

The Historic Role of the Late Professor Y. R. Chao's 1929 Field Materials*

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With the example of the Chao'an dialect, the present paper discusses the significance of the dialect materials collected by the late Professor Y. R. Chao during his second field trip in 1928-29. Constituting the first accurate phonetic record of various Southern dialects during the early part of 20th century, these materials serve as landmarks in the periodization of modern phonological changes in Chinese dialectology. They also play the role of checking and affirming the value of earlier "less professional" materials most frequently compiled by missionaries, which often form important earliest documents for the various dialects but which have not been fairly evaluated or adequately used for the historical study of these dialects. The Chao'an materials demonstrate the wealth of information provided for the field: they affirm the distinctions of the rime categories established in the traditional rime dictionary of *The Fifteen Sounds of Chaozhou*, present the last remnant of evidence for an -n ending in the Chaozhou dialect, affirm the value of various previous colloquial materials, reveal the conditions and process of the attrition of consonantal endings in Chao'an, and provide evidence for earlier distinction of the Double rimes in the Xian rime group.

Key words: Y. R. Chao, Chao'an, phonological history, Southern Chinese, Ancient Chinese

1. Prologue

Apart from a brief summary of them in 1970, the field materials of the legendary second investigation of the Chinese dialects by the late Professor Y. R. Chao have yet to be published and studied.¹ Recently I took a close look at some of these materials,

* I would like to express my thanks for comments on the first draft of this paper by Professors William S.-Y. Wang, South Coblin, William Baxter III, Matthew Chen, Ting Pang-hsin and Samuel Cheung, when it was presented at the First Chao Yuen Ren Center for Chinese Linguistics Symposium at Berkeley, February 18-19, 1994.

¹ See Yue-Hashimoto (1970). In the summer of 1969, I had the good fortune of viewing these materials first-hand, and, with the permission of the late Professor Chao, I made copies of the entire set of these field materials both by xeroxing and by hand (since xeroxed copies are not distinct enough). The original plan was to have the materials published through the Princeton

which are mostly records of the phonetic transcription of syllables forming a core list of cognates of Han Chinese arranged in the now familiar format of Ancient Chinese rime categories, and come to realize that they are invaluable in at least three respects. First, as the first accurate phonetic transcriptions of various Southern Chinese dialects as spoken at the end of the nineteen twenties, they represent the best samples of these dialects at the beginning of their modern stage, in comparison with earlier materials that are sometimes available for some of the investigated dialects. Second, they not only set their own value but often affirm the value of earlier materials. Many modern linguists doubt the value of dialect materials recorded in the 19th and early 20th centuries, which, as a consequence, are not much utilized in dialectal or historical studies. A comparison of these “less professional” materials with the late Professor Chao’s materials often provides confidence of different degrees in the former: the latter serving as some kind of check of possible change from the former, or affirming the possibility of the existence of certain categories in the former; thus allowing us to use the former with caution. This opens up new possibilities in the research of the history of phonetic/phonological development of the dialects involved, sometimes with implication of general significance also, with these field materials serving as landmarks or helping to locate landmarks in the periodization aspect of 19th and 20th century phonological changes.

I shall cite one example from his materials, which has both earlier and later materials for comparison, and attempt to illustrate the important role they play in contributing to our understanding of the history of attrition of final consonants in this dialect. This is the Southern Min dialect of Chao’an.

2. The Chao’an 潮安 materials

The Chao’an materials are important in many respects.

First, it confirms the distinctions of the overwhelming majority of the rime categories as established in the popular rime dictionary *The Fifteen Sounds of Chaozhou* 潮語十五音.

Second, as far as consonantal endings are concerned, these materials present the last remnant of evidence for an -n ending in the Chaozhou dialect, which, as we know it after this time, has only a two-way distinction as regards the point of articulation,

Chinese Linguistics Project and my summary was meant to be an informative overture; however, that plan had not been able to be realized.

namely, -m versus -ŋ and -p versus -k, apart from nasalized vowels and the -ʔ. A check with recent materials show little further change.²

Third, it affirms the value of certain previous colloquial materials.³

Fourth, these materials reveal the conditions and process of the attrition of consonantal endings in Chao'an. More advanced attrition was witnessed in the descendants of the Outer rimes. For example, while descendants of the Shen 深 rime group end with -m or -p, and depending on Divisions, descendants of the Xian 咸 rime group may still end with -m or -p, a considerable number of them bear nasalized finals, end with a glottal stop or even bear open finals. When there are two readings for the same form, the literary forms end with -m/-p or -ŋ/-k while the colloquial forms bear nasalized finals, end with a glottal stop or bear open finals. These colloquial forms are arranged under different rimes in the Chaozhou rime dictionary, with every indication that attrition of ending consonants has long begun in colloquial words. In addition, examples from various rime groups confirm the well known fact that attrition began with the oral stops. Furthermore, the materials present evidence for the rate of certain phonetic process of change in Chao'an, namely, attrition of the nasal stops is fastest in the Tan 談 rime with the long vowel; while attrition of oral stops is fastest in Divisions I and II, slower in Divisions III and IV.

Fifth, there is some very interesting evidence for earlier distinction of forms derived from the two Division I rimes of the Xian rime group in Chaozhou: whereas the Tan 覃 rime reconstructed by Karlgren with a short back [ɑ] has almost all forms with the back [ɑ] + [m] in Chao'an (grouped under the Gan 甘 or 'Sweet' rime in the rime dictionary), the Tan 談 rime reconstructed with a long back [ɑ:] has almost 43% of the forms with a nasalized back [ã]. In Division II also, the only form with a nasalized final came from the Xian 銜 rime reconstructed with a long front [a:] by Karlgren. In the Entering tone, the difference is less dramatic: the Tan 談 rime have 60% of the forms ending with a glottal stop or none at all (compared to 50% of the Tan 覃 rime), and the Xian 銜 rime about 43% (compared to 28% of the Xian 咸 rime).

We shall discuss each aspect in the following sections and shall henceforth refer to the Chao'an materials as the Chao'an dialect.

3. The Chao'an dialect

A description of the Chao'an dialect *à la* the late Prof. Chao's record in 1929 is in order before our discussion. Although the two native speakers were unfortunately

² As compared with Y. Li (1959), Zhan (1959) and Cai (1976), for example.

³ Such as Dean (1841) and Goddard (1883).

identified neither in my notes nor in the written data, excerpts from Prof. Chao's diary indicate that the speakers were probably from the city of Chaozhou or of Shantou.⁴ Data for speaker 1 are sparse and unfinished, totalling approximately 477 syllables, while those for speaker 2 fill the entire syllable list of 3,000. The two sets of data agree very well except for one important aspect: speaker 2 has an [f-] initial absent in speaker 1 (and most Southern Min speakers). There are also minor differences in the pronunciation of Entering tone syllables, which will be discussed in section 7.

The initial system is characteristic of what we know of modern Chaozhou, with at least fifteen, and in the case of speaker 2, sixteen distinctive categories:

p	p'	m/b	f
t	t'	l/(n)	
ts	ts'	dz	s
(tɕ	tɕ'		ɕ)
k/c	k'/c'	ŋ, g/p ⁵	h, x/ç, ç' ?

The variation between the pairs [m-] and [b-] and between [ɲ-]/[ɳ-] and [g-] in general follows the rule that the former member of each pair occurs in syllables with nasalized vowels or nasal endings and the latter elsewhere, as in 盲 [mẽ] 'to be blind' versus 麥 [bɛ] 'wheat' or 願 [ɲueɲ] 'wish' versus 月 [gue] 'moon'. However, literary versus colloquial style also comes into the picture, with literary pronunciation having the nasal initial and colloquial pronunciation the plosive initial. For example, 米 'rice plant' is [bi] but 迷 'to get lost' is [mi], and 鵝 'goose' is [gɔ] but 蛾 'moth' is [ɲɔ].

The initial [f-] of speaker 2 occurs in forms that are not colloquial--for example, [fui] for 諱, 妃, [fue] for 悔, 晦, [fuam] for 泛, 凡, 範, 范, 犯 (but [p'ɑŋ] for 帆), [fuŋ] for 痕, [fuɑŋ] for 芳, 妨, 訪, 沓, [fuɑŋ] for 匡, [fu] for 夫, 府, 膚, 俯, 付, 賦, 傅, 敷 (but [pou] for 斧 and [p'ou] for 甫), [fuɑŋ] for 風 (but [p'ɑŋ] for 蜂), [fuap] for 法, [fuek] for 乏, 發, 髮, 伐, 筏, 罰. Some alternate with an [x-] or an [h-] pronunciation, such as [xui] or [fui] for 揮, 輝, 徽, [hui] or [fuŋ] for 卉, [fueɲ] or [hueɲ] for 梵, 幻,

⁴ During a visit to his office in the summer of 1969 to ask questions about his field trip, Prof. Chao read me portions of his diary. Prof. Chao departed from Hong Kong to Shantou on January 25 but could not find appropriate speakers after his arrival there on the following day. He then went to Chaozhou on the 27th and located a native speaker 本地人 from the Fourth High School of Jinshan 金山第四中學. In the afternoon of the 29th he returned to Shantou to look for informants in the First High School 第一中學. There were Mr. Guo 郭 and Mr. Huang 黃. Apart from this account, there is no further information relating to the exact locality of the two native speakers he used.

⁵ The actual symbol used was [ɳ], which is not among the IPA inventory in the software used in this paper.

宦, 反 (but [hueŋ] or [puŋ] for 飯 as a literary versus colloquial pair). In one instance, it was clearly stated that the form with [f-] is literary while that with [p-] is colloquial-- [fuŋ] and [pŋ] for 放. The pair [fuŋ] versus [p'ŋ] for 紡 should be similarly interpreted. In another example, [f-] alternates with [h-] and [p-], depending on usage-- [fuŋ] for 方圓, 地方, 方法, [hŋ] for 方方, and [puŋ] for the surname. From the total occurrence of [f-] presented here, it is evident that this initial is a borrowed form, most likely from some Hakka dialect, since the Hakka dialect is known to preserve the -m/-p ending in the Fan 凡 rime.

The initial [n-] rarely occurs and may be considered marginal.

The variation of the members of each pair of velars depends on the following vowels: palatals before high front vowels and velars elsewhere; for example, 齒 'teeth' is [c'i] but 苦 'bitter' is [k'ou], 險 'dangerous' is [ɕiəm] but 喊 'to call out' is [ham], and 惹 'to provoke' is [ɲia] but 五 'five' is [ŋõũ]. It must be pointed out, however, that the phonetic distinction is marginal and not consistently represented, and the palatal [ɲ] rarely occurs.

There appears to be a trace of distinction between a set of dental versus palatal sibilants in the Zhi 止, Division IV of the Xiao 效, and Division III of the Shan 山 and the Zhen 臻 rime group before the vowel (or glide) [i]. There are in all about twenty-three instances of the palatals: fifteen instances of [tɕ-], five instances of [tɕ'-], two instances of [dʒ-], and one of [ɕ-] in such forms as 紫 [tɕi], 質 [tɕie], 妾 [tɕieɸ], 切湖 [tɕiak], 榛臻真振震娠 [tɕiŋ], 診趁 [tɕieŋ], 即 [tɕiek], 闢 [tɕip], 試 [tɕ'i], 竊 [tɕ'ieɸ], 臣 [tɕ'ieŋ], 雀鵲 [tɕ'iak], 尿 [dʒie], 熱 [dʒuaʔ] (colloquial reading versus [dʒiek] of literary reading), 腎 [ɕieŋ], contrasting with 指 [tsi], 尺 [tsie], 接 [tsieɸ], 津晉 [tsiŋ], 澣 [tsieŋ], 輯 [tsip], 弑 [ts'i], 秦 [ts'iŋ], 綽 [ts'iak], 悅 [dzuaɕ] and 善 [sieŋ]. However, this distinction does not seem to be consistent with any known possible conditioning, diachronic or synchronic, and will be treated as a case of phonetic variation for the time being.

There are in all sixty-eight finals, not counting bracketed forms:

a	ai	au	am	ap	ɑŋ	ak	ã/ã	ãũ	ɑʔ
ia		(iaɯ)			iaŋ	iak	iã		
					/iaŋ	/iak			
ua/ua	uai		uam	uap	uaŋ	uak	uã/uã		uaʔ
iəu			iəm	iəp					
/iɤu									
i		iu	im	ip	in	iŋ	ik	ĩ	ĩũ
						eŋ	ek	ẽ	iʔ

			/Eŋ	/Ek ⁶	
ie			ieŋ	iek	ĩ ĕ
ue/ue			ueŋ	uek	
			uiŋ ⁷		
u	ui		uŋ	uk	ũĩ
u			uŋ	uk	
ɔ/o	oi	ou	oŋ	ok	õ
	õĩ	õũ			ɔʔ
					oiʔ
			ioŋ	iok	
			ŋ		

For speaker 1, the phonetic transcription is slightly different for some vowels: [ɤ] or an upside down schwa instead of [u] although the latter is sometimes used too, [A] instead of [ɑ] and [E] instead of [ɛ] or [e] although [e] is sometimes used.

The syllabic nasal [ŋ] occurs only in [hŋ], [ʔŋ] or [bŋ].⁸

The final [iau] is marginal: it is given in one of two pronunciations of 掉.

There are in all eight tones, transcribed both in musical and linguistic notation: [33] for Yin-Ping, [54] for Yang-Ping, [52] for Yin-Shang, [35] for Yang-Shang, [12] for Yin-Qu, [32] for Yang-Qu, [2] for Yin-Ru and [4] for Yang-Ru.

4. The Chao'an dialect and the Chaozhou rime dictionary

The exact date of the compilation of the popular Chaozhou rime dictionary *The Fifteen Sounds* 十五音 has not been verified. *The Fifteen Sounds* has its early model in the *Comprehensive Fifteen Sounds* 雅俗通十五音 of Zhangzhou 漳州, which is clearly a descendant of the *Cross River Book* 渡江書, which R. Li (1987) has verified to be compiled after the *Kangxi Dictionary* 康熙字典 of 1716. Since it has not been referred

⁶ There is a note beside the form 肯 [k'ɛŋ] that [ɛ] is [E], which presumably refers to all forms with the final [ɛŋ]; however, next to the form [pɛk] for 碧 there is a note that [ɛ] is not the same as [E], presumably with the ending [-k] the quality of the vowel varies more. However, with respect to speaker 1, only [E] was used in both types of syllables. We consider [ɛ] and [E] variants.

⁷ Bodman (1982) referred to this final as a significant distinction found in Chao'an but not other Southern Min dialects. However, in one example, the Chao'an materials indicate that this is a colloquial reading paired with the literary reading [ueŋ]: 斷 'broken' has [tɕiŋ³⁵] for colloquial and [tueŋ³⁵] for literary reading. There are five more forms with [uiŋ] than listed in Bodman 1982: 酸 'sour' [suiŋ³³], 鑽 'a bore' [tsuiŋ¹²], 蒜 'garlic' [suiŋ¹²], 傳 'biography' [t'uiŋ¹²], 倦 'tired' [t'uiŋ⁵⁴]. This final does not occur with speaker 1, who gave [ɤŋ] or [ueŋ] instead.

⁸ [bŋ] occurs only for 殷 and 懇.

to in the *Hanjiang Wenjian Lu* 韓江聞見錄 of Zheng Changshi 鄭昌時 written between 1797 and 1821,⁹ it must be compiled later than the 1820s. The version available to this study is the *Chaozhou Fifteen Sounds* 潮語十五音 compiled by Jiang Rulin 蔣儒林 and published by the Wuguitang 五桂堂 book store in Hong Kong. The number of initial (15) and final (40) categories are the same in both the *Comprehensive Fifteen Sounds* and the *Chaozhou Fifteen Sounds*, although some of the rime indices bear different characters and are arranged in different order. A comparison is given below:¹⁰

雅俗通:	軍堅金規加江公乖經光孤嬌街恭歌皆斤薑甘柯
潮語:	君堅金歸佳江公乖經光孤驕雞恭歌皆君薑甘柯
雅俗通:	干兼交家瓜膠龜扛枝鳩官居庚柑京橋肩天觀疆
潮語:	兼交家瓜膠龜扛枝鳩官居柑庚京蕉天肩干關姜

In the *Chaozhou Fifteen Sounds*, the last three rime categories are merely listed in the table of contents; moreover, at the end of the rime book, it was stated that they have merged with other rime categories: “干部與江同, 關部與光同, 姜部與堅同, 俱不錄”. The fifteen characters given to the initials are identical in both versions:

柳邊求去地頗他貞入時英文語出喜

The Chao'an dialect, except for the initial 喜 and phonetic variants already discussed in the previous section, has one distinct initial corresponding to each of the fifteen initials of the rime book (only significant phonetic variants are listed):

柳	邊	求	去	地	頗	他	貞	入	時
l/n	p	k	k'	t	p'	t'	ts	dz	s
英	文	語	出	喜					
ʔ	b/m	g/ŋ	ts'	h/f					

The [f] here is exceptional and has already been discussed in the previous section.

With three exceptions, Chao'an has one major final (or one pair, in rimes with syllables having the Entering Tone) for each of the rime category as follows:

⁹ See X. Li (1993).

¹⁰ Information on the *Comprehensive Fifteen Sounds* is based on Hong (1965).

君 un	堅 iaŋ ieŋ	金 im	歸 ui	佳 ia	江 aŋ	公 oŋ	乖 uai	經 en	光 uaŋ ueŋ uam uak uek uap
uk	iak iek	ip			ak	ok		ek	
孤 ou	驕 iəu	雞 oi	恭 ioŋ iok	歌 ɔ ɔʔ	皆 ai	君 iŋ, in ik	薑 i̯ɛ̃	甘 am ap	柯 ua uaʔ
兼 iəm iəp	交 au	家 ɛ	瓜 ue	膠 a aʔ	龜 u	扛 uŋ, ŋ uuk	枝 i iʔ	鳩 iu	官 ũã
居 u	柑 ã	庚 ɛ̃	京 iã	蕉 ie	天 i̯	肩 õi̯	(干 關	姜)	

The close correlation between the set of Chao'an finals and the Chaozhou rime categories indicates that on the whole, the latter reflect the colloquial language. On the other hand, there is also enough evidence through a comparison of the two sets to argue that the rime categories reflect a more standardized system. There are more distinctions in the Chao'an system of finals than those offered in the rime dictionary. This could be due to the fact that they reflect different dialects or different stages of the same dialect. The latter scenario is less likely, because the merger of distinction usually reflects a later stage unless the distinctions can be considered innovations.

Let us examine each case. Corresponding to the Jian 堅 rime, Chao'an has two sets of finals, [ieŋ]/[iek] and [iaŋ]/[iak], the former mainly derived from Open Divisions III/IV of the Ancient Shan 山 rime group and the latter from Division III of the Ancient Dang 宕 rime group. In addition, the statement at the end of the rime dictionary betrays the fact that an earlier distinct rime category, Jiang 姜, has merged with Jian. Since the form 姜 comes from the Ancient Yang 陽 rime, it proves that the two sets of Chao'an finals reflect this earlier distinction, with [ieŋ]/[iek] for the Jian rime and [iaŋ]/[iak] for the Jiang rime.

Corresponding to the Guang 光 rime, Chao'an has three sets of finals, [ueŋ]/[uek], [uaŋ]/[uak] and [uam]/[uap], the first set mainly from the Closed rimes of the Ancient Shan rime group, the second from the Closed rimes of the Ancient Dang rime group, and the last from the Ancient Fan 凡 rime. Again, the statement at the end of the rime book reveals that another earlier rime category, Guan 關, has merged with the Guang

rime, and the form 關 comes from the Ancient Huan 桓 rime. Again, the Chao'an finals reflect the earlier distinction, with [ueŋ]/[uek] for the Guan rime and [uaŋ]/[uak] as well as [uam]/[uap] (on the basis of sharing the same vowel) for the Guang rime.

The distinctions discussed so far, reflecting an earlier stage than presented in the Chaozhou rime dictionary in question are even found in modern Chaozhou. Their merger in the rime dictionary is thus more likely a reflex of some standardized form of Chaozhou that perhaps represents a literary idiom.

The merger of the rime category Gan 干 with Jiang 江, as stated at the end of the rime book, is witnessed in Chao'an, since there is only one set of corresponding finals [aŋ]/[ak].

The two sets of Chao'an forms [iŋ]/[ik] and [in] for the Jun 君 rime will be discussed in the following section.

In the remaining thirty-four rimes where Chao'an has single sets of reflexes, the phonetic value of the latter may or may not reflect the rime dictionary situation. This will be further explored in the following two sections.

5. An earlier dental stop ending in Chao'an

Time and again, it has been observed that while the 19th century romanized texts and dictionaries show a transcription of -n/-t for the Chaozhou dialect, no such consonantal endings are found in the modern Chaozhou city dialect of this century.¹¹ Since these pre-modern materials are not compiled by linguistic experts according to modern criteria, it is natural to cast doubt on such a distinction, which may be artificial or based on dialects other than the metropolitan area of Chaozhou. In other words, there is no definitive answer to the question whether such a distinction actually existed in the Chaozhou dialect. Bodman (1982) looked for such a distinction from other sources such as data on Swatow speakers in Thailand, but these too cannot be free from the same question concerning the possible regional varieties of the dialect.

A recent careful re-examination of the Chao'an materials yield six forms with an [-n] ending: 辨 [ʔpien³⁵], 辯 [ʔpien³⁵], 便 [ʔpien³⁵], 寘 [ʔin⁵⁴], 弓 [ʔin⁵²] and 印 [ʔin¹²], all from speaker 2. These forms cannot be accidental errors, since Prof. Chao was such an eminent phonetician. One may argue that these are borrowed forms. This may be the case with the first three forms from the Ancient Xian 仙 rime, since the retention of a nasal ending, overwhelmingly [-ŋ], is more in line with literary pronunciation than colloquial pronunciation, the latter of which have nasalized finals. It is difficult to argue

¹¹ The reader is referred to Bodman (1982) for an illuminating discussion, but see note #15 below.

that this is the case with the last three forms which are from the Ancient Zhen 真 rime, which does not show distinction of the literary versus colloquial pronunciation through the finals.¹² These three forms are neither particularly colloquial nor literary forms in terms of usage. If the speaker had borrowed the pronunciation from some neighboring dialects such as Yue or Hakka, why only these three forms?¹³ It is no accident that they are all derived from the Division IV doublets of the Ancient Zhen 真 rime. We consider them residue of an earlier distinction in the Chao'an dialect. They are the last forms to undergo the change of [-n] to [-ŋ] due to the doubly palatal nature of the initial (and the glide) and the vowel inherited perhaps from Ancient Chinese.¹⁴

Why is there no residue of a [-t] ending? Because Entering tone syllables undergo attrition of ending consonants prior to Yang Sheng syllables, as witnessed throughout Chao'an (see section 7 below), other Southern Min dialects, as well as other Chinese dialects. By this time, [-t] has generally changed to [-k] in this rime. From the evidence of the existence of an [-n], a [-t] must have existed--this is a general, symmetrical distributional pattern across the Chinese dialects.

According to a recent study (X. Li 1993) based on Zheng Changshi's *Hanjiang Wenjian Lu* of nearly 200 years ago, the Chao'an dialect (native dialect of Zheng) of that time most likely still preserved an [-n] ending in the several rimes of Zhen 真, Wen 文, Han 寒, Yuan 元, Shan 刪, Xian 先. With this residual [-n] still lingering in the Zhen 真 rime in the early decades of this century, we can safely establish that earlier in Chaozhou, there was indeed a distinction of dental stop ending as opposed to the labial, the velar and the glottal endings. With the last trace of this distinction still

¹² There is one pair of colloquial versus literary pronunciation listed: [nəŋ] versus [dʒiŋ] for 人. However, the colloquial form may better be associated with 農 of the Dong 冬 rime. Chao'an has [loŋ] for 農 and [lɔŋ] for 膿.

¹³ Samuel H. Cheung drew my attention to the fact that this same speaker 2 also has an [f] in his initial inventory, which is clearly a loan form. It is therefore not surprising that he is liable to some more loan forms. Still one cannot dispel the question, in this case with the -n ending consonant, why these three forms were borrowed. If this were the beginning of a borrowing process, one would expect the borrowing to start with either literary, low frequency forms of which pronunciation the speaker was not sure in his native dialect, or colloquial, high frequency forms which could be most susceptible to change. For comparison, all forms in the Zhen 真 and the Xin 欣 rime that carry the final [iŋ] or [ieŋ] in the Chao'an materials are listed here without tonal designation: 緊 [ciŋ], 因姻癰 [ʔiŋ], 珍 [tiŋ], 鎮 [tiŋ], 趁 [tɕiŋ], 陳 (as in 陳列) [t'iŋ], 塵陣 [tiŋ], 真診振賑震 [tɕiŋ], 神身申紳娠伸辰晨 [siŋ], 臣 [tɕ'iŋ], 腎 [ɕiŋ], 慎 [sim], 人 (literary pronunciation) 仁認 [dʒiŋ], 忍刃 [dzim], 鄰麟 [liŋ], 吝 [lieŋ], 津 盡晉薪 [tsiŋ], 親秦 [ts'iŋ], 心辛信訊 [siŋ], 賓濱檣殯貧牝 [piŋ], 民 [miŋ].

¹⁴ Karlgren's reconstruction is [jiěŋ].

present, the 1929 Chao'an materials serve as a landmark between modern and pre-modern metropolitan Chaozhou.¹⁵

6. The Chao'an dialect and the 1841 text of Chaozhou

Now we can examine some 19th century material of Chaozhou and seek to ascertain its value through comparison with the 1929 Chao'an materials. We have chosen one of the earliest extant textbooks, Dean (1841) for the purpose.¹⁶ This textbook is published in Bangkok and gives no reference to the type of dialect used. It consists of forty-eight pages of mostly lists of vocabulary, short phrases and sentences. Both characters and a kind of romanization are used. There are instances of inconsistency in transcription, probably partly due to printing errors. These will be pointed out below.

One major deficiency of this text is the absence of any indication of tones. Our discussion will thus be limited to the systems of initials and finals.

The phonological system (minus tones) is very much similar to that of Chao'an, but with one major departure in that there is no consistent indication of nasalized finals. Nasalization is generally represented by placing the symbol /ñ/ between the initial and the final. Below is a list of all the words in the text found with this nasalization symbol:

愚 gña	蓋 kñoi	義 gñi	園 hñ/hng	願 gñuan
鼻 pñi	耳 hñi/hi	櫃 hñui		
鱷 gñak				

The first row consists of forms which are not nasalized in Chao'an, the second row consists of those which are nasalized in the latter, and the last consists of a form not given in Chao'an. As can be seen, these nasalized forms pertain to particular words, while series of nasalized finals found in Chao'an are absent in this text. This lack of nasalized finals may be a feature of Chaozhou as spoken by emigrants into Southeast Asia.¹⁷

We shall reproduce the system of Chaozhou according to Dean (1841) in terms of the categories of the traditional rime dictionary, so that a comparison can be easily made with the Chao'an system.

¹⁵ X. Li (1993) also points out that to this day, in the mountainous region of Fenghuang 鳳凰 in the Chao'an county, the ending [-n] is preserved.

¹⁶ Thanks are due to Keith Dede, who secured for me a xeroxed copy of the original from the Library of Congress.

¹⁷ See Egerod (1956, 1957).

柳	邊	求	去	地	頗	他	貞	入	時
l/n/d	p	k	k'h	t	p'h	t'h	ch	j	s
英	文	語	出	喜					
0/y	b/m	g/gn	c'h	h, h'					

The system of initials vary from Chao'an in only minor respects, as can be observed from the above list: there is a variant /d/ for the 柳 initial; there is no /f/, which makes it closer to other varieties of Chaozhou that we know today; and /y/ appears when it is followed by the final /iw/ or /iam/ or /ong/, so that we have /yiw/ for 油, /yam/ for 鹽 and /yong/ for 庸 but /i/ for 椅, /in/ for 印 and /ie/ for 藥. The /'/ mark is not consistently used for aspiration. Except for the initial /c'h/, it is redundant, since /h/ already marks the aspiration. For example, 花 is transcribed /huey/ or /h'uey/. However, the representation of aspiration is not consistent, or rather, very poor: sometimes only /'/ is used where /'h/ or /h/ is expected, for example, 畜 is /t'ioh/ instead of /t'hok/ or /thok/; /h/ is sometimes left out where it is expected, for example, 偷 is /thaou/ or /taou/, 天 is /thi/ or /ti/; /'/ is very often omitted where it is expected for /c'h/, for example, 車 is /chia/, 粗 is /chou/, 菜 is /chai/, 草 is /chaou/ or /chaw/, 笑 is /chie/, 手 is /chiw/, 深 is /chim/, 千 is /choi/, 七 is /cht/, 春 is /chun/, 出 is /chut/, 床 is /chŭng/, 青 is /chey/, 蔥 is /chang/, etc. Unless the dialect is drastically different from all other known varieties of Chaozhou, there cannot be so many unaspirated forms. In fact, /c'h/ appears only in four forms: 醋 /c'hau/, 鬚 /c'hiw/, 象 /c'hiè/ and 銃 /c'heng/. In sum, the contrast of /ch/ versus /c'h/ is most unreliably represented.

君	堅	金	歸	佳	江	公	乖	經	
un, (ung)	ien	im	ui	ia	an	ong	uai	eng	
	iang				ang				
ut, ũt	iět	ip			ak, ăk	ok		ek	
uak, uek, uap								ěk	
光	孤	驕	雞	恭	歌	皆	君	薑	甘
uan, uang	ou	iou	oi	ong	aw	ai	in	ie	am
uăt				ok			it, ỉt	iě	ap, ăp
柯 兼		交	家	瓜	膠	龜			
ua, oa iam, iem		aou	ey	ue, uey a	u				
	iěp			(uay)					
扛		枝	鳩	官	居	柑	庚		
urn, ũrn, ung, ũng		i	iw	ua, oa	ur, ũr	a	ey		
ürt									
京	蕉	天	肩		(天	關	姜)		
ia	ie, iě	i	oi, oey						

In the system of finals, apart from what has been pointed out earlier that there are scarcely any nasalized finals, there is another major difference: the existence of more finals, at least eleven (if /ut/ and /ǔt/, /it/ and /ĩt/ and /urn/ and /ǔrn/ are considered variants) with the ending /-n/ and /-t/. Whereas the Chao'an dialect shows residual forms with [-n] in only one rime, the dialect reflected in Dean (1841) has six rimes with dental endings. The Jian 堅, the Jiang 江 and the Guang 光 rime have dental endings for forms derived from the Ancient Shan rime group and velar ending for those from the Ancient Dang and Jiang rime groups; the only exceptions are /pang/ for 板 and /hng/ or /hŋg/ for 園. Dean (1841) clearly represents a variety of Chaozhou before the merger of dental with velar endings took place, in other words, before a stage represented in the rime dictionary, for these three are exactly the rimes in the rime dictionary with which the rimes 干, 關 and 姜 have merged. It is also obvious that finals with the dental endings in Dean (1841) are to be identified with the Jian 堅, the Gan 干 and the Guan 關 rimes, while those with the velar endings are to be identified with the two Jiang 江姜 rimes and the Guang 光 rime.

Dean (1841) shows a two-way split in endings even where the rime dictionary has no indication of such earlier distinction: in the former, the Kang 扛 rime has dental endings for forms derived from the Ancient Zhen rime group¹⁸ and velar endings for those from the Ancient Dang rime group.

In addition, Dean (1841) reflects a dialect more in accordance with the alignment of ending consonants as displayed in Ancient Chinese. For example, the Jun 君 rime almost exclusively bears finals with dental endings, and only three forms are rendered with a velar ending--/mung/ or /mng/ for 門, /mung/ 問 and /hng/ or /hŋg/ for 昏; while the 君 rime has only dental endings. Forms of both rimes are from the Ancient Zhen rime group.

To sum up, the Chaozhou dialect reflected in Dean (1841) represents a much more conservative variety, although merger of /-n/ with /-ng/ began to show up in the Jun 君 rime, as pointed out in the previous paragraph.

Besides the two points--the general absence of nasalized finals and the consistent distinction of dental versus velar endings (except the case discussed in the previous section)--discussed above, the transcription of other finals correlate very well with those of the Chao'an dialect. Moreover, the distinction of two sets of finals for the Jian and the Guang rime is present in Chao'an also, although the distinction is not borne out by the opposition of dental versus velar endings but by means of the main vowel. Namely, where Dean (1841) gives /ien/ and /iang/ for the Jian rime, Chao'an gives [ieŋ] and [iaŋ]; and where the former gives /uan/ and /uang/ for the Guang rime, the latter

¹⁸ More exactly, from the Yin 殷 rime, with only the form 銀 /gnurn/ or /gnŭrn/ from the Zhen 真 rime.

gives [ueŋ] and [uəŋ]. In whatever way the distinction is expressed, it traces back to the same Ancient distinction.

We can safely conclude that materials such as Dean (1841) are basically reliable--thanks to the Chao'an data which serve as the means of verification--and should be made more use of in the historical study of the Chaozhou dialect.¹⁹

Lastly, we can affirm once more that the Chao'an materials represent the watershed between modern colloquial Chaozhou, which standard idiom is already represented by the rime dictionary, and pre-modern Chaozhou, a sample of which lies in Dean (1841).

7. Process of the attrition of consonantal endings

The Chao'an dialect furnishes us with one of the earliest, reliable examples of the attrition of consonantal endings in the Southern dialects. It confirms several general phonetic processes in a certain historical order already observed.

Across the Chinese dialects in a historical perspective, the oral stop endings undergo changes before the nasal stops, witnessed for example in the complete loss of oral stop endings but retention of certain nasal endings in many Northern Chinese dialects. In the Chao'an dialect (as well as many other Southern Min dialects), the faster and more advanced attrition of oral stop endings is displayed in the complete loss

¹⁹ An unpublished paper “潮州方言語音的演變” presented at the International Conference on Chaozhou Studies (December 1993) by Li Rulong and Li Zhuqing made use of J. Goddard 1883 (1st edition 1847), which attested to the existence of the dental endings -n and -t in the dialect on which the work was based. Li and Li argued that the dialect was probably as spoken by Chaozhou speakers in Bangkok, Thailand, since the first edition of the book was published there. Since this paper was not available to me until after the first draft of my present paper was written, I was unaware of Li and Li's study. Subsequently, a copy of Goddard (1883) also came into my possession (thanks to my daughter Kay Hashimoto), and a comparison between this book and Dean (1841) brought the conclusion that on the whole they seem to represent a similar type of dialect. However, as far as nasalization is concerned, the former is closer to Chao'an of 1929 and the latter to the type of overseas Chaozhou dialect as reported in Egerod (1956, 1957), with the former consistently giving a superscript ⁿ/ where nasalization is marked in Chao'an 1929. In addition, sometimes the vocalism of the former also shows it to be closer to Chao'an 1929: for example, some forms derived from the Hou rime carry the final [au] in Chao'an 1929, agreeing in general with /aou/ in Dean (1841) and /au/ of Goddard (1883), but for 喉 and 後, Dean (1841) gives /ou/ (corresponding to [ou] of Chao'an 1929) while the other two give /au/ or /aʊ/. On the other hand, the fact that forms derived from the Shan, the Zhen, part of the Zeng, and a few of the Geng rime group bear the /-n/ or /-t/ ending in both Goddard (1883) and Dean (1841), clearly sets them apart as representing an earlier stage of Chao'an.

of such endings in certain forms derived from Ancient Entering Tone syllables, as can be observed in the following list (all *forms are from speaker 1 only);²⁰ in addition, since the attrition of consonantal endings as seen in Chao'an was already apparent in Goddard (1883) and in Dean (1841), although the last text is unreliable as far as nasalization of finals is concerned, for comparison, forms from these two texts, wherever available, are also given in the second and the third row of each form respectively:²¹

覃: 踏 [ta]	拉 [la]	合 [ha]	(as in 合攏)	-- Chao'an 1929
tá	lá	há		-- Goddard 1883
		hă		-- Dean 1841
談: 塔 [t'a]				
t'a				
thă				
咸: 闡 [tsa] ²²				
ch'á				
銜: 甲*[kA ²]	鴨*[ʔA ²]			
ká	á			
kă	ăh			
鹽: 獵*[lA ²]	摺 [tsi ⁴]	葉 [hie ²]		
lá/nap	chi	hie		
lă	jǐ	hiě		
寒: 辣*[lua]	割*[kua]	曷*[ha]		
lua	kwa	hát		
	huă			
山: 八 [poi ²]	拔 [poi ⁴]/[puek ⁴]			
poi	poi			
pǒi				
(仙: 裂 [liek ⁴]	浙 [tsik ²])			
li	chi			

²⁰ Only the Ping Sheng rime indices will be given in the list. Tones are designated with tonal categories throughout the Chao'an data. They are transcribed into numerical value as given by the late Prof. Chao in his chart for tones. Where there is no such transcription, it means indication of tonal category is omitted in the original data.

²¹ Goddard (1883) gives both colloquial and literary pronunciation, which is here separated by a slash, with the colloquial preceding the literary. Forms in parentheses are those where Chao'an 1929 do not show open syllables.

²² This is a form with irregular correspondence; it is also listed under the Xian 銜 rime.

元: 揭 [cia²] 歇 [hia²]
 kia kiet
 先: 瞥 [pi³⁵] 節 [tsoi²] (as in 節候) 截 [tsoi⁴]
 choi choi
 choĩ choĩ
 桓: 鉢 [pua] 撥 [p'ua] 潑 [p'ua] 鉞 [buA⁴] 抹 [bua] 撮 [ts'ɔ]
 pua bua p'ua pwat bua ch'ó
 闊 [k'ua] 活 [ʔua]
 k'wa ua
 kuǎ uǎ
 刪: 刷 [sue²]
 sue
 suě
 仙: 絕 [tsɔ⁴] 雪 [sɔ] 說 [sue²]
 cho só/sok sue
 sǒ
 元: 襍 [bue⁴] 厥 [k'ue²] 月 [gue⁴]
 bue k'iet gue
 boě/buě guě
 先: 缺 [k'ue²] 血 [xuE²]
 k'ue hue
 huě
 唐: 泊 [ʔpɔ⁴] 膜 [mɔ⁴] 幕 [mɔ³⁵] 託 [t'ɔ²] 落 [lɔ⁴] 駱 [lɔ⁴]
 pó mó mó t'ó ló ló
 lǒ
 樂 [gau] (as in 音樂) 作 [tsɔ²] 昨 [tsɔ⁵²] 閣 [kɔ²]
 chak chá/cho kó
 擱 [kɔ²] 鶴 [hɔ⁴] 郭 [kue²]
 kó hó kue
 陽: 掠 [lia⁴] (若 [dziak⁴]) 約 [ʔie] 藥 [ʔie⁴] 鑰 [ʔie⁴]
 lia jiak ie ie yiak
 jiě iě iě
 江: 駁 [pɔ²] 卓 [tɔ²]
 pó tó/chau
 蒸: 職 [tsɛ²]
 che
 庚: 百 [pe²] 柏 [pe²] 伯 [pe²] 拍 [p'ɑ] 白 [pe⁴] 擇 [tɔ⁴]
 pe pe pe p'á pe tó
 pě pě pě pě tǒ

宅 [t'ɛ⁴] 窄 [tsa] 格 [kɛ²] 客 [k'ɛ²] 額 [hia⁴] 赫 [hɛ²]
 te che kek ke hia hek
 hiä
 耕: 麥 [bɛ⁴] 脈 [mɛ⁴] 摘 [tia²] 責 [tsɛ²] 策 [ts'ɛ²] 柵 [tsa⁴]
 be me/mek tia che ch'e ch'á
 mǎ
 隔 [kɛ²] 扼 [ʔɛ²] 厄 [ʔɛ²] 輓 [ʔɛ²]
 ke E E E
 清: 壁 [pia²] 僻 [p'ia²] 積 [tsɛ²] 跡 [tsia²] (脊 [tsik²])
 pia p'ia chek chia chit
 chǎk chiä
 惜 [sie¹²] 蓆 [ts'ie⁴] 隻 [tsia²] 炙 [tsia²] 赤 [ts'ia²]
 sie ch'ie/sia chia chia/chi ch'ia
 chiě chiä
 尺 [tsie²] 螯 [tsia¹²] 石 [tsie⁴] 益 [ʔia²] 亦 [ia⁴]
 ch'ie sek chie ia ia/ek
 chiě/siě
 籍 [tsia³⁵] 役 [hia⁴]
 hia/che hia
 青: 壁 [pia²] 滴 [ti²] 歷 [lɛ⁴] 績 [tsɛ²] 錫 [sia⁴]
 pia ti le che sia
 piäh siä

Whereas there are very few cases where an earlier nasal ending is completely lost. We find only the following examples:²³

寒: 岸 [ŋai³⁵]
 ŋai
 山: 間 [koi] (相間)
 kⁿoi
 koi
 桓: (鰻 [buen]) 短*[tɔ⁵²]
 mua tó/tuan
 陽: 望 [mɔ³²]
 mó
 maw

²³ The superscript ⁿ/ is explained in Goddard (1883) as representing “the nasal sound” (see p.v of his Introduction).

In general, no loss of nasal endings occurred without the compensation of nasalization, as can be observed below:

覃: 蠶 [ts'oi̯⁵⁴]
ch'oi̯

談: 籃 [nã⁵⁴] 三 [sã³³] 柑 [kã³³] 膽 [tã⁵²] 淡 [tã³⁵] 攪 [nã]
ná sⁿá kⁿá tⁿá tⁿá ná
na sa ka ta na
敢 [kã⁵²] 擔 [tã¹²]
kⁿa tⁿa
ka ta

銜: 衫 [sã³³]
sⁿá
sa

鹽: 鉗 [k'ĩ⁵⁴]
k'iam

寒: 單 [tuã³³] 灘 [t'uã³³] 攤 [t'uã³³] 干 [kuã] 安 [ʔuã] (as in 請安)
tⁿoa tⁿoa tⁿoa kan uⁿa/án
toa kan an
鞍 [ʔuã] 散 [suã⁵²] 傘 [suã] 旱 [ʔuã³⁵] 炭 [tuã¹²] 爛 [nuã³²]
uⁿa/án sⁿua hán/uⁿa tⁿoa lán/nán
sua
散 [suã¹²] 汗 [kuã³²] 案 [ʔuã]
sⁿua kⁿwa uⁿa/án
koa

山: 山 [suã³³] 盞 [tsuã⁵²] 產 [suã⁵²] 揀 [koi⁵²] 辦 [p'oi⁴]
sⁿua chⁿua sⁿua kan pⁿoi/pien
sua

刪: 板 [põĩ] 版 [põĩ]
pán pán
pang

仙: 棉 [mĩ⁵⁴] 錢 [tsĩ⁵⁴] 鮮 [tsĩ] 纏 [tʃ⁵⁴] 件 [ciã³⁵] 箭 [tsĩ¹²]
mi chⁿi chⁿi/sien t'ien kⁿia chⁿi
賤 [tsuã³²] 線 [suã³³] 扇 [sĩ¹²] 煽 [sĩ¹²]
chⁿua sⁿua sⁿi/sien sⁿi/sien
sua/soa si
全 [tsuã⁵⁴] 圓 [ĩ⁵⁴] 院 [ĩ³²]
ch'uan iⁿ iⁿ
i

先: 天[tʰĩ] 年[nĩ⁵⁴] 蓮[noĩ⁵⁴] 千[ts'oĩ] 前[tsoĩ⁵⁴] 先[soĩ]
tʰĩ/tien ni noi chⁿoi chⁿoi sⁿoi
thi/ti/tien ni choi sin
肩[koĩ] 弦[hĩ⁵⁴] 絃[hĩ⁵⁴] 辮[pĩ³³] 麵[mĩ³²] 殿[toĩ³²]
kⁿoi hⁿi hⁿi pⁿi mi tⁿoi/tien
koey pi mi
佃[toĩ³⁵] 硯[ɣĩ³²] 燕[i̯]
tⁿoi iⁿ yien
i
縣[guĩ³²] 眩[hui⁵⁴]
kⁿui hien
kui hin
桓: 般[puã³³] 搬[puã³³] 盤[puã⁵⁴] 瞞[muã⁵⁴] 官[kuã³³]
pⁿua/p'wan pⁿua pⁿua mua kⁿwa
pua kua
棺[kuã³³] 伴[puã³⁵] 滿[muã⁵²] 碗[ɣuã⁵²] 半[puã¹²]
kⁿwa pⁿua mua uⁿa pⁿua
ua poa
換[ɣuã³²] (丸[ɣuen])
hwan in/ien
ua i
(刪: 關[kuen] 還[huen])
kwan hwan
kuey hai
唐: 榔[nã⁵⁴]
no/lang
naw
陽: 娘[niẽ⁵⁴] 孃[niẽ⁵⁴] 量[niẽ⁵⁴] 糧[niẽ⁵⁴] 梁[niẽ⁵⁴]
nie nie nie nie nie
漿[tsiẽ³³] 槍[tsiẽ³³] 牆[tsiẽ⁵⁴] 箱[siẽ³³] 廂[siẽ³³]
chⁿie chⁿie chⁿie sⁿie sⁿie
chie sie
鑲[siẽ³³] 張[tiẽ] 場[tiẽ⁵⁴] 章[tsiẽ] 樟[tsiẽ³³]
sⁿie/siang tⁿie tⁿie chⁿie chⁿie
tie
傷[siẽ³³] 常[siẽ⁵⁴] 嘗[siẽ⁵⁴] 償[siẽ⁵⁴] 薑[ciẽ³³]
sⁿie sⁿie sⁿie sⁿie kⁿie
sie sie sie

鄉 [hiẽ³³] 羊 [ʔiẽ⁵⁴] 洋 [ʔiẽ⁵⁴] 楊 [ʔiẽ⁵⁴] 兩 [niẽ⁵²]
 hⁿie iⁿe iⁿe iⁿe nie
 ie
 蔣 [tsiẽ⁵²] 搶 [tsiẽ⁵²] 想 [siẽ⁵²] 像 [siẽ¹²] 漲 [tiẽ¹²]
 ch'iang chⁿie sⁿie sⁿie tⁿie
 sie tie
 掌 [tsiẽ⁵²] 賞 [siẽ⁵²] 醬 [tsiẽ¹²] 匠 [tsiẽ³²] 帳 [tiẽ]
 chⁿie sⁿie chⁿie chⁿie tⁿie
 chie ta
 賬 [tiẽ] 脹 [tiẽ] 上 [tsiẽ³²] 樣 [ʔiẽ³²] (涼 [liɑŋ])
 tⁿie tⁿie chⁿie iⁿie liàng
 siang ney
 (長 [tsiaŋ] 丈 [tuŋ] 韁 [c'iaŋ] 姜 [ciaŋ] 香 [ɕiaŋ])
 tⁿie tⁿie kⁿie kⁿie hⁿie
 tie
 (癢 [ʔiaŋ])
 chⁿie
 江: 腔 [c'iẽ]
 kⁿie/kong
 蒸: 冰 [piã³³]
 pⁿia
 庚: 彭 [p'ẽ⁵⁴] 盲 [mẽ⁵⁴] 撐 [t'ẽ³³]/*[tsiẽ⁵⁴] 生 [sẽ³³]
 pⁿe meng tⁿe sⁿe
 sey/seng
 牲 [sẽ³³] 更 [kẽ] 庚 [kẽ³³] 羹 [kẽ³³] 坑 [k'ẽ³³] 行 [kiã]
 seng kⁿe kⁿe kⁿe kⁿe kⁿia
 sèng k'ey/khey kia/hang
 猛 [mĩ⁵²] 省 [sẽ⁵²] 哽 [kẽ⁵²] 梗 [kẽ⁵²] 硬 [nẽ³⁵]
 me sⁿe kⁿe kⁿe nge
 mey sey key
 兵 [piã³³] 平 [pẽ⁵⁴] 京 [ciã³³] 驚 [ciã³³] 丙 [piã⁵²]
 pⁿia pⁿe kⁿia kⁿia pⁿe
 pier poi/pe/peng kia kia
 影 [ʔiã⁵²] 柄 [ʔpẽ¹²] 病 [pẽ³²] 命 [miã³²] 鏡 [ciã¹²]
 iⁿa pⁿe pⁿe mia kⁿia
 pey mia kia
 橫 [huẽ⁵⁴]
 hⁿue
 huey

兄 [huẽ⁵⁴]
hⁿia
hia
耕: 爭 [tsẽ³³] 耕 [kẽ³³]
chⁿe kⁿe
chey
清: 名 [miã⁵⁴] 晶 [tsiã³³] 晴 [tsẽ⁵⁴] 呈 [tiã⁵⁴] (as in 呈文)
mia chⁿia chⁿe/cheng tⁿia
mia
呈 [t'ĩã⁵⁴] (as in 呈上去) 程 [t'ĩã⁵⁴] 聲 [siã³³]
tⁿia tⁿia sⁿia
sia
成 [siã⁵⁴] (as in 成數) 城 [siã⁵⁴] 羸 [ʔiõ⁵⁴] 領 [niã⁵²]
seng sⁿia iⁿa nia
sia nia/nĩa
井 [tsẽ⁵²] 請 [ts'ĩã⁵²] 靜 [tsẽ³⁵] 整 [tsiã⁵²] 頸 [kẽ¹²]
chⁿe ch'ia chⁿe chⁿia kⁿe
chey
性 [sẽ¹²] 姓 [sẽ¹²] 正 [tsiã¹²] (睛 [tseng] 聘 [p'eng])
sⁿe sⁿe chⁿia chⁿe pⁿia
sey chia
營 [ʔiã⁵⁴]
iⁿa
青: 聽 [tiã³³] 廳 [t'ĩã³³] 青 [ts'ẽ³³] 星 [ts'ẽ³³] 經*[kiã]
tⁿia tⁿia chⁿe chⁿe kⁿia
thia/t'hia tia chey chey kia/keng
鼎 [tiã⁵²] 錠 [tiã³⁵] 醒 [ts'ẽ⁵²] 定 [tiã³²] 逕 [kẽ¹²]
tⁿia tⁿia/teng chⁿe tⁿia kⁿe
tia

Many instances with earlier oral stop endings of different types have shown change of such endings into a glottal stop, which may be considered weakening and is probably one step before total disappearance:

覃: 搭 [taʔ⁴] 合*[hAʔ⁴]
 tá há
 hǎ (相合)/hǎp (合約)
 談: 塔*[tʰAʔ²] 臘 [laʔ] 蠟 [laʔ]
 tʰa lá/náp lá/náp

咸: 劓*[t'ʌʔ²] 插 [ts'ɑʔ⁴]
ch'á
銜: 甲 [kaʔ⁴] 鴨 [ʔɑʔ⁴]
ká á
kǎ ǎh
鹽: 獵 [laʔ²] 接*[tsiʔ] 葉*[çieʔ⁴]
lí/nap chiap hie
lǎ hiě
添: 貼 [taʔ²] 疊 [t'ɑʔ⁴]
tiap tá
寒: 獺 [t'uaʔ²] 辣 [tuaʔ⁴] 割 [kuaʔ²] 葛 [kaʔ²] 渴 [kaʔ²]
t'oa/tat lua kwa kwa/kát k'wa
kuǎ kuǎ
山: 殺 [suaʔ²]
sua/sát
suǎ
刪: 刹*[saʔ²] 瞎*[hAʔ²]
sat hát
仙: 熱 [dzuaʔ⁴]
jua
juǎ
先: 鐵 [t'iʔ²] 噎 [ʔiʔ²]
t'i it
tǐ
桓: 奪 [tɔʔ⁴]
tó/tù
唐: 薄 [pɔʔ⁴]
pó

The overall consistency with respect to the attrition of consonantal endings between Goddard (1883) and Chao'an 1929 further confirms the value of the former. The difference lies in two areas, which seem to contradict each other, but may eventually be interpreted as an indication of the expected more conservative nature of Goddard (1883). There are at least ten cases where Goddard has a /-t/ or /-k/ ending corresponding to the zero ending in Chao'an 1929--歇厥脊 (/t/ in Goddard) and 作若鑰赫格積螯 (/k/ in Goddard), five cases where Goddard has a /-p/ or /-t/ ending corresponding to the glottal stop in the latter--接貼 (/p/ in Goddard) and 剝瞎噎 (/t/ in Goddard); and thirteen cases where the former has a nasal ending corresponding to the

nasalization in the latter--鉗 (/m/ in Goddard), 干爛揀板版纏全燕眩 (/n/ in Goddard) and 蔣牲成 (/ng/ in Goddard). On the other hand, there are two cases of more advanced attrition in the nasal endings in Goddard than in Chao'an 1929--nasalization versus [-ŋ] for 癢 and zero versus nasalization for 請; and eleven cases of the same in the oral stop endings--zero versus glottal stop for 搭答塔臘蠟插甲鴨獵葉疊. The zero stop ending case may be explained as oversight on the part of Goddard in representing the glottal stop with /h/ consistently. In the Introduction (p.vi), it is explained that "when the vowels form the termination, they are pronounced as if a consonant was about to be added but is suddenly cut off. It is sometimes represented by adding a final *h*;...the abruptness results from the nature of the tone, if the tonal mark is used the *h* is not necessary." Therefore, one can still argue that Goddard is more conservative. Furthermore, it is evident from Goddard that attrition began with colloquial words. In the Index appended to the text, it is explained that "in the LIST OF WORDS, the common sound, or that under which it is arranged in the Vocabulary, is first given, and then the Reading sound when it differs from the common, is given in *Italic*" (p.176).

The loss and the retention of nasal and oral stop endings in Chao'an *à la* speaker 2 are summarized in the following chart in terms of number of occurrences (figures in parentheses are from speaker 1):²⁴

		Ru Sheng 入聲 ²⁵				Yang Sheng 陽聲			
		-p	-k	-ʔ	0	-m	-ŋ	ɿ	0
攝 咸	I, II	17(5)	(1)	7(6)	5(2)	49(16)		11(4)	
	覃合	4(3)	(1)	1(1)	3	21(5)		1	
	談盍	2		2(2)	1	12(4)		9(3)	
	咸洽	7(2)		2(3)		10(4)			
	銜狎	4		2	1(2)	5(3)		1(1)	
	III, IV	13(7)	2(1)	3(2)	3(1)	49(13)	5(1) ²⁶	(1)	
	鹽	4(2)		1(2)	2(1)	30(7)	1(1)	(1)	
	嚴	2(2)	1			4(2)			
	添	6(2)		2	1	10(4)	2		
	凡	1(1)	1(1)			4	2		
山	I, II	4(1)	12(2)	7(2)	12(3)		110(23)	33(5)	3(1)
	寒	2(1)	5	(3)		30(4)	13(1)		
	山黠	3(1)	1(1)	1			10(5)	5(1)	

²⁴ The record with speaker 1 was incomplete and stopped in the middle of forms for the Xue 薛 rime (p.41 of Prof. Chao's 方言調查表格). As a result, no forms were recorded for entering tone forms after this rime. In the chart, underlined figures summarize the total number of occurrences in each category.

²⁵ Entering tone forms that have changed their ending consonants into nasals are not included.

²⁶ Speaker 1 has [-n] for one form: 凡 [huan].

	刪轄	1	2	(2)		5(2)		
	桓	4	1	9		46(5)	13(3)	1(1)
	山合	2		3		3(3)		
	刪合	1				16(4)	2	
	III, IV	38(3)	5	14		138(27)	29(8)	1
	仙	12(3)	3	1		43(7)	10(2)	
	元	3		2		4(2)		
	先	8	2	3		29(6)	13(3)	1
	仙合	4		3		29(7)	3(1)	
	先合	3		2		3(2)	3(2)	
宕江	元合	8		3		30(3)		
	I, II	29		18		72(16)	2	1
	唐	14		15		41(5)	1	1
	唐合	1		1		17(5)		
	江	14		2		14(6)	1 ²⁷	
	III	15		5		86(14)	37(2)	1
梗	陽	14		5		64(11)	37(2)	
	陽合	1				22(3)		1
	II, III, IV	1	31		45		98(20)	58(16) 2(1)
	耕麥	3		8		7(2)	2(2)	1
	庚陌II		4		12		9(3)	16(3) (1)
	清	9		17		21(3)	17(3)	2
	庚III					13(1)	4(1)	
	青	13		6		30(6)	10(3)	
	耕合	1		2		2(1)		
	庚II合			1				1(1) 1(1)
曾	清合					3(2)	1(1)	
	庚III合							10(1) 7(2)
	青合	1					2(1)	
	I, III	44		3		50(14)	1(1)	
	登	17		1		21(7)		
	蒸	27		2		29(7)	1(1)	

It is quite evident that the Chao'an data confirm our general observation that attrition of consonantal endings is prevalent in forms derived from the Ancient Outer rimes.²⁸ Whereas forms derived from the Shen rime group preserve a [-p] ending, only 58% of those derived from Division I or II and 62% of those derived from Division III or IV of the Xian rime group have [-p] while 24% have a [-k] or [-ʔ] ending and 17% (I/II)/14% (III/IV) lost the ending altogether. Whereas forms derived from the Zhen rime group end with a [-k], only 34% of those derived from Division I or II and 81% of

²⁷ This form [c'iẽ] 腔 has a palatal medial and a mid-high vowel, just like those in the Yang rime.

²⁸ As expounded in Yue-Hashimoto (1982, 1995).

those derived from Division III or IV of the Shan rime group end with [-k], while 20% (I/II)/9% (III/IV) end with [-ʔ], and 34% (I/II)/37% (III/IV) have shed the ending. Whereas forms derived from the Tong rime group preserve a [-k] ending, 38% of those derived from Dang I and the Jiang rime, and 25% of Dang III have lost the ending. Whereas only three out of 47 forms derived from the Zeng rime group lost the [-k] ending, 45 out of 76 forms, or 59% of those derived from the Geng rime group lost the ending altogether. This is by no means accidental: the loss of the oral stop ending was conditioned by the tenseness of the vowel. The association of a tense vowel and a lax ending in the Outer rimes and the opposite in the Inner rimes has already been argued elsewhere.²⁹ It is phonetically plausible for the Outer rimes to shed the endings first. A second condition for the attrition of the oral stop ending is the lowness of the vowel. This is borne out by the fact that more forms derived from Division I or II have undergone a weakening or loss of the ending, as seen in the Xian, the Shan and the Dang rime group. This means that such weakening or loss must have first occurred in the phonetic context of following a low vowel before it spread to cases with other phonetic environment. Bodman (1982) made the same assumption based on observation of 19th century texts.

While the tense versus lax distinction is still the major conditioning factor for the attrition of nasal endings, as seen from the above list that all but one nasalized finals developed from the Outer rimes; the low vowel conditioning factor seems to be operating differently. While forms derived from the Shen rime group bear an [-m] ending, 18% of those derived from Division I or II of the Xian rime group bear nasalized finals; however, 91% of those derived from Division III or IV (including the Fan 凡 rime, which has a low vowel in modern Chao'an but must have had a higher vowel at an earlier stage) bear an [-m] ending. This strongly supports the low vowel conditioning factor, which essentially agrees with Matthew Chen's study almost two decades ago that nasal vowels "tend to occupy the lower portion of the vowel space."³⁰ The case of the Zeng versus the Geng rime group also supports this conditioning. While none but one out of 51 forms from the Zeng rime group has a nasalized final, 35%(58) of the forms (158) from the Geng rime group have nasalized finals. In addition, in the latter rime group, it is the colloquial forms that carry a lower vowel that underwent nasalization, whereas the literary forms retain the [-ŋ] ending but has a higher vowel. For example, almost all nasalized forms in Division II bear the vowel [ɛ] and most of those in Division III or IV bear the glide plus vowel [ia], while the rest bear the vowel [e]. However, the case is not as strong in the Zhen versus Shan rime

²⁹ See Hashimoto (1978).

³⁰ See Chen (1975). The case of the Fan rime as an exception could be due to the fact that at an earlier stage, it had a higher vowel as in the Open Division III or IV rimes.

groups. While forms derived from the Zhen rime group bear an [-ŋ] ending, 30% of those derived from Division I or II and 21% of those derived from Division III or IV of the Shan rime group have nasalized finals. Here the rate of attrition does not differ significantly between the two groups of Divisions, but still more of those from Division I or II underwent the change. The case seems to be reversed in the Tong versus Dang-Jiang rime groups. While forms derived from the Tong rime group retain the [-ŋ] ending, those from the Dang rime group bear nasalized finals almost exclusively in Division III. Even if the Yang rime might have had a low vowel at an earlier stage, one cannot explain why the low vowel in Division I or II did not cause the ending to weaken.

Perhaps we should re-examine the low vowel as a conditioning factor of the attrition of nasal ending. We shall first list the modern finals with nasal ending below (exceptions are given within parentheses):

Xian	I, II	am (iəm)			
	III, IV	iəm (iam, ien)	Shen		im (iŋ) ³¹
	CIII	uam, uaŋ			
Shan	I, II	aŋ	Zhen	I	uŋ, uŋ
	III, IV	ien (ien) ³²		III	iŋ, uŋ (in)
	CI, II	ueŋ (uaŋ, uiŋ)		C	uŋ
	III, IV	ueŋ (uaŋ, uŋ, uiŋ)			
Dang	I	aŋ, uŋ	Tong	I	aŋ, oŋ—
	III	iaŋ, uŋ		III	oŋ, ioŋ, eŋ
	C	uaŋ			
Jiang		aŋ, (uaŋ, uŋ)			
Geng		eŋ	Zeng	I	eŋ (aŋ)
	CII	oŋ, uaŋ		III	eŋ (iŋ)
	CIII	ioŋ, uaŋ			

As we shall see in the following section, forms from Division I or II of the Xian rime group became nasalized chiefly in the rimes that had a long vowel (*à la* Karlgren) in Ancient Chinese. Therefore, the conditioning factor for the attrition of -m was not the lowness of the vowel but the length of the vowel. As far as forms from the Shan rime group are concerned, since there is not much difference in the percentage of nasalization among the descendants of all Divisions, the conditioning factor for nasalization must have been tenseness of the vowel and not the lowness. Now, if at the

³¹ [-iŋ] occurs with labial initials only.

³² [-ien] occurs with labial initials only.

time when the process of nasalization took place, the nasal endings of forms from both the Shan and the Dang-Jiang rime groups were the same, namely [-n] has coalesced with [-ŋ], we cannot understand why nasalization did not take place in Division I or II of the latter. Rather, it must have been the case that the nasal endings were distinct--[-n] for Shan versus [-ŋ] for Dang-Jiang, so that only those with the dental ending underwent nasalization.

If this were the case, we still have one problem. How did nasalization in forms from Dang III come about? To solve this final problem, we think that the nasalization process took several stages and had different conditioning factors for the attrition of the different nasal endings. In addition, the merger of the dental nasal ending with the velar one took place during the midst of this nasalization process. There must have been four stages.

The attrition of the [-m] ending and nasalization took place first and the conditioning factors were tenseness and length of the vowel, as expressed in Rule 1:³³

Rule 1. $[+tens, +long] + m > \tilde{a}$

Only forms from the Double rimes of the Xian rime group that had long vowels were affected.

Next came the attrition of the [-n] ending and nasalization and the conditioning factors were tenseness and lowness of the vowel,³⁴ as expressed in Rule 2:

Rule 2. $[+tens, +low] + n > u\tilde{a}$

Only forms from Division I or II of the Shan rime group were affected.

At this stage, the merger of [-n] with [-ŋ] took place, so that all forms derived from the Shan rime group now bore the velar nasal ending, unless they had become nasalized by Rule 2. This merger may be expressed in Rule 3:

Rule 3. $[-n] \quad > \quad [-\eta]$

³³ Longer vowels, like tense vowels, are more likely to cause the weakening and the loss of ending consonants. Nasalization may be considered compensation for the loss of nasal endings, and it is therefore more likely to occur with longer and tenser vowels.

³⁴ Professor William Wang supported the idea that lowness of a vowel may be a factor for nasalization, since the lowering of the velum is more likely to be brought about by lower vowels.

It was only after this that the attrition of the [-ŋ] ending took place and the conditioning factors were tenseness and non-lowness of the vowel, as expressed in Rule 4:

Rule 4. [+tens, -low] + ŋ > ɤ̃

We must also assume that by this time, phonetically the vowel in forms from the Yang rime must have become higher due to the influence of the medial [-i-]. Since the resultant nasalized final is [ĩẽ], this is not difficult to prove. By Rule 4, forms from the Yang rime, from Division III or IV of the Shan rime group as well as those from the Geng rime group also underwent nasalization, and their respective resultant finals are [ĩ]/[õ] and [ẽ]/[iã]. We also assume that by this time the vowel of forms from these latter rime groups were non-low.

We thus conclude that although the attrition of the oral stop and the nasal endings seems to be alike, it is in fact very different--much more complicated for the latter, and the only common conditioning factor for both types is the tenseness of the vowel inherited from the Ancient Inner versus Outer distinction. An outcome of this investigation into the nature of the process of nasalization led us to the assumption that there was an earlier three-way distinction among the nasal endings in Chao'an.³⁵ Consequently, based on the general distributional pattern of consonantal endings across the Chinese dialects, there must have been a three-way distinction among the oral stop endings too.

Before we leave this section, it must be emphasized once more that attrition occurred largely with colloquial forms. Where there is a colloquial versus literary distinction for the same form, it is usually the former that underwent attrition. For example, the colloquial pronunciation of 貼 is [tɕʰ²] but the literary pronunciation retains the [-p], namely, [tiɐp]; and the colloquial pronunciation of 天 is [t'ĩ] but the literary pronunciation is [t'ien].

8. Some residue of Archaic distinction

It is well known that, apart from some Wu dialects (such as Wenzhou, Shanghai, Ningbo), the double rimes in the Ancient Xian rime group are not distinct among the modern Chinese dialects. Although Karlgren acknowledged several forms with nasalized finals in Shantou 汕頭 occurring in the Tan 談 rime, he did not make use of

³⁵ Whether this state of affairs occurred in proto-Chao'an or proto-Southern Min or even earlier will not be of our concern here, since this question can be addressed only after a comparison of similar processes of phonetic change among all the Southern Min dialects is completed.

this fact in his reconstruction of the distinctions between the double rimes. Yet he reconstructs the distinction between the double rimes in Divisions I and II as length of the vowel on analogy of the same between such double rimes in the same divisions in the Xie 蟹 rime group in Sino-Korean which is manifested by the length of the vowel. As already pointed out elsewhere, this reconstruction can actually be well supported by evidence from the Southern Min dialects.³⁶ For what Karlgren reconstructs a long vowel--the Tan 談 and the 銜 rime derived mainly from the Archaic Tan 談 rime category, the Southern Min dialects show changes in the nasal endings faster; and for what he reconstructs a short vowel--the Tan 覃 and the Xian 咸 rime derived mainly from the Archaic Qin 侵 rime category, these dialects generally keep the nasal endings.

This situation is confirmed in Chao'an, in Dean (1841), in Goddard (1883), as well as in the rime dictionary. For these double rimes, the following forms bear the nasalized final [ã] in the Chao'an dialect:³⁷

談: 籃三柑膽淡攪敢擔
銜: 衫

Elsewhere the final [-am] occurs. Dean (1841) concurs in the shedding of the ending [-m] and an open final /-a/ is found with the following forms:

談: 擔藍籃三柑膽攪敢橄
銜: 衫

whereas Goddard (1883) has the nasalized final /ⁿá/ for the following forms:³⁸

談: 擔藍籃三柑膽淡攪敢橄
銜: 衫

In the rime dictionary, all forms listed above are placed under the 柑 rime, whereas all others are placed under the 甘 rime.

For forms derived from Entering Tone syllables, there does not seem to be much difference between forms derived from the said double rimes. In Chao'an, for example, the following have the open final [-a]:

³⁶ See Yue-Hashimoto (1982), section 3.

³⁷ The only form bearing a nasalized final in the Tan 覃 and the Xian 咸 rime is 蠶, [ts'õĩ], which constitutes an exception throughout the Southern Min dialects. See Yue-Hashimoto (1982).

³⁸ The superscript /ⁿ/ is omitted whenever the initial is a nasal.

談: 塔 (speaker 2)
銜: 甲閘鴨 (speaker 1)
覃: 踏拉合 (as in 合攏)
咸: 閘

and the following have a final with a glottal stop [-aʔ]:

談: 塔 (speaker 1) 臘蠟
銜: 甲鴨 (speaker 2)
覃: 搭
咸: 割 (speaker 1) 插³⁹

This is probably due to the fact that attrition of the oral stop ending consonants is much more advanced than that of the nasal, so that no more distinction is discernable.

In Dean (1841), the open final /-ǎ/ occurs with the following forms:

談: 塔
銜: 甲鴨
覃: 踏合

And in Goddard (1883), the open final /á/ occurs with the following:

談: 塔臘蠟
銜: 甲呬鴨閘
覃: 搭踏拉合
咸: 插閘

In the rime dictionary, forms that have shed the /-p/ ending are placed under the Jiao 膠 rime while those that keep the said ending are placed under the Gan 甘 rime.

9. Epilogue

The richness and accuracy of the 1929 field materials of the late Professor Chao provided us with a tool for reconstructing the phonological history of individual dialects. The Chao'an materials described here presented but one example of how

³⁹ The form [ʔoiʔ] listed as the colloquial reading of 狹 may be better interpreted as related to 隘 derived from the Jia 佳 rime which has some forms with the final [oi].

valuable these data are in determining not only the various stages of the attrition of ending consonants but also furnishing evidence for the until now unresolved problem of the number of distinctions among these ending consonants.

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