
</tr>
<tr>
<td>梗開四青</td>
<td></td>
</tr>
<tr>
<td>流開三尤</td>
<td></td>
</tr>
<tr>
<td>效開一箇</td>
<td></td>
</tr>
<tr>
<td>效開二箇</td>
<td></td>
</tr>
</tbody>
</table>

There are basically two types of literary pronunciation: high vowels /i, u, y, iu/ and low vowels /au, iau/. The colloquial pronunciation yields low vowels /a/ (青江) /ai/ (東) and mid vowels /œ/ (江東) /e/ (冬尤豪). The reflexes /e, a, œ/ reflect an interesting parallelism between 覺 *uk (*œuk) and 幽 *ug (*œug) in colloquial layer. This parallelism is not surprising since they share the vowel quality in the OC forms.

2.2.3. THE 沃 (WO) CATEGORY

<table>
<thead>
<tr>
<th>沃 (=藥)</th>
<th>*ok (*œuk)</th>
</tr>
</thead>
<tbody>
<tr>
<td>lit.</td>
<td></td>
</tr>
<tr>
<td>i 衝</td>
<td></td>
</tr>
<tr>
<td>au 爆築罩</td>
<td></td>
</tr>
<tr>
<td>iau 灘</td>
<td></td>
</tr>
<tr>
<td>iau 竅耀掉</td>
<td></td>
</tr>
<tr>
<td>i 激溺 ue 潮</td>
<td></td>
</tr>
<tr>
<td>col.</td>
<td></td>
</tr>
<tr>
<td>œ 鶴鷺 u 鑫</td>
<td></td>
</tr>
<tr>
<td>iœ 藥爵琥雀䭃穢削 ia 雀削</td>
<td></td>
</tr>
<tr>
<td>ia 耀</td>
<td></td>
</tr>
<tr>
<td>iœ 掉</td>
<td></td>
</tr>
<tr>
<td>ia 異</td>
<td></td>
</tr>
<tr>
<td>堂開一唐</td>
<td></td>
</tr>
<tr>
<td>堂開三陽</td>
<td></td>
</tr>
<tr>
<td>效開二箇</td>
<td></td>
</tr>
<tr>
<td>效開三宵</td>
<td></td>
</tr>
<tr>
<td>效開四蕭</td>
<td></td>
</tr>
<tr>
<td>梗開四青</td>
<td></td>
</tr>
</tbody>
</table>
It is noteworthy that there is much uniformity in the colloquial layer: /ɔ/ (唐江冬, Grade 1 and 2) and /iɔ/ (陽蕭 Grade 3 and 4). The 宵 (*ouk) category also witnesses this development. But there are even earlier colloquial layers that can be detected: /ia/ (陽青) and /u/ (唐冬). If the source forms of the 沃 (*ouk) and 錫 (*ik) categories are low and high front respectively, their common modern reflex /ia/ must be a result of 錫’s merger into 沃, i.e. the breakage of /i/ into /ia/. It is a unique development in southern dialects that the change of the OC high front vowel to the low vowel occurred in the sets of OC rime categories sharing the high front vowel such as 支 (*ig), 錫 (*ik), 耕 (*iŋ) and 脂 (*id), 質 (*it), 臥 (*in).

In the literary layer the development is inverted: the low vowel is raised. /i/ (青陽) is derived from /*ou/ through vowel raising. Since stop endings are lost in Jian’ou, the 梶 (Grade 3 and 4) group derived from 沃(*ouk), 鐮 (*ak), 錫 (*ik) and 覺 (*ouk) merges into /i/ along with the 止 group derived from 支 *e (佳 *ig) and 脂 (*id).

2.2.4. THE 鐮 (DUO) CATEGORY

鐮 *ak (*ak)

lit. col.

u 鐮 ɔ/ɔ 霍  ua 郭  岩合一唐
ɔ 落博鄂薄 ɔ/ɔ 幕 au 落  岩開一唐
iɔ 韶略腳若  岩開三陽
ε 伯額摮魄白拆 ɔ 摯 ia 額拆 a 伯客白  梗開二庚
i 隙 ε 逆  梗開三庚
i 席昔籍譯夕石 iɔ 席席尺炙 ia 隻赤籍  梗開三清
u 路步妒素麪暮 iɔ 路步妒厝 ɔ 錯  遇合一模
a 怕詐壻 ia 嚇  0 霸  假開二麻
i 射 iɔ 惡借 ia 藉夜射借薦  假開三麻
Apart from the high vowels /i/ and /u/ and the mid front vowel /ɛ/ in the literary layer there are basically two types of finals: (1) /ɔ/, /iɔ/, and (2) /a/, /ia/ occurring in the colloquial layer. The first set (the back vowels) results from vowel raising and the loss of stop ending, and the second set (the front vowels) comes about through vowel fronting. In this respect, the 鎬 and 沃 categories possess more variation than the 錫 category. 錫 has only Type 2. The distribution of these two types are given as follows:

<table>
<thead>
<tr>
<th>OC</th>
<th>MC</th>
<th>examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>沃 *auk</td>
<td>青 1 (=錫 1)</td>
<td>ia 萼</td>
</tr>
<tr>
<td></td>
<td>陽 2 (=藥 2)</td>
<td>iɔ 藥爵_receipts_i</td>
</tr>
<tr>
<td></td>
<td>ia</td>
<td>青削</td>
</tr>
<tr>
<td>鎬 *ok</td>
<td>清 1 (=昔 1)</td>
<td>iɔ 席石尺灸</td>
</tr>
<tr>
<td></td>
<td>ia</td>
<td>隻赤籍</td>
</tr>
<tr>
<td></td>
<td>陽 1 (=藥 1)</td>
<td>iɔ 鵲略腳若</td>
</tr>
<tr>
<td>錫 *ik</td>
<td>清 2 (=昔 2)</td>
<td>ia 脊蹟跡</td>
</tr>
<tr>
<td></td>
<td>青 2 (=錫 2)</td>
<td>ia 曆壁</td>
</tr>
</tbody>
</table>

We can see the close resemblance between 沃 and 鎬. In the Shijing and Han periods these two categories were still kept apart, but the Three Kingdoms period (220-280) saw the onset of coalescence. Thus, the merger can be dated no later than the third century.

While the boundary between 沃 and 鎬 as reflected in the 陽 rime has practically disappeared, a much clearer line can still be drawn between 鎬 and 錫, which are realized as back vowels and front vowels respectively. The /ia/ reflexes in 鎬 are an indication of diffusion into the 錫 category.

The /iɔ/ as a reflex of the 鎬 category is not only found in Jian’ou but also in other Min dialects. It is in fact a unique trait of Min dialects, a trait that shows the merger of 鎬 and 沃. In contrast, words of the 清 rime derived from 鎬 and 錫 have partially fallen together and are realized as /ia/ in the Kejia and Nanchang dialects representing another type of southern dialects.

The realization of 清 1 as /iɔ/ and 清 2 as /ia/ is doubtless a pre-
Qieryn phenomenon reflecting the distinction of their respective sources (i.e., 鐲 and 錫) (see Huang 1982: 181, Chang 1984: 456 and Chang 1987 & 1990). As revealed in poetic riming patterns, it was not until Jin times (265-439) that some rimes in the 鐲 category began to merge with the 錫 category gradually approaching the phonological system of Qieryn (Zhou 1983: 109). (See Section 5 for a detailed treatment of the evolution of 沩，鐲 and 錫).

2.2.5. THE 錫 (XI) CATEGORY

錫 *ek (*ik)

<table>
<thead>
<tr>
<th>lit.</th>
<th>col.</th>
<th>x.</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a 隔册諜 iá 摘 ē 隔策</td>
<td></td>
<td>삼개이경</td>
<td></td>
</tr>
<tr>
<td>i 晧碧</td>
<td>ia 晧</td>
<td>梗開三庚</td>
<td></td>
</tr>
<tr>
<td>i 孜鬬蜴</td>
<td>ia 孜蹤跡 ie 搴</td>
<td>梗開三清</td>
<td></td>
</tr>
<tr>
<td>i 疫</td>
<td>ia 疫</td>
<td>梗合三清</td>
<td></td>
</tr>
<tr>
<td>i 曆壁歴敀劈錫</td>
<td>ia 曆壁 ie 劈 ē 錫</td>
<td>梗開四清</td>
<td></td>
</tr>
<tr>
<td>i 螢 u 刺賜</td>
<td></td>
<td>止開三支</td>
<td></td>
</tr>
<tr>
<td>i 帝繼糾</td>
<td></td>
<td>蟹開四齋</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ai 債</td>
<td>蟹開二佳</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ua 畫</td>
<td>蟹合二佳</td>
<td></td>
</tr>
<tr>
<td>i 溢</td>
<td></td>
<td>臻開三貫</td>
<td></td>
</tr>
</tbody>
</table>

Unlike the 鐲 and 沩 categories this category does not contain the back vowel /o/. The 梗 rime group shows a clear-cut stratal distinction: /a, ia, ie, ē/ (collóquial) and /i, u/ (literary). If /*ik/ is taken as the source form, the colloquial reflexes are derived from simply vowel-lowering or breaking /i/ into a diphthong with a concomitant loss of the stop ending. From the reflexes /ia, ie, ē/ as well as /i/ we can see that the grade distinction has been largely neutralized.
2.2.6. THE 質 (ZHI) AND 物 (WU) CATEGORIES

質  *et (*it)

lit.        col.         x.

i 患 y 橘   （臻合三訳）
ε 密 潤栗 ie 截   （臻開三真）
ue 血穴       uai 血   （山合四先）
ie 節迭結鐵捏 e 節   ai 節 ia 挑   （山開四先）
ai 自肆 i 自鼻利（止開三脇）

y 季穂       （止合三脇）
（蟹開二皆）

ai 屈

y 計 y 戾   ai 替   （蟹開四齊）

y 恽

i 即抑       （曾開三蒸）

The 質 category matches the 脂 category in the development of finals. For the distinction between colloquial and literary readings two sets of contrasts can be detected. In one set represented by the rime groups 山 and 蟹, the 質 category gives rise to /ai, ia/ through diphthongization in the colloquial layer as opposed to /ie, e, i, u/ in the literary layer. In another set represented by 蟹 the stratal distinction is realized as /ie, ε/ (col.) and /i/ (lit.). For 止 /u/ is more literary than /i/ in that the former represents a further development of /i/.

物  *et (*et)

lit.        col.         x.

o 骨     崇合一魂
o 蟹     崇合三譚
o 物佛勿 i 物   崇合三文

i 乞       （臻開三殷）
i 筆       （臻開三真）

y 氣     yε 氣暨   （止開三微）

y 貴     （止合三微）
Like 之 and 微 the 物 category yields /o, ye, uε/ in the colloquial layer and /i, u, y/ in the literary layer. The distinction between 質 and 物 drawn on the basis of the rime patterns in Shijing was maintained well toward the end of Han times. But these two categories coalesced into one category in the Three Kingdoms period (Zhou 1983: 109). If we look at the reflexes of these two categories in the colloquial layer we will find that they are still kept apart. This may be a trace of pre-Qieyun distinction.

2.2.7. THE 月 (YUE) CATEGORIES

月 *at (*at)

lit.

u 櫃 ua 活 o 末奪

a 薩撤 o 易

a 睦 ai 八

yε 說雪絕

i 摯 ie 子

ua 罰伐日 uai 罰

ie 揭蝋訕 io 諴

yε 決缺訣

ie 潔蔑截

ai 遠

y 剣
A unique feature of the 月 category is that many rimes do not reflect the MC 開/合 distinction registered in the rime book, Guangyün. The 開/合 distinction is lost in such rimes as 寒/桓, 仙 and 元 in the colloquial layer. To be more exact, many native Min words with the rounded medial /u/ or /y/ in this category as well as many other categories are derived from the MC 開口 rimes. For example, the reflexes of the 開口 rimes such as 寒, 山, 仙, 元 and 泰 all have the rounded medials /u, y/ in the colloquial layer. Unlike the 開口 rimes the 合口 rimes do have an rounded element occurring as the main vowel /o/ or a medial like /u/ or /y/.

In general, the nucleus in a colloquial syllable is mid vowels /e, o/ whereas a literary syllable is represented by low vowels /a, ai, ua, au/ or high vowels /i, u, y/. The only exception is 開先 (Grade 4) where /ai/ is the colloquial pronunciation, instead.

It is noteworthy that the reflex /ɔ/ in the 歌 and 元 categories is echoed in the 月 category in such rimes as 桓, 寒, 開, 元 and 戈 in the literary layer. In this respect, 歌, 元 and 月 seem to behave differently from 魚, 鐸 and 陽, although both groups share */ɔ/ in the reconstructed value.

Luo and Zhou (1958) sets the rime group 蟹 apart as an independent category designated as 祭 on the grounds that the words in this class all occur in Tone III (i.e. 去 声). This treatment is different from Wang (1985)
which subsumes 祭 under 月. The disagreement is a corollary of their different views of the OC tone system. Wang regards the III words as being derived from other OC tones.

2.2.8. THE 盍 (HE) AND 緝 (QI) CATEGORIES

盍 *ap (葉 *ap)
lit. col. x.
ua 乏 (咸合三凡)

ε 塌 盍 a 榻塌臘 咸開一談
e 窮壓 a 狩插雲 ia 插 咸開二咸
e 壓 狎 a 狩壓 咸開二鈡
e ie 姜接頁鸞 ia 葉鐙 咸開三鹽
ie 莊疊謬碟 a 疊磔疊疊 ia 莊 咸開四添

The colloquial reading yields /a/ and /ia/ (Grade 234) keeping the low quality of the original form. The literary reflexes /ε, ο/ come about through raising and/or fronting and /ε/ is diphthongized as /ie/ (Grade 34).

緝 *əp (*əp)
lit. col.
a 蛋踏拉 ο 蛋鴞合鴞 ə 拉唱 咸開一魚
a 箧 (咸開二咸)
i 級急泣十入笠溼 iə 拾 ε 笠澀 ie 溼急 ə 什 深開三侵

In this category the colloquial layer yields mid vowels /ə, ο, ε, e/ with or without a medial, and the literary layer the low vowel /a/ or the high vowel /i/.

2.3 THE FINALS WITH NASAL ENDINGS
2.3.1. THE 煮 (ZHEN) CATEGORY

煮 *əŋ (*ŋ)
lit. col.
aŋ 燈增朋箏 咸開一登
The rime groups 曾 and 梃 (開口) in this category derive their present reflexes by breaking the source form into low diphthongs /aiŋ/, /aŋ/ in the colloquial layer. In contrast, the literary forms /εiŋ/, /iŋ/ of the 蒸 rime arise through vowel fronting.

There are two types of reflexes for the 東 rime: /œŋ/, /œŋ/. The 東 rime in Xiamen has at least three types of reflexes, /œŋ/ (lit.), /aŋ/ and /iŋ/ (col.). The front final /œŋ/ in Jian'ou corresponding to /iŋ/ can be regarded as belonging to the colloquial layer whereas the back final /œŋ/ is a literary pronunciation representing the Tang standard language that still prevails in modern dialects.

We can see that in the colloquial layer 登 and 蒸 as well as 開耕 form one class as opposed to 東 and 合耕. However, in the literary layer 蒸 constitutes a class by itself. This grouping seems to reflect the evolution of the 蒸 category. Zhou (1983: 97-98) shows that the Wei Jin times witnessed the split of this category into the 登 class (登 and 耕) and the 蒸 class (蒸). The 東 rime shifted to the 冬 category as early as the Eastern Han period (25-220).

2.3.2. THE 東 (DONG) AND 冬 (DONG) CATEGORIES

東 *œŋ (*əŋ)
lit. col.
œŋ 同工公通童翁
œŋ 噴公翁 iaŋ 噴
œŋ 縫冢恐蹤
œŋ 恐容庸龍重種蹤
œŋ 江邦項巷窗
œŋ 窗
œŋ 粽
冬中 (*œŋ) < (*əm)
lit. col.
œŋ 通合一東
œŋ 通合三鍾
œŋ 江開二江
(通合一東)
It has long been known that in the Shijing period the 冬 category was
different from the 東 category, since 冬 often rimed with 蒸 and 侵 whereas
東 often went with 陽 in riming. (Luo and Zhou 1958: 33) Note that Wang
(1958: 99) groups 冬 under 侵. His classification is based on the evidence
that 冬 has few words and rimed with the 侵 words as many as five times in
Shijing. However, for purpose of exposition I follow Luo and Zhou (1958) in
taking 冬 as an independent category.

冬 and 東 still kept apart in Wei Jin times (220-420) merged in the Liu
Song period (420-479). To the best of my knowledge the distinction between
them do not survive in modern dialects. Jian’ou is no exception in this
respect.

A quick look at the reflexes of 冬 and 東 shows that there is practically
no distinction between them. For these two categories the stratal contrast is
between the front final /œŋ/ (col.) and the back final /ŋ/ (lit.). However,
the 東 category has additional reflexes /ŋ, iŋ/ in the colloquial layer.

2.3.3. THE 陽 (YANG) CATEGORY

陽  *aŋ (*aŋ)
lit.  col.
uaŋ皇黃光汪洋廣
aŋ昂壯抗
uaŋ王望房枉罷罔望望
aiŋ醜
uaŋ橫
œŋ兄永泳
εiŋ明慶迎英兵卿

宕合一唐
宕開一唐
宕合三陽
宕開三陽
(梗合二庚)
梗開二庚
梗開二庚
梗合三庚
梗開三庚
There are two sets of stratal distinction in the 陽 category. For the 宕 group the contrast is between /uaŋ, aŋ, aiŋ/(literary) and /aŋ, iaŋ/(colloquial). For the 柯 group the contrast is between /eiŋ, oeiŋ/(literary) and /aŋ, iaŋ, aiŋ, œiŋ, iœŋ/(colloquial).

Diachronically the merger of the 柯 group with the 耘 category started off in the Western Han period and reached its peak in the Eastern Han Period and tapered off in the Three Kingdoms period (Luo and Zhou 1958: 34). From the colloquial reflexes of the 柯 group we can see that the merger may have been thwarted since words like 影, 猛, 蠕 and 孟 did not merge with the 耘 category. It should be noted that the 耘 category had to undergo vowel lowering before it could merge with the 柯 words derived from the 陽 category.

Words of the 宕 group along with the words of the 柯 group that were left behind underwent vowel raising, i.e. */œŋ/ > /œŋ/. The raising could not have occurred earlier; otherwise, the 柯 words would have been raised as well. Apart from these newly emerging pronunciations the 宕 rime group has another set of pronunciation such as /aŋ, aiŋ, uaŋ/ in the literary layer which was introduced later than the Three Kingdoms period into Jian'ou from a phonological system where vowel raising did not take place.

2.3.4. THE 耘 (GENG) CATEGORY

<table>
<thead>
<tr>
<th>耘</th>
<th>*eŋ (*iŋ)</th>
</tr>
</thead>
<tbody>
<tr>
<td>lit.</td>
<td>col.</td>
</tr>
<tr>
<td>εiŋ 冷</td>
<td>aiŋ 生甥冷牲省 aŋ 生牲省 梗開二庚</td>
</tr>
<tr>
<td>εiŋ 驚平枰命敬</td>
<td>iæŋ 驚平坪命</td>
</tr>
<tr>
<td>εiŋ 櫻</td>
<td>aiŋ 耘爭鬱櫻讙 aŋ 莘 梗開二耕</td>
</tr>
<tr>
<td>œiŋ 營 εiŋ 傾頗潧</td>
<td>iæŋ 營</td>
</tr>
<tr>
<td>εiŋ 晶嚥城程令井精</td>
<td>iæŋ 輕聲偵名城程羸領令 梗開三清</td>
</tr>
<tr>
<td>εiŋ 情 iŋ 嬴</td>
<td>aiŋ 晴靜 iæŋ 餅情 aiŋ 并 梗開三清</td>
</tr>
</tbody>
</table>
In the colloquial layer the source form was lowered into /aŋ/ or /aiŋ/.
Like the 錫 category with which it shares the vowel height and the homorganic ending the 耕 category has the low vowel /aŋ/ but not /aiŋ/ in its modern reflexes. But what motivated the lowering? Since the 陽 category had low vowels to start with, it is reasonable to assume that the 耕 category underwent vowel lowering under the influence of the 陽 category and was pulled into its domain.

Over the colloquial layer represented by the 耕 category as well as the 梗 words derived from the 陽 category was superimposed a set of literary pronunciation, i.e. /ɛiŋ/ (開口) and /œŋ/ (合口) which more or less preserve the vowel height of the source form. Following the same line of reasoning the implanting of the literary layer must have taken place after the merger of the 梗 words of the 陽 category with the 耕 category.

2.3.5. THE 真 (ZHEN) and 文 (WEN) CATEGORIES

真 *en (*in)

lit.  col.
ɛiŋ 尹  œŋn 束旬箠  致合三諄
ɛiŋ 珍申因頻麟神陳塵仁 iŋ 仁  aŋn 靈 yiŋ 伸 œŋn 塵  致開三真
ɛiŋ 聚晉印信蘭  aŋ 靈用蘭  yiŋ 淵炫  致開三真
ɛiŋ 眸  yiŋ 淵炫  山合四先
ɛiŋ 田年 iŋ 天煙堅絃年扁佃  aŋ 田塚 yiŋ 眸  山開四先
iŋ 騙演 (山開三仙)

Just as 脂 (*id) differs from 微 (*əd) in the absence of /ə/, so the lack of /œŋ/ tells 真 (*en) from 文 (*ən). It is amply clear that the vowel height accounts for the parallel development of 脂 and 真, on the one hand, and 微
and 文, on the other.

Although 真 (*in) and 文 (*ən) differ with respect to the modern reflex /əŋ/, the dividing line between them is clearly drawn in some rimes but becomes blurred in others. For example, 殷 (< 真 *in) and 殷 (< 文 *ən) are realized as a distinction between the unrounded /aiŋ/ and the rounded /yiŋ, oəŋ/. However, the distinction between 真 1 (< 真 *in) and 真 2 (< 文 *ən) is obliterated due to rounded overlapping.

In global terms the stratal distinction lies in vowel height. The literary pronunciation is realized as /eiŋ, iŋ/ as contrasted with the colloquial pronunciation /aiŋ, yiŋ, oəŋ/. 真 (*in) and 文 (*ən) are neutralized in the literary layer.

文 *ən (*ən)
lit. col.
огда 村昆溫昏門本分 oəŋ 噴 iŋ 存 aiŋ 奔豚 篱塢合一魂
огда 吞望 yiŋ 根分 aiŋ 恨恩 篱開一痕
eiŋ 芦殷勤 yiŋ 齁近 oəŋ 腐芹芹
огда 吃遵 oəŋ 允菌唇倫馴順 篱開三殷
eiŋ 彬聞晨忍 oəŋ 銀 yiŋ 韌 aiŋ 聞 篱開三眾
огда 肆文蚊 oəŋ 軍君雲云 uaiŋ 焚 篱合三文
огда 扮 aiŋ 鋳限眼 山開二山
uiŋ 鰲 (山合二山)
iŋ 先典奠 aiŋ 先殿 (山開四先)
aiŋ 頒 (山開二刪)

The 文 category has five sets of reflexes: (1) /əŋ/, (2) /uiŋ, yiŋ/, (3) /oəŋ/, (4) /aiŋ, ai/ and (5) /eiŋ, iŋ/. (1), (2) and (3) and (4) occur in the colloquial layer whereas (5) is present in the literary layer. /iŋ/ as a reflex of 蟹開四齊 is a step forward of /eiŋ/.

As the colloquial reflexes show, there is much in common between the 文 and 元 categories except that /oəŋ/ is absent in the latter. The presence of /əŋ/ distinguishes 文 and 元 from 真.

The difference between 文 and 真 may lie in the presence of the round-
edness of the vowel. Wang (1958: 97) observes that there is a symmetric patterning in the vowel development: 文 is related to 微 (rounded) just as 真 is linked to 脂 (unrounded). Each set is in accord in roundedness.

One can detect some trace of this roundedness in the 文 category. (see Chang 1989b) There is a set of words such as 根 痕 恩 (開痕), 斤 芹 筋 勤 殷 近 (開殷) and 巾 銀 忍 (開真) which have lost their rounding element and merged into the 真 category in a majority of dialects. However, the Quanzhou (泉州) variety of Southern Min still keeps the rounded vowel realizing all the words as /un/ in colloquial pronunciation. In Jian’ou more colloquial words like 斤, 芹, 巾, 近, 根 and 痕 have rounded vowels while learned expressions like 殷, 勤 and 忍 have taken on the unrounded vowels. Surely the change from unrounded vowels to rounded ones can not be completed overnight; it proceeds in a lexically gradual manner. (Wang 1969). The rate of change may be conditioned by the frequency of lexical occurrence.

2.3.6. THE 元 (YUAN) CATEGORY

元 *an (*an)

lit. col.

uaŋ 桓 aiŋ 漫

uiŋ 管官般團盤亂卵 yiŋ 暖團完丸

aiŋ 看刊但 aiŋ 岸

uiŋ 拾單寒欄早按幹汗傘

aiŋ 間閣間東荅編

uiŋ 山産

aiŋ 髪宸還環

uiŋ 還 uiŋ 撰關彎 yiŋ 還環關彎

aiŋ 顏蜃慢雁

uiŋ 刪 iaŋ 潤

aiŋ 鬆頰

uiŋ 軟 yiŋ 軟圓沿鉛川穿院 uiŋ 痊

aiŋ 螞 aiŋ 剪

uiŋ 螞鱗

aiŋ 挽晚飯萬

uiŋ 爱 yiŋ 圍猿冤晚飯願 uiŋ 宛挽
In general, three sets of reflexes can be identified for the 元 category: (1) /ɔp/, (2) /uŋ, yŋ/, (3) /aŋ, aiŋ, iŋ/. The first set corresponding to /ŋ/ in Xiamen occurs almost always in the 开口 words. This reminds us of the /ɔ/ reflex in the 歌, 月 and 𢄏 categories which share the low vowel */a/ in the source form. The second set with a rounded medial occurs in 開口 and 合口 words, implying that the distinction between 開口 and 合口 is neutralized in Jian’ou as well as other Min dialects. These two sets belong to the colloquial layers. In contrast, the third set preserves the low vowel */a/ in the source form. It belongs to the literary layer imported from an external system. /ŋ/ is derived from /aŋ, aiŋ/ through vowel raising.

2.3.7. THE 侵 (QIN) AND 諫 (TAN) CATEGORIES

侵 *əm (*əm)

lit. col.

æŋ 南男含貪探 aŋ ñ含 æŋ 感暗
æŋ 杉杉滅銭 aŋ 衶
ɛiŋ 金心深針林琴 iŋ 今琴 æŋ 林 aŋ 森參
ɛiŋ 成鹹 æŋ 三咸
iŋ 潛
iŋ 撰念 æŋ 念
uaŋ 梵凡帆 æŋ 帆
ɛiŋ 秤

The literary layer for this category is represented by /ɛiŋ/ and /iŋ/ whereas the colloquial layer gives rise to /æŋ/, /aiŋ/ and /æŋ/. Since the examples are scanty it is difficult to decide what layer /æŋ/ stands for.
In the 開口 words the colloquial layer yields /aŋ/, /iaŋ/ and /ɔŋ/. On the other hand, the literary layer gives rise to /aiŋ/, /eiŋ/ and /iaŋ/. The 合口 rime brings forth the unrounded vowel in the colloquial pronunciation. Thus, we can see that except for some minor differences 談 and 侵 have merged.

3. VOWEL SHIFTS IN JIAN’OU — AN OVERVIEW

Since finals fall into natural classes of phonological opposition one must not lose sight of the general patterns of the development. In 3.1. and 3.2. we arrange the OC finals in 11 groups in terms of vowel height; that is, the finals in each group share the vowel height and have the homorganic consonantal endings. The modern reflexes are given to the right of the arrows; the reflexes of 開口 and 合口 rimes are separated by a comma. The numerals in parentheses indicate the MC grade distinction of a final.\(^{(8)}\)

3.1. THE COLLOQUIAL LAYER

If Li’s reconstructed OC system (Li 1971) is assumed, we can see that

\(^{(8)}\) It should be clear from the following table that in the majority of cases it is very difficult to reconcile the development of finals in Jian’ou with MC grade distinction. It is of course legitimate to project the MC grade distinction back to the OC final system, as Li 1971 and Wang 1985 did, but given the incongruity of southern dialects and the MC system in grade distinction an interesting question arises as to whether the incongruity is attributable to an old system other than those traditionally posited.
Jian’ou has undergone a chain of vowel shifts in the colloquial layer which are itemized in the following table:

1. 支 (佳 *ig), 锡 (*ik) and 耕 (*iŋ).
   支 (佳 *ig) → ai (234) ia (3) ye (3)
   锡 (*ik) → ai (4) ia (234) ie (34) e (24) a (2)
   耕 (*iŋ) → aŋ (234) ią (34) aŋ (234)

2. 脂 (*id), 質 (*it) and 真 (*in).
   脂 (*id) → e (34) ai (34) ye (23) a (4)
   質 (*it) → e (3) ai (24) ie (3) ia (4), uai (4)
   真 (*in) → œŋ (3) aŋ (34) yŋ (34), œŋ (3) yŋ (4)

3. 侯 (*ug), 屋 (*uk) and 東 (*ug).
   侯 (*ug) → e (13) au (1), iu (3)
   屋 (*uk) → e (1) ɔ (2) a (2) u (2),
   e (1) ɔ (1) o (3) i (3)
   東 (*ug) → œŋ (2) aŋ (2), œŋ (13) ią (1)

4. 幽 (*æug), 覺 (*æuk) and 冬中 (*æn).
   幽 (*æug) → e (123) ɔ (12) au/iau (3) y (2) a (2)
   覺 (*æuk) → e (123) ɔ (2) au (2) a (24),
   e (1) ɔ (3) ai (3)
   冬中 (*æn) → œŋ (3)

5. 之 (*æg), 職 (*æk) and 蒸 (*æŋ).
   之 (*æg) → o (13) e (23) ue (1) ai (2), ɔ (1)
   職 (*æk) → o (12) e (123) ie (3) ɔ (2) a (1)
   ai (2), ɔ (1)
   蒸 (*æŋ) → aŋ (123) aŋ (2), œŋ (23) œŋ (3)

6. 微 (*æd), 物 (*æt) and 文 (*æn).
   微 (*æd) → o (3) ue (1) ye (1) ai (2), ɔ (13) ye (3)
   物 (*æt) → o (13) ue (1), ye (13) i (3) ue (3)
   文 (*æn) → œŋ (12) œŋ (3) yŋ (13) aŋ (1234),
   œŋ (13) œŋ (13) yŋ (13) uŋ (2) ią (1)

7. 細 (*æp) and 侵 (*æm).
   細 (*æp) → ɔ (1) iɔ (3) o (3) e (3) ie (3) ue (1)
侵 (*əm) → ㄩ (1) ㄕ (134) ㄑ (123), ㄩ (1)

8. 魚 (*əg), 鐸 (*ək) and 陽 (*əŋ).
    魚 (*əg) → ㄧ (13) ㄕ (3) ㄨ (1) ㄝ (1) ㄛ (1)
    鐸 (*ək) → ㄧ (3) ㄕ (12) ㄛ (1) ㄗ (23) ㄚ (2),
               ㄛ (1) ㄛ (1) ㄧ (1)
    陽 (*əŋ) → ㄩ (1234) ㄧㄩ (23) ㄕ (123) ㄧㄩ (23) ㄕ (2),
               ㄩ (3) ㄧㄩ (3) ㄧㄩ (3)

9. 宵 (*əug) and 沃 (*əuk).
    宵 (*əug) → ㄕ (1) ㄧ (3) ㄨ (34)
    沃 (*əuk) → ㄕ (12) ㄧ (34) ㄚ (34) ㄨ (1), ㄧ (1) ㄨ (1)

10. 歌 (*ər), 月 (*ət) and 元 (*ən).
    歌 (*ər) → ㄩɛ (13) ㄨɛ (123) ㄧɛ/a (3) 嗄 (2),
               ㄩɛ (3) ㄨɛ/ㄚ (1)
    月 (*ət) → ㄩɛ (13) ㄨɛ (12) ㄧɛ/ɛ (3) ㄧ (34) ㄚ (4) ㄛ (1),
               ㄛ (123) ㄨɛ/yɛ (3)
    元 (*ən) → ㄧㄣ (3) ㄨㄣ (123) ㄧㄩ (2) ㄕ (1) ㄕ (1),
               ㄧㄣ (1234) ㄨㄣ (123) ㄕ (13) ㄧㄣ (2)

11. 蕃 (*əp) and 談 (*əm).
    蕃 (*əp) → ㄚ (124) ㄧㄩ (234)
    談 (*əm) → ㄕ (134) ㄧㄩ (3) ㄕ (1) ㄧㄤ (123), ㄧㄣ (3)

In the following discussion the first member will be used to cover all the members in each group; e.g. the 侯 group means 侯, 屋 and 东. The high front vowel represented by the 支 group (1) and the 脂 group (2) has shifted to the low vowel /a/ or the mid front vowel /ɛ/. On the other hand, the low vowel typified by the 魚 (8), 宵 (9) and 蕃 (11) groups is raised yielding /ɔ/, /ɛ/ or /o/ in contrast to another set of reflexes /a/ where the low vowel in the source form remains unchanged.

The low vowel in the 歌 group (10) diverges from its counterpart in the 魚, 宵 and 蕃 groups in following different paths of development. /*a/ in this group is either realized as /a/ or raised to /ɛ/ probably under the influence of the high medial /u/, /y/ or /i/. There is another set of reflexes showing asymmetric distribution. The /o/ as a reflex of 月 and 元 categories
occurs in the colloquial layer, but it belongs in the literary layer when derived from 歌. (9)

The high back vowel in the 侯 (3) and 幽 (4) groups develops into mid vowels /e, œ/ or /œ y/ when followed by a nasal ending. In another set of reflexes it gives rise to /a/ through two-step lowering. The development of these two groups shows divergence in Min. In Southern Min (e.g. Xiamen) both 屋 and 幽 are realized as /a/ in the colloquial layer, whereas in Eastern Min (e.g. Fuzhou) only 幽 keeps /a/. In Northern Min (e.g. Jian’ou) we find even fewer of the reflexes of /a/.

The mid central vowel in the 之 (5) and 微 (6) groups yields /o/ through backing, /ɛ/ and /œ y/ through fronting and /i/ through front and raising. There are also instances, especially the nasal vowels, where the reflex is /a/. Unlike 之 and 微 the mid central vowel in the 緀 group (7) patterns with the 魚 group in deriving /ɔ/ and /a/. This digression may be attributed to the effect of the bilabial ending of the syllable.

The main development of the finals in the colloquial layer as discussed above can be collapsed as follows: (10)

1. *i (-g/k/t) 支錫耕) ⟷ yɛ, ie, e, ai(ŋ), ia(ŋ), a(ŋ)
2. *i (-d/t/n 脂質真) ⟷ e, œyŋ, ai(ŋ), yɛ, yi(ŋ), a, ia, ie
3. *u (-g/k/t) 侯屋東) ⟷ e, œyŋ, œ, a(ŋ), ai(ŋ), i, u
4. *əu (-g/k/t) 幽覺冬) ⟷ e, œyŋ, œ, (i)au, a, ai, y
5. *ə (-g/k/t) 之職蒸) ⟷ o, œ(ŋ), ai(ŋ), a(ŋ), ɛ, ie, ue, œyŋ
6. *ə (-d/t/n 微物文) ⟷ o, œ(ŋ), yɛ, yi(ŋ), ue, ui(ŋ), ai(ŋ)
7. *ə (-p/m 緀侵) ⟷ o, œ(ŋ), io, o, ie, (u)ɛ, aiŋ, aŋ
8. *ə (-g/k/t) 魚鋤陽) ⟷ o, œ(ŋ), iœ(ŋ), a(ŋ), ia(ŋ), ue, ɛ
9. *au (-g/k 宵沃) ⟷ œ, iœ, u, ia, e
10. *ə (-r/t/n 歌月元) ⟷ o, œ(ŋ) yɛ, yi(ŋ), ue, ui(ŋ), ia(ŋ), ie/ia/ε
11. *ə (-p/m 艋談) ⟷ a(ŋ), ia(ŋ), œ(ŋ), ai(ŋ)

(9) The contrast between /i/ and /e/ is neutralized when preceded by a vowel. For example, /uiŋ/ and /yiŋ/ are represented as /ueŋ/ and /yeŋ/ in Norman (1976). The same applies to /e/ and /ɛ/; /ie/ corresponds to /iɛ/ in Norman (1976).

(10) The element in parentheses is optional. The distinction between /o/ and /ɔ/ is neutralized when followed by /-ŋ/. Therefore, the notation /œŋ/ is used in the sense that there is enough phonological space for the main vowel to vary from /ɔ/ to /o/.
One can detect a vowel reshuffling or rather a great vowel shift in Jian'ou where, in global terms, the (front or back) high vowels change into mid or low vowels, the low vowels are pushed into mid or high vowels, and the mid central vowel moves into the front or back position. There are many instances of merger of high vowel */i/, */u/ into low vowel */a/ yielding /ai/, /ia/ and /a/ which may be the residues left by the great vowel shift. Some modern reflexes show neatly delimited distribution. /ɔ/ and /o/ cannot be traced back to the high vowel */i/ (1, 2) whereas /œy/ cannot be derived from the low vowel */a/ (8, 9, 10, 11).

In establishing dialect layers a notion of phonological space is needed to account for the preservation of distinction in phonological categories. (Wang 1971: 285-186 and Maddieson 1984: 136-155) Take the relationship between the 東 (*uŋ) category and the 陽 (*aŋ) category in Xiamen. In the colloquial layer */uŋ/ has changed to /aŋ/, which jostles */aŋ/ out of its original position; */aŋ/ in turn becomes /iu/ or /ŋ/. In the literary layer, however, both */uŋ/ and */aŋ/ are realized as /ɔŋ/ showing the merger of these two categories. In actuality, the situation is much more complicated since there are also a few words of the 陽 category which are realized as /aŋ/ in colloquial layer. This /aŋ/ reflex may be a relic form dating back to the OC period when 東 and 陽 were still riming with each other in southern dialects evidenced in such works as Huai Nan Zi, Lao Zi, Yi Lin and Chu Ci. (Wang 1958: 93, Luo and Zhou 1958: 33 and Ting 1974: 1-11) Here are some examples of the 陽 category which yielded /aŋ/ in colloquial pronunciation: 涼, 香, 鄉, 榮, 掌, 放, 網 and 望. Thus, /aŋ/ and /iŋ/ or /ŋ/ represent two systems in the colloquial layer as opposed to /ɔŋ/ in the literary layer.

The occurrence of /ai/ as a reflex of the MC 蟹 rime group which is in turn derived from the OC non-nasal high mid finals (i.e. 支, 錫, 脂, 質之, 職, 微 and 勿) and the 月 category will be discussed in Section 4.

3.2. LITERARY LAYER

It is abundantly clear that the literary layer shows much more homogeneity than the colloquial layer and closer resemblance to northern Chinese, as in
1. 支 (佳 *ig), 錫 (*ik) and 耕 (*iŋ).
支 (佳 *ig) → i (34) u (3)
錫 (*ik) → i (34) u (3), i (3)
耕 (*iŋ) → εiŋ (234) iŋ (3), œŋ (34) εiŋ (3)

2. 脂 (*id), 質 (*it) and 真 (*in).
脂 (*id) → i (34) u (3) ai (2)
質 (*it) → i (34) u (3) y (4) ε (4) ie (4),
ie (4) y (4)
真 (*in) → εiŋ (34) iŋ (34), εiŋ (34)

3. 侯 (*ug), 屋 (*uk) and 東 (*üŋ).
侯 (*ug) → iu (3), u (3) y (3)
屋 (*uk) → y (2), u (13) y (3)
東 (*üŋ) → œŋ (2), œŋ (13)

4. 幽 (*œug), 覺 (*œuk) and 冬中 (*œŋ).
幽 (*œug) → au (1) iau (123)
覺 (*œuk) → au (12) iau (2) u (13) i (4) iu (3),
u (13) y (3) i (3)
冬中 (*œŋ) → œŋ (13)

5. 之 (œg), 職 (œk) and 蒸 (œŋ).
之 (*œg) → i (3) u (3) ai (1)
職 (*œk) → i (3) u (3), y (3) u (3)
蒸 (*œŋ) → εiŋ (3) iŋ (3)

6. 微 (*œd), 物 (*œt) and 文 (*œn).
微 (*œd) → i (3) y (3), i (3) y (13)
物 (*œt) → ai (1), u (1) y (13) i (3)
文 (*œn) → εiŋ (3) iŋ (4)

7. 締 (*œp) and 侵 (*œm).
締 (*œp) → a (12) i (3)
侵 (*œm) → an (12) εiŋ (13) iŋ (34), uaiŋ (3)

8. 魚 (*œg), 鐸 (*œk) and 陽 (*œŋ).
魚 (*œg) → a (23) ia/ie (3), u (13) y (3)
鐸 (*œk) → a/ia (2) i (3) ε (23), u (1)
陽 (*œŋ) → εiŋ (234) aiŋ (3) an (1), uan (123) œŋ (3)
9. 宵 (*aug) and 沃 (*aouk).

宵 (*aug)  →  au (1234) iau (234)
沃 (*aouk)  →  i (24) au (2) iau (34) uoe (4)

10. 歌 (*ar), 月 (*at) and 元 (*an).

歌 (*ar)  →  i (3) ɔ (1) a (123),
         ɔ/ɔ (1) ɔ (3) y (3)
月 (*at)  →  i (34) ɔ (1) ɔ (3) a (12) ai (12),
         ie (34) iu (3), u (1) y (134),
         ua (123) uai (1) ye (234)
元 (*an)  →  iŋ (34) aŋ (123) aiŋ (1234),
         aiŋ (1) uaiŋ (123)

11. 蔚 (葉 *op) and 話 (*am).

蔚 (葉 *op)  →  ε (12) ɔ (12) ie (34), ua (3)
話 (*am)  →  εiŋ (24) iŋ (34) aiŋ (3), uaiŋ (3)

In contrast to its counterpart in the colloquial layer the 支 (1) and 脂 (2)
groups bring forth non-low vowels in the literary layer: /i, ε, εi, ie, oe, y, u/.
/u/ as a high back vowel must have evolved from /i/ under the influence of
the 精 and 知照 series of initials. The /i/ reflex may not derive directly
from the OC source; rather, it may be a secondary development resulting from
merger with other rimes, especially for the Grade 4 words. There are some
minor cases of diphthongization in the 脂 category, as in /ai/.

The 侯 (3) group yields /u, iu, y/ for the non-nasal finals and /ɔ/ for
the nasal finals. The 幽 (4) and 宵 (9) groups bring about /au, iau, i, u, iu,
y, ɔ/. The mid central vowel in the 之 (5), 微 (6) and 諦 (7) groups are
raised producing /i, u, y/ for non-nasal finals. The reflexes for nasal finals
are /εi, i/ . There are also reflexes such as /ai, a, uai/ resulting from diph-
thongization.

There is a general tendency for the low vowel in the 魚 (8), 宵 (9), 歌
(10) and 蔚 (11) groups to stay in the low position or change into high vow-
els /i, u, y/. However, unlike the 魚 group which has the mid back vowel
/ɔ/ in the colloquial layer the 歌 and 月 categories in the 歌 group (10) take
it as a literary pronunciation.
To summarize, two important points emerge from the above characterization of literary pronunciation. First, the vowels in general do not deviate from their original position in the vowel space. This is not surprising since the reconstruction of the OC final system is mainly based on the literary pronunciation. Second, there is a convergence into the high position especially in the most recent innovation of the literary layer.

4. COMPETING FINALS IN THE RIME GROUP 蟹

I have argued at length elsewhere (Lien 1989) that lexical diffusion is in no conflict with the phenomenon of dialect mixture. I propose a two-stage development for the contact-induced sound change: (1) the initial stage of coalescence of the indigenous and alien strands, and (2) the interaction or rather competition between these two strands which have now been integrated into an interwoven pattern of the entire phonological system.

According to this view linguistic strata that entered a language at different periods will ultimately vie with each other for survival. In the following I will look into the MC rime group 蟹 and see what scenarios are involved in the interaction among a range of various rimes.

The rimes 哈, 泰, 皆, 佳, 夫, 祭, 齊 subsumed under the MC rime group 蟹 each did not develop into a full-fledged class until MC times. They gradually converged into 蟹 by splitting off from the OC categories 支, 錫, 脂, 質, 之, 職, 微, 物 and 月. Except for 月 all these categories involve OC high and mid vowels. As shown in the following table, for ease of exposition the evolutionary history of this rime group is grossly partitioned into three periods (T1, T2 and T3): \(^{(11)}\)

\(^{(11)}\) It is very difficult to pin down the exact date of each period; therefore, T1, T2 or T3 should be best understood in terms of relative (rather than absolute) chronology.
The abscissa stands for time dimensions and the ordinate, the rimes, each of which is made up of lexical items. Although the forms came into the language in different periods of time, they were integrated into and became part and parcel of the phonological system. The values under T1 represent the oldest layer on which the T2 form was overlaid. /ai/ is evidently a result of breakage and lowering and the levelling of various sources into one category.

If we compare Jian'ou and Mandarin, we can see more clearly the interaction between system-internal sound change and contact-induced innovation.
While for 只 and 泰 the T1 forms still exist side by side with the T2 form in Jian’ou, they are altogether eclipsed by the latter in Mandarin. Almost all the Grade 2 rimes (皆, 佳 and 夫) have shed their T1 forms leaving some T1 survivals in 皆 in Jian’ou. The T1 forms in Mandarin have also given way to the T2 form /ai/ except those with the T2 velar initials such as 階, 芥, 居, 界, 疊, 械, 街, 蟹, 解 and 鞋 which underwent further development into /ie/.

An important feature of southern dialects like Min, Yue and Kejia is the preservation of /ai/ in the third and fourth grades as well as the first and second grades as shown in the above table. (Wang 1958: 176). In Northern Chinese, Mandarin included, 祭, 廢 (Grade 3) and 齊 (Grade 4) have merged with the rime group 止 into the forms close to those given under T3. The merger took place no later than the 14th century (ibid. 177). Thus, the forms under T3 represent a still newer layer that stacks over the older layers.

The above stratified phonological developments can be viewed as a synchronic profile of on-going sound change. For 只, 泰 and 皆 there are words that still preserve the T1 forms, words that have been changed into the T2 form, and words oscillating between them. The words in 齊 have practically shed their T1 forms and are moving from the T2 form toward the T3 form. While 佳, 夫 and 廢 still stick to the T2 form, 祭 claims exclusively the T3 form in its domain.

5. COMPETING FINALS IN 沔, 鐵 AND 鍍

This section will present a detailed discussion of the development of finals as reflexes of the OC rime categories 沔, 鐵 and 鍍. This discussion is based on the notion of inseparable correlation of diachronic and synchronic aspects of language.

Following is a table listing the finals as reflexes of 沔, 鐵 and 鍍 categories in four southern dialects: Jian’ou (JO), Xiamen (XM), Nanchang (NC) and Meixian (MX) representing Northern Min, Southern Min, Gan and Kejia. The data are drawn from Beijing Daxue (1989). If there are doublets or even triplets the colloquial forms will be put before the literary forms. A cursory
look at the correlation of modern reflexes with the MC and OC categories will reveal an overall picture of ongoing change of finals. The change is not carried out at the same pace.

<table>
<thead>
<tr>
<th>JO</th>
<th>XM</th>
<th>NC</th>
<th>MX</th>
<th>examples</th>
<th>OC</th>
<th>MC</th>
</tr>
</thead>
<tbody>
<tr>
<td>ia</td>
<td>iak</td>
<td>et</td>
<td>罡</td>
<td>沃 *auk</td>
<td>梗開四青</td>
<td></td>
</tr>
<tr>
<td>ia/io</td>
<td>ia?/iok</td>
<td>iok</td>
<td>iok</td>
<td>削</td>
<td>廖開三陽</td>
<td></td>
</tr>
<tr>
<td>ia/io</td>
<td>ia?/iok</td>
<td>iok</td>
<td>iok</td>
<td>省</td>
<td></td>
<td></td>
</tr>
<tr>
<td>io</td>
<td>io?/iok</td>
<td>iok</td>
<td>iok</td>
<td>藥鑲</td>
<td></td>
<td></td>
</tr>
<tr>
<td>io/iau</td>
<td>iok/iau</td>
<td>ok/ok</td>
<td>ok</td>
<td>燦</td>
<td></td>
<td></td>
</tr>
<tr>
<td>io</td>
<td>iok</td>
<td>iok</td>
<td>iok</td>
<td>疲躍</td>
<td></td>
<td></td>
</tr>
<tr>
<td>u/o</td>
<td>ak/ok</td>
<td>ok</td>
<td>ok</td>
<td>磐</td>
<td>容開一店</td>
<td></td>
</tr>
<tr>
<td>u/o</td>
<td>ak/ok</td>
<td>ok</td>
<td>ok</td>
<td>沃</td>
<td>通開一冬</td>
<td></td>
</tr>
<tr>
<td>io/i</td>
<td>io?/ik</td>
<td>ak</td>
<td>ak</td>
<td>石尺</td>
<td>鐸 *ok</td>
<td>梗開三清</td>
</tr>
<tr>
<td>io</td>
<td>io?/ik</td>
<td>iak/it</td>
<td>it</td>
<td>席</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ia</td>
<td>ia?/ik</td>
<td>ak</td>
<td>ak</td>
<td>隻赤</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ia</td>
<td>ia?/ik</td>
<td>it</td>
<td>it</td>
<td>籍</td>
<td></td>
<td></td>
</tr>
<tr>
<td>io</td>
<td>iok</td>
<td>iok</td>
<td>iak</td>
<td>鶴</td>
<td>容開三陽</td>
<td></td>
</tr>
<tr>
<td>io</td>
<td>io?/iok</td>
<td>iok</td>
<td>iok</td>
<td>略</td>
<td></td>
<td></td>
</tr>
<tr>
<td>io</td>
<td>io?/iok</td>
<td>iok</td>
<td>iok</td>
<td>腳</td>
<td></td>
<td></td>
</tr>
<tr>
<td>io</td>
<td>iok</td>
<td>ok</td>
<td>iok</td>
<td>若</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ia</td>
<td>ia?/ik</td>
<td>iak/it</td>
<td>iak/it</td>
<td>跡</td>
<td>錫 *ik</td>
<td>梗開三清</td>
</tr>
<tr>
<td>ia/i</td>
<td>ia?/it/ik</td>
<td>iak/it</td>
<td>it</td>
<td>脊</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ia/i</td>
<td>ia?/ik</td>
<td>iak</td>
<td>iak/it</td>
<td>壁</td>
<td>梗開四青</td>
<td></td>
</tr>
<tr>
<td>ia/i</td>
<td>a?/ik</td>
<td>it</td>
<td>ak</td>
<td>曆</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The evolution of finals can be examined from the OC and MC vintages points. Let us consider the reflexes of OC categories first. Three strata can be distinguished: S1, S2 and S3 with the leftmost one being the most indigenous stratum. As shown in the following table, S1 sets /ia/ and /a/ shared by 沃 and 鍊 off against /io/ in 鍊, though 沃 has /ul/ representing a separate development. 沃 and 鍊 coalesced into /iə/ or /iə/ in S2. The reflect /iə/ or /iə/ of 鍊 and 鍊 was palatalized into /i/ in S3. The reflex /au/ of 沃 is a
recent innovation imported from Mandarin.

<table>
<thead>
<tr>
<th>S1</th>
<th>S2</th>
<th>S3</th>
<th>OC</th>
</tr>
</thead>
<tbody>
<tr>
<td>a/ia</td>
<td>io</td>
<td>au</td>
<td>沃</td>
</tr>
<tr>
<td>u</td>
<td></td>
<td></td>
<td>*auk</td>
</tr>
<tr>
<td>i/o</td>
<td>io</td>
<td>i</td>
<td>鐵</td>
</tr>
<tr>
<td>j/ia</td>
<td>i</td>
<td></td>
<td>*ok</td>
</tr>
<tr>
<td>a/ia</td>
<td>i</td>
<td></td>
<td>錫</td>
</tr>
</tbody>
</table>

Now let us look into the reflexes of MC categories. It can be inferred from the distinction between 鐵 and 錫 as drawn above that /a/ or /ia/ as a reflex of 鐵 in words like 隻, 赤 and 籍 in JO and XM must be a result of merger into 錫. If Min dialects represent a partial merger of 清 (<鐡) into 清 (<錫), then the merger in NC and MX is complete; that is, all 清 (<鐡) words including 石, 尺 and 席 as well as the words just mentioned are realized as /a/ or /ia/. The word 籍 must have gone through a stage of /ia/ before merging into /i/ as evidenced in the reflexes of Min dialects. The merger of 清 (<鐡) and 清/青 (<錫) into /i/ or even apical vowels as a step forward along with the 曾 rime group is a unique development of northern dialects.

Viewed in overall terms, the three strata (S1, S2 and S3) can be taken as representing three stages, S1 being the earliest stratum. The dynamic synchronic state reflects the diachronic changes of finals. For each category there are coexisting forms in competition with each other. For 沃 in Min dialects /ia/ occurs hand in hand with /io/ inherited from a stratum shared by Gan and Kejia dialects. A new arrival /iau/ made its debut in the word 躍 in Min dialects. For OC 鐡 there are a number of competing pairs such as /io/ and /io/, /io/ and /i/, /io/ and /i/. For the words of MC 梗 rime group, be they derived from 鐡 or 錫, the competition goes on unabated between /ia/ and /i/ obviously in favor of the latter, since in contrast with Min dialects where there is a tie in the competition the /i/ form in words like 席, 籍, 背 and 曆 has forced the /ia/ form out of scene in many instances in Gan and Kejia dialects. In sum, the coexisting forms are in constant competition, and the
eclipse of one form by another form does not occur instantly. It takes time, possibly decades or even centuries, to run its full course. The change (i.e. competition and selection) accomplished in time is what is predicted in the theory of lexical diffusion.

6. XIESHENG AND LEXICAL DIFFUSION

The OC rime categories (i.e. 韻部) are arrived at on the basis of the sharing of phonetic components or xiesheng (諧聲) as well as the rime patterns of Shijing. The principle that the words sharing a phonetic component belong in one rime category holds in practically all cases except for some overlapping ones:

1. overlapping across finals with voiced stop endings, voiceless stop endings and nasal endings.
   a. 亥 [之] 核, 刻 [職]
   b. 寺 待 [之] 特 [職]
   c. 椒 [幽] 叔 [覺]
   d. 支 肢 [支] 辰 [錫]
   e. 猴 [之] 青 [耕]
   f. 貼 [葉] 佔 [談]

2. overlapping within each type of finals.
   a. 晤 [之] 委 [微]
   b. 尾 [微] 犀 [脂]
   c. 朝 [宵] 舟 [幽]
   d. 企 徑 [支] 止 [之]
   e. 篩 [支] 師 [脂]
   f. 代 [月] 弋 [職]
   g. 若 [鐸] 匿 [職]
   h. 吏 [屋] 敕 [職]
   i. 危 [歌/支] 跪 [微]
   j. 昼 [職] 立 [緝]
   k. 騰 [蒸] 朕 [侵]
A noteworthy fact about the first type of overlapping is that each pair has the same vowel height even though they differ in ending; an exception is (1d) which has a slight difference in vowel. This principle is loosened in the second type.

A corollary of the xiesheng principle as stated above is that a set of words with a common phonetic that have now taken on a range of different sounds must have started off with the same finals. Taken this hypothesis as a point of departure many interesting consequences emerge.

An important claim of the theory of lexical diffusion is that sound change is implemented in a lexically gradual manner; it does not convert a whole set of words overnight.\(^{(12)}\) Although lexical diffusion was first proposed to account for sound change that occurs within a phonological system, it can also apply to contact-induced sound change as I argue elsewhere (Lien 1989; cf. Wang 1989). In the following I will look into the phonological alternations of the xiesheng series (i.e. a group of words sharing a phonetic) in search for proofs of on-going sound change. In support of lexical diffusion it is crucial to find the evidence showing the coexistence of three types of forms: (a) unchanged forms, (b) the alternation between unchanged and changed forms (c) the changed forms. If only (a) and (c) are available it is no argument for lexical diffusion. Evidence of (b) is of pivotal importance to the validity of lexical diffusion. Let us consider the change of /o/ to /ai/ in the 之声 category. From the standpoint of lexical diffusion the change would be processed in a manner mapped out in the following table:

<table>
<thead>
<tr>
<th>unchanged</th>
<th>variation</th>
<th>changed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>o</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>o</td>
<td>o/ai</td>
</tr>
<tr>
<td>3</td>
<td>o</td>
<td>o/ai</td>
</tr>
<tr>
<td>4</td>
<td>o/ai</td>
<td>ai</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>ai</td>
</tr>
</tbody>
</table>

\(^{(12)}\) The theory of lexical diffusion was first proposed in Wang (1969). Owing to its theoretical impact a host of researches have since then been conducted on the basis of this model. For a collection of some representative works done in this tradition see Wang (1977). For theoretical refinements see Chen and Wang (1975). For most recent developments of this theory see Wang (1979, 1982 and 1989).
The coordinate designates temporal dimensions: $T_1$ and $T_5$ mean the initial and final stages of evolution linked by intermediate stages ($2$, $3$ and $4$). In short, change takes time to run its full course, whether it is a short or prolonged event. The abscissa denotes the synchronic coexistence of three types of forms. (13)

We can give the coordinate a different interpretation. Now the numerals stand for the lexical items that participate in the change. It is often the case, as lexical diffusion predicts, that the pace of change varies with lexical items. This is indeed true in the development of /ai/ to /o/. But here the correlation can be seen more clearly by taking the pace of change as a function of the xiesheng series. As shown in the following table, each set of words is preceded by the phonetics they share, and the phonetics 灰, 采, 才, 台/臺 and 乃 show a scale of incremental innovation: (14)

<table>
<thead>
<tr>
<th>Phonetic</th>
<th>Unchanged</th>
<th>Variation</th>
<th>Changed</th>
<th>Rime</th>
</tr>
</thead>
<tbody>
<tr>
<td>o</td>
<td>o/ai</td>
<td>ai</td>
<td></td>
<td>(灰)</td>
</tr>
<tr>
<td>1 灰</td>
<td>灰</td>
<td>誠</td>
<td>恢</td>
<td>(哈)</td>
</tr>
<tr>
<td>2 采</td>
<td>采</td>
<td>彩</td>
<td>採</td>
<td>(哈)</td>
</tr>
<tr>
<td>3 才</td>
<td>財</td>
<td>材</td>
<td></td>
<td>(開合)</td>
</tr>
<tr>
<td>4 台</td>
<td>台</td>
<td>胎</td>
<td>息 殆 迟 迩</td>
<td>(哈)</td>
</tr>
<tr>
<td>5 乃</td>
<td>臺</td>
<td>檯</td>
<td>抬</td>
<td>(哈)</td>
</tr>
</tbody>
</table>

Standing at the bottom of the scale 乃 takes the lead in casting off /o/ in

(13) I am indebted to Chen (1977), Hsieh (1977) and Wang (1979) for thoughts on temporal dimensions of lexical diffusion.

(14) The examples are gleaned from a file not included here that arranges modern Jian’ou values by the xiesheng series. Aside from riming patterns the xiesheng series are an indispensable basis for reconstructing the OC phonological system. However, a set of words sharing a phonetic may not be homophones at the OC period, as in 施池馳 (開支), 他 (開歌) and 地 (開脂). Therefore, to avoid muddling the issue, we should be careful not to include the cases where the xiesheng series show a grade or rime distinction in the MC period in the discussion of lexical diffusion.
favor of /ai/, whereas on the top 灰 still clings to /o/. On both ends of the spectrum the change is either completed or has not been launched yet. For the intermediate cases the change is barely started in 来, but well under way in 才; 台塂 is on the brink of losing its older form.

Thus, the on-going vowel shift as mapped out above supports the thesis of lexical diffusion that sound change is spreading across words at various pace. The change rate varies with the xiesheng series and there is variation even within each series: some words are more liable to change. Clearly the change is not random. But there is no phonetic condition for the change. Therefore, the task of seeking out the motivation for this variation needs our serious attention. The gist of our concern is aptly captured in the title of Wang (1982), Variation and Selection in Language Change: variation refers to sound change in progress and selection deals with what causes the change or what factors determine the direction of change.

I would not presume to be able to offer a satisfactory answer to this question, but I will make some preliminary suggestions as to the principle governing the change.

My suggestion is linked to the stratal distinction: the more native or colloquial a word the more resistant it is to change. Put differently, the earlier forms are less tampered with in the common indigenous words. Thus, the indigineness has an important role to play in the vowel shift as attested in the following examples. 為 /ia/ is more earthy and therefore less susceptible to further merger than 智 /i/, even though both share the phonetic 知 and are derived from MC 開支 and OC 支. The same applies to 昧 /ia/ and 歷 /i/ both of which share the phonetic 麻 and come from MC 開錫 and OC 錫. Needless to say, indiginenity of lexical items is only one of the factors that govern the evolution of finals.

7. CLOSING REMARKS

I have presented a portrayal of finals tracing their evolution from OC through MC down to modern times. The modern sounds when correlated with the reconstructed sound patterns of OC and MC reveal many interesting devel-
opments in pre-MC times beyond the domain of the MC system. In an attempt to ferret out the OC traits I take care not to lose sight of later developments. Therefore, many innovations typical of MC or later times are also brought up for discussion. Following the deliberation of each OC category an overview is furnished to capture the main trends of vowel shift in the colloquial and literary layers.

Since the question of the interaction between internal development and change due to outside influence keeps cropping up in the treatment of finals, I have taken the rime evolution of the 蟹 rime group as an example to illustrate how the formation of grade distinction which is a system-internal phenomenon is interacted with the stratal variation in a grade resulting from dialect contact. The competing finals in the rime categories 沃, 鐵 and 錫 which are subject to detailed treatment also show how a contact-induced change is reinterpreted as a system-internal change which takes time to run its full course.

The interaction between internal and external developments receives a most cogent interpretation when viewed in the light of a proposal that I make elsewhere (Lien 1989) to reconcile these two types of change. To illustrate my point a set of xiesheng series in the 之 category are taken as an example to provide a striking profile of on-going vowel shift in keeping with the prediction of lexical diffuson.

In closing I would like to raise two questions for future exploration. First, one of the most provocative features in Jian’ou as well as other Min dialects is that there are plenty of cases where a Min word derived from the MC 開口 category takes on the 合口 value in the colloquial pronunciation. Take the word ㄠ ‘mountain’. It is a 開口 word as registered in the MC rime book, Guangyun (廣韻). However, it assumes the 合口 final /uiː/ in Jian’ou, and /uɑ́/ (col.) (cf. /aːn/(lit.)) in Xiamen. The 合口 form must be a survival of OC, since in Xu Shen’s Shuo Wen Jie Zi (ca. A.D. 100), the first comprehensive dictionary of etymology, ㄠ was glossed as 宣 which is a 合口 word. (Xu 1979: 190) The discrepancy shown in the 開合 distinction as well as many other phenomena should find an explanation in the reconstructed MC sound pattern. The examples are so abundant that they cannot be cavalierly dismissed as Min-unique idiosyncrasies.
Second, Min dialects are said to comprise three groups: Northern Min, Eastern Min and Southern Min. This statement implies that there was a proto-Min source from which each group branched off and evolved into its present forms. Because of the heterogeneity as manifested, e.g. in the development of MC voiced obstruents among Min dialects, some linguists tend to take the common Min stage as a working hypothesis. (Li 1985) Language does not exist in a void. Only when spatio-temporal dimensions of Min dialects are brought into full play can we have no qualms in attempting an answer to this question.
APPENDIX 1

THE SYSTEM OF FINALS IN JIAN’OU.

Monophthongs.

\[ i \text{ 時} \quad y \text{ 魚} \quad u \text{ 吳} \]
\[ e \text{ 莞} \quad o \text{ 梅} \]
\[ e \text{ 腦} \quad o \text{ 兒} \quad o \text{ 嶽} \quad a \text{ 茶} \]

Diphthongs.

oral vowels.

\[ ai \text{ 梨} \quad au \text{ 柴} \]
\[ ie \text{ 皮} \quad ia \text{ 菜} \quad iu \text{ 油} \quad iau \text{ 橋} \]
\[ ye \text{ 蛇} \quad ua \text{ 過} \quad uai \text{ 發} \quad ue \text{ 麻} \]

nasal vowels.

\[ œŋ \text{ 種} / \text{穬} \quad œŋ \text{ 因} (< œŋ \text{ 桐}) \quad an \text{ 南} \quad eiŋ \text{ 人} \]
\[ iŋ \text{ 年} \quad iœŋ \text{ 陽} \quad iaŋ \text{ 正} \quad aiŋ \text{ 田} \]
\[ uœŋ \text{ 蟲} \quad yiŋ \text{ 園} \quad uœŋ \text{ 放} \quad uan \text{ 黃} \quad uaiŋ \text{ 販} \]

The above chart is based on Huang (1975) with the following minor modifications:

First, except for the data of Huang (1957) all the versions of modern Jian’ou dialect show a neutralization of /œŋ/ and /œŋ/ when occurring before the nasal ending; that is, /œŋ/ and /œŋ/ have merged into /œŋ/. The distinction may be an artifact that Huang concocted to fit the contrast shown in the rime book, Jianzhou Bayin. We therefore do not distinguish them and use /œŋ/ throughout the paper with the understanding that the distinction was maintained in Jianzhou Bayin. In that book /œŋ/ covers the 陽, 江, 談 and 随 categories while /œŋ/ embraces the 東 and 冬 /œŋ/ categories; the 元 and 文 categories seem to oscillate between them. Second, /œŋ/ is used in place of /œŋ/, and /œŋ/, /œŋ/ and /œŋ/ since the former forms are consistent with the forms found in other versions of Jian’ou dialect.

There seems to be a common stage in the development of finals that Jian’ou and Fuzhou shared in contrast to Xiamen: the coalescence of three-way distinction of consonantal endings into one series, viz., the merger of
nasal and stop endings into velars (*-m, *-n, *-ŋ > -ŋ and *-p, *-t, *-k > -k). However, Jian’ou underwent a further development by dropping the stop ending.

APPENDIX 2

THE FINAL SYSTEMS IN OLD CHINESE

The Old Chinese final systems as reconstructed in Wang (1985) and Li (1971) are given below. Li’s reconstruction enclosed in parentheses departs from Wang’s reconstruction on two counts: (1) the 陰聲 finals in the leftmost set are regarded as closed syllables with voiced stop (or -r) endings, and (2) 中 and 祭 are taken as two independent categories.

<table>
<thead>
<tr>
<th>the 陰聲 finals</th>
<th>the 入聲 finals</th>
<th>the 陽聲 finals</th>
</tr>
</thead>
<tbody>
<tr>
<td>支 e (佳 ig)</td>
<td>錫 ek (ik)</td>
<td>耕 eŋ (iŋ)</td>
</tr>
<tr>
<td>之 o (əg)</td>
<td>職 ək (ak)</td>
<td>蒸 əŋ (əŋ)</td>
</tr>
<tr>
<td>魚 a (ag)</td>
<td>鐵 ək (ak)</td>
<td>陽 əŋ (əŋ)</td>
</tr>
<tr>
<td>霄 o (aug)</td>
<td>沃 ok (auk)</td>
<td></td>
</tr>
<tr>
<td>幽 u (aug)</td>
<td>覺 uk (auk)</td>
<td>[冬] (中əŋ)</td>
</tr>
<tr>
<td>侯 o (ug)</td>
<td>屋 ək (uk)</td>
<td>東 əŋ (ŋŋ)</td>
</tr>
<tr>
<td>脂 ei (id)</td>
<td>質 et (it)</td>
<td>真 en (in)</td>
</tr>
<tr>
<td>微 əi (əd)</td>
<td>物 ət (ət)</td>
<td>文 əŋ (əŋ)</td>
</tr>
<tr>
<td>(祭 ad)</td>
<td>月 ət (ət)</td>
<td>元 əŋ (əŋ)</td>
</tr>
<tr>
<td></td>
<td>緝 əp (əp)</td>
<td>侵 əm (əm)</td>
</tr>
<tr>
<td></td>
<td>盖 əp (葉 əp)</td>
<td>談 əm (əm)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>歌 ai (ar)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For ease of exposition Li’s representation is slightly altered here. The /w/ element in the consonantal endings -gw, -ŋw and -kw has been rebuilt as /u/ into the vowel proper. In Wang’s system [冬] is a category in the Warring States period.
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建甌方言中的互競韻母系統

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摘 要

本報告對閩北建甌方言中韻母的演變作深入的研究。方音資料取材于清代地方韻書【建州八音】（西元一七九五）和近來調查的方言材料。不論是現代方音或是韻書都反映出建甌方言複雜的韻母演變。這種韻母系統的複雜性可視為歷來方言接觸及內部演變所累積的層次現象。在這項報告中我提出了一個以簡驭繁的研究方法。閩方言素以保存上古漢語殘餘形式著稱。在探索建甌韻母流變時，我以上古漢語和諧聲作主要的參考，並輔之以中古的音韻系統。依據前人韻部演變的研究我們也對建甌方言的韻母演變釐定其可能發生的年代。從這項新的研究可以看出幾個有趣的現象：閩方言獨有的韻母演變，白讀層的元音大轉變，內部演變和接觸所引發之變化的互動關係，互競的韻母系統所呈現的詞彙擴散現象等。