

The Status of Suprasegmentals and Other Syllabic “Accessories” in Taiwanese Riming Schemes*

1. Forward

One way to discover the native intuition in a language is to analyze the end products of its unconscious prescriptions. The prescriptions under discussion at present are the riming schemes, and their products are folk oral literary works. The language concerned is Taiwanese Hokkien (hereafter Taiwanese).

Taiwanese oral literature that provides material for this study of the riming schemes includes improvised songs, nursery rhymes,¹ riddles, and sayings. There are other genres of the folk literature that rime, such as pop songs, tongue twisters, and poems in stories. However, except for pop songs, there are not enough data available. They are therefore excluded from the present study. The exclusion of tongue twisters and poems will not alter the result of the study however, for so far as the limited data of tongue twisters (e.g., Text 1) and folk poems (e.g., Text 2) have shown, the riming of these is governed by the same prescriptions. As for pop songs, old and new, they were assumed to be not different from improvised songs in their riming schemes when data was first collected for the study. Li Jen-kuei's (1986) rich data unfortunately show that pop songs are in many ways different from all the other genres mentioned above. They take more freedom to allow assonance and riming between neighboring vowels and to consider much less the riming between nasalized syllables, the riming schemes that are not traditional in Taiwanese folk literature. The following discussions, therefore, also do not include the data from pop songs. Improvised songs can further be classified as love songs, didactic songs, and descriptive and narrative songs. Except for love songs, many of which are improvised responsively, the other types are improvised by single singers. Sayings also consist of various types, such as proverbs, comments and criticisms. They only differ in content but not in form and thus are not analyzed separately.

The analysis endeavors to scrutinize the Taiwanese ways of treating tones and other syllabic constituents in riming. To enhance the reader's understanding of the presentation, a brief analysis and classification of Taiwanese syllables is presented here. A Taiwanese syllable is represented as maximally consisting of an initial, a medial, a nuclear vowel, an offglide, a tone, nasalization, and glottalization (IMVOTND). Structurally it is (I) (M) V (O) T (N) (D). The various types and sizes of segments of syllables that concern this paper are schematized as the

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The independent researches of Professor Li, Professor Cheng, and my own research have the following findings in common: in Taiwanese riming, tones, the glottal stop ending and nasality are often ignored, but medials are for the most part kept as distinctive. Yet, we find different implications in our studies. Professor Li cautions historical linguists not to rely indiscriminately on riming. Professor Cheng (1986b) in a reference to his (1986a) paper suggests the possibility that Taiwanese native speaker intuition concerning nasality has changed in the past few decades.

¹A distinction between *rime* and *rhyme* is deliberately made here. The original *rime* refers to such skill of versification, and *rhyme* a literary genre.

following:

Yin Syllable:	(I) (M) V (O) T (N),	where N is not a consonant.
Yang Syllable:	(I) (M) V (O) T N,	where N must be a consonant.
Ru Syllable:	(I) (M) V (O) T D,	where D is not a glottal stop. ²
Tsu Syllable:	(I) (M) V (O) T (N) D,	where D is a glottal stop.
Syllabic:	(M) V (O) T (N) (D)	
Syllabic type:	(M) V (O) (N) (D)	
Final:	V (O) (N) (D)	

Only identical nuclear vowels (V) rime. There are cases in the contemporary popular songs where syllabic types such as *ang* and *ong*, with various tones, are thrown into the positions where they are supposed to rime. But even with the freedom given to pop songs for neighboring vowels to rime, the native speakers do not consider them riming (cf. Text 3). Instead, Text 3 is considered as using two rimes rather than one. Consonance does not enter into the riming schemes in Taiwanese.³ It is taken for granted, and therefore no further study of nuclear vowels in Taiwanese riming schemes is necessary.

In addition to nuclear vowels, offglides (O) and final consonants ((N)(D)) are also required to be identical in Taiwanese riming. That is to say, in principle, syllables with finals (VOND) like *ai*, *au*, *am*, *an*, *ang*, *ap*, *at* and *ak* only rime with syllables with *ai*, *au*, *am*, *an*, *ang*, *ap*, *at* and *ak* respectively. Any failure to do so is said by the children to be not *tàu-sì-kù* (<*tàu-sì-kù* 鬥詩句) ‘riming’, though adults take freedom to violate the rule (cf. Section 3.5). Since such cases of assonance as *in* riming with *ing* (Li Jen-kuei 1986:Section 2.9.1) are rare, exceptional, and questionable, they are ignored in this study. As for syllabic initial consonants (I), they are never considered in the riming schemes. Their exclusion from consideration is probably universal, and the only exceptions are stylistic which involve refraining (e.g., Text 4). Rime riche is not a demonstration of skill like in Western literature (e.g., Text 5), but a betrayal of poor workmanship.

So far, there remain medials (M), glottalization (D), nasalization (N), and tones (T). These “accessories” will be taken up immediately. They are graphologically presented as the following:

Medials: *i*, *u* before *i*, *o* before *a* and *e* Glottalization: *Vp*, *Vt*, *Vk*, *Vh* for tone D1,
Ṽp, *Ṽt*, *Ṽk*, *Ṽh* for tone D2.

Nasalization: *Vⁿ*.

Tones: A1 unmarked; *Ṃ* for A2; *Ṃ* for C1; *Ṃ* for C2; *Ṃ* for B. Extra tones are

²That is, glottalization accompanied by a closure at some point of articulation other than the glottis.

³In Chang Yü-hung (1980:147), I state that if 疏 is to enter into the riming scheme with 勞, 好, and 何 as *so*; *lô*, *hó* and *hô*, the song must have been improvised by a person who did not distinguish the low-back rounded *o* from the mid-back round *o* (phonetically mid-back unrounded in Tainan and Kaoshiung area). Li Jen-kuei (1986:Section 2.10) supplies much more examples and says in Section 3 that besides the possibility of confusing the two vowels, they may be cases of loose riming. If he is right, then we may happily say that 說 in Chang Yü-hung *ibid.*:196 could be meant to be read as *soeh*, with a contrastive mid-back unrounded vowel, and thus could loosely rime with 波 *pho* and 無 *bô*.

Combing through Carstairs Douglas’ *Chinese-English Dictionary of the Vernacular or Spoken Language of Amoy* for *o* and *o*, I found not only that Amoy *o* is (or was) in many cases *o* in “Chinchew” (Jinjiang) but also that in Amoy itself there are many doublets with the minimal differences between *o* and *o*, mostly labeled as reading versus colloquial by Douglas. Some of these doublets in Chinchew are also recorded. In Sung’s (1986) description of the dialect of “Zhangpu” (Jangpu), from where my *tâg-soaⁿ-chó* (唐山祖 first ancestor to emigrate from China) came to Taiwan, there are no *o* nor *o* syllabic types what so ever. The equivalent of these syllabic types is uniformly [ou]. When immigrants who distinguished the non-high back rounded vowels, those who confused these vowels, and those who did not know such vowels came and mixed on this island, more confusion is suspected to have occurred.

As such, I still would like to consider such cases of riming between *o* and *o* as resulting more form confusion than violation.

high-rising marked with \check{V} , high-rising glottalized with $\check{V}p$, $\check{V}t$, $\check{V}k$, $\check{V}h$, rising-falling with $\check{V}\cdot\check{V}$, falling level with $\acute{V}\cdot\acute{V}$, high-falling glottalized with $\acute{V}p$, $\acute{V}t$, $\acute{V}k$, $\acute{V}h$, mid-level glottalized with $\hat{V}p$, $\hat{V}t$, $\hat{V}k$, and high-level glottalized with $\check{V}p$, $\check{V}t$, $\check{V}k$. The last two are limited to Japanese loans in non-final positions.⁴

2. The Account

The approach of the present analysis is to count riming pairs with regard to identical or different tones, oral vowels or nasal vowels, glottalization or otherwise, and plain or yotization/labialization. The data for the counting are mainly from Wu Ying-t'ao (1975), Li Hsien-chang (1978), and Chang Yü-hung (1980), which are not all-embracing but are sufficient for the purpose of this paper. A total of 2969 pairs are identified.

The criterion for establishing the pairs is to take the final syllable of the first sentence or phrase that enters the riming scheme to pair with its following final syllables that enter. For instance, in Text 6 where *koe*, *hé*, and *pē* rime, *koe* and *hé* form a riming pair, and *hé* and *pē* another, thus two pairs for this saying. The former pair is noted as “plain” syllabic, i.e., without medial, riming with labialized syllabic ([Plain R Labial]), and the latter as [Plain R Plain]⁵. Both of them are also noted as riming between syllables of different tones. The pairs are then classified and calculated according to the types of riming so identified and according to the frequency of occurrence.

Take the yin syllabic types (*M*)*a* with their nasalized and glottalized counterparts for example. The pairs they form in sayings are listed in this manner as in Fig. 1–3. The syllabic types to the left of the chart are those of the rimed syllables, and those on the top are of the riming syllables.

The pairs *a-a*, *á-á*, and *ah-ah* in Fig. 1, each occurring three times, indicate that identical syllabics, with identical tones, predominate in this group of riming, though the totals of individual identical and different pairs are almost the same: 12 identical against 11 different. Figure 1 also contains the riming between “plain” syllables and syllables with medials, i.e., two cases of [Plain R Labial] and one case of [Plain R Yod]. Fig. 2 has 10 identical pairs against 12 different ones, but again it is not disappointing, for there are concentrations of identical pairs. The pairs *oàⁿ-oàⁿ* and *oāⁿ-oāⁿ* again show that identical-pair riming is favored. Fig. 3 is the most exciting of the three. First, there are more pairs to show a clearer picture of the favored riming schemes. Second, its bigger difference in the number of identical versus different syllabics (32 against 23) implies that when the corpus of data is enlarged, Fig. 1 and 2 will have more pairs of identical syllabics. This, in effect, is the case, as can be deduced from Fig. 4.

⁴For instance, *át-sa-lih* (<あつさり) ‘clear-cut; straightforward’ and *siát-toh* (<セツト) ‘to set, as hair’.

⁵This criterion may not be perfect, but it is proved to be sound. There are two other criteria that can be used. The first is to use the very first occurrence of the syllable that enters the riming scheme as a norm, no matter how many pairs there are. Take Text 6 for example. The first such syllable is *koe*. Using it as the norm, we have two pairs, *koe-hé* and *koe-pē*. This criterion is equally good except for longer works where the riming pattern seems to be a kind of “follow-up”. The other criterion is to judge from the overall pattern of the riming scheme to choose a norm. For instance, in Text 5 the syllabic type *ang* appears to be predominant. It is therefore chosen to be the norm. Using this criterion, we may know better the author’s intention in riming, but there are two problems with it. It is too subjective, and as it cannot provide us with a normal syllabic, it cannot indicate which tone is to be the norm either. Though these other criteria could alter the counting and classification of riming pairs, the difference is expected to be slight, for the behaviors of the “accessories” in riming will not change.

Some finer categories other than whether the riming is between syllables with identical or different syllabics are established for the analysis of the riming schemes. In the explanation above on the criterion for counting where Text 6 is used as an example, the riming between identical “plain” syllabics ([Plain R Plain]) and that between “plain” syllabics and syllabics with medials are noted. In the three figures just discussed, as counted above, there are 54 cases of identical-syllabic riming and 46 cases of different-syllabic riming. There are 4 pairs where the first syllables have oral vowels whereas the riming syllables are glottalized ([Oral R Glottal]), and 3 pairs the other way around ([Glottal R Oral]). There are 2 pairs of oral syllables riming with nasalized syllables ([Nasal R Oral]), and there is an equal number of the reverse ([Oral R Nasal]). There are also 2 pairs where the rimed syllables are “plain” without medials but the riming ones have a labialized medial ([Plain R Labial]), and 1 pair where the riming syllable has a yotized medial ([Plain R Yod]). And so on.

Other categories are also established according to other kinds of riming pairs in the counting, the details of which are not given in this paper. All the riming pairs identified from the data are entered in the same way as in Figs. 1–3 according to these categories and according to the genres. They are then calculated and listed in Fig. 4. As vowels following nasal initials are nasalized, special attention is paid to such [N-] syllables and the riming pairs they form. Their behavior in riming is also entered numerically in the chart.

Fig. 4. The Account of the Total Riming Pairs

	LV	DD	DN	Sub-total	SA	NR	RD	Sub-total	Total
Identical Tones	73	27	60	160	453	403	255	1111	
Different Tones	187	291	660	1138	310	126	124	560	
Oral R Glottal	6	13	25	44	6	4	6	16	
Glottal R Oral	4	5	20	29	8	4	0	12	
Glottal R Glottal	1	1	7	9	27	41	17	85	
Glottal R Nasal	0	0	0	0	1	2	0	3	
Nasal R Glottal	0	2	0	2	0	4	0	4	
Oral R Nasal	1	7	11	19	5	11	8	24	43
Nasal R Oral	0	4	3	7	15	6	2	23	30
Nasal R Nasal	27	40	17	84	96	51	50	197	281
N- R Nasal	5	6	3	14	7	1	5	13	27
Nasal R N-	3	4	7	14	25	11	11	47	61
N- R N-	1	0	0	1	0	0	2	2	3
N- R Oral	2	0	0	2	4	0	1	5	7
Oral R N-	2	0	6	8	2	1	0	3	11
N- R Glottal	0	0	0	0	0	1	0	1	1
Glottal R N-	0	0	0	0	1	0	0	1	1
Plain R Yod	0	0	1	1	2	0	0	2	3
Yod R Plain	0	0	1	1	0	0	0	0	1
Plain R Labial	0	0	0	0	8	1	4	13	13
Labial R Plain	0	2	0	2	0	3	0	3	5
Yod R Labial	0	0	0	0	0	3	0	3	3
Labial R Yod	0	3	0	3	0	0	1	1	4
Medial R Medial	62	55	172	289	91	127	108	326	615
LV=love songs					SA=sayings				
DD=didactic songs					NR=nursery rimes				
DN=descriptive and narrative songs					RD=riddles				

3. Interpretation and Remarks

3.1 Tones

Three groups of syllables, oral, nasalized, and glottalized, are identified for the analysis of riming with regard to tones. Oral and nasalized open syllables, i.e., yin syllables, are distributed mostly in the five-tone tone system, A1, A2, B, C1, and C2. There are exceptions, such as in Text 7, where the high-rising extra tone even forced the C2 tone in the last syllable to assimilate. Glottalized syllables occur with either of the other “regular” tones, D1 or D2. There are still no examples of using extra glottalized tones in riming.

Glottalized syllables are of two types, ru and tsu. They behave very differently regarding riming. In the Taiwanese riming schemes D1-ru syllables (hence D1-ru) may rime with either D2-ru or D1-ru. So may D2-ru. They do not rime with yang syllables, tsu syllables, or yin syllables, because the stop endings in the oral channel are phonetically conspicuous and phonologically primary. On the other hand, D1-tsu and D2-tsu do not only rime with one another but also with yin syllables of different tones, whether oral or nasal. They do not rime with yang syllables because the nasal endings of the latter are also conspicuous and primary. In other words, there is no assonance except when the glottal stop is involved. Only when the final stops are glottal can these syllables rime with open syllables, which have the other tones A1, A2, B, C1, C2; otherwise, there are no interactions between the various autonomous riming schemes.

Besides their autonomy and interaction as conditioned by syllabic types, tones are also affected by the genre of literary works in their behavior in the riming schemes. Fig. 4 shows a clear difference between singing (LV, DD, DN) and citation (SA, NR, RD). In songs, the cases of riming between identical tones are relatively rare, 160 out of 1298 cases, which constitutes only 12%. It is only incidental. In proportion to riming between different tones, it is 1/8. It is just the opposite for sayings, rhymes and riddles. There are more cases of identical-tone riming (1111 cases) than different (560 cases), 2 to 1 in proportion. Actually the result is not unreasonable. In songs, tones tend to be leveled off. The disregard of tones is universal in non-archaic Chinese singing, probably with the only exception of the Sung poetry *tsz* (詞),⁶ but not in chanting, where it is the tones that decide the physical appearance of the melody. Tones are therefore not a consideration in singing. Such as it is, in citation the story is otherwise. If we give each tone an equal opportunity to occur, the proportion between identical-tone riming and different-tone riming will be 1 to 1 for ru syllables, 1 to 4 for yang syllables, i.e., [A1 R A1] versus the sum of [A1 R A2], [A1 R B], [A1, R C1] and [A1 R C2], and 1 to 6 for others, i.e., [A1 R A1] versus the sum of [A1 R A2], [A1 R B], [A1 R C1], [A1, R C2], [A1 R D1-tsu] and [A1 R D2-tsu]. In actual riming the chance is even greater for different-tone riming, for it thus avoids the risk of rime riche (cf. *hidh* in Text 8). Nevertheless, in citation, since tones are kept everywhere, the identical syllabics, with the same tones, are preferred for riming. This probably is where skill is tried and where refinement is aimed at (again see Text 7).

3.2 Glottal Stop

Like tones that are leveled, glottal stops are deleted in songs. In the lyrics of songs, the riming between syllables with glottal stops ([Glottal R Glottal]) are rare and may be accidental, just like the riming between syllables of the same tones discussed in Section 3.1. There are only 9 such occurrences out of the 82 pairs of riming involving the glottal stop. It is, however, not so in citation, where it seems that the language artists strive to make the two groups of syllables distinctive. In citation there is a high frequency of tsu syllables riming with tsu syllables ([Glottal R Glottal]), such as in Text 9. Of the 113 pairs of riming involving the glottal stop,

⁶The concern in *tsz*, however, is only whether a syllable is with an even tone or with an oblique tone according to the melody. And the requirement could be artificial in later days after the pitch contours of tones had changed.

85 are such cases. Only 28 occurrences show riming between tsu syllables and open syllables ([Glottal R Oral, Oral R Glottal]). For examples see Texts 10 and 11.

There are about 25% of the cases of [Glottal R Oral] and vice versa, in which most of the tsu syllables are in D2. There are two reasons for it. First, in certain dialects in Taiwan, many glottal stop endings in D2-tsu's are lost or are in the process of being lost.⁷ If they are lost, it is natural for the syllables to rime with open syllables, for they are now open. Second, common words with final D1-tsu syllables in the folk poetic lexicon seem to be comparatively fewer than D2-tsu, and thus D2-tsu syllables have relatively more chances to occur. This, however, needs to be confirmed by further studies.

The retention of the glottal stop in D1 is strong indeed. For this matter, bilingual rhymes are specially chosen as an illustration of the prominence of this syllabic ending. Japanese syllables with only nuclear vowels in the peak (*tan'on*) when occurring in final positions always have a glottal stop ending in the Taiwanese version, and the pitch is identical with D1 in most dialects. These Japanese short syllables are utilized to rime with D1-tsu syllables in Taiwanese or vice versa (e.g., Text 12).

The riddle in Text 13 is another illustration of the case. There are four syllables that rime, *si*, *khih*, *Pī*, and *bih*, of which the latter three are the main ones. What happens is that the two tsu syllables compels the children to add a glottal stop to *Pī*, yielding *Pih/Pih*, without changing the pitch, which is the same as either D1 or D2 depending on dialects. After all, *Pī* here is just a personal name. Changing it to *Pih/Pih* does not alter a bit the meaning of the verse.

The glottal stop is in many ways different from other stop endings. It is treated as a suprasegmental feature in this paper. As mentioned in Section 2, syllables with stop endings only rime with syllables with the same stop endings. As such, ru syllables may not rime with homorganic yang syllables. However, tsu syllables may rime with yin syllables. This seems to indicate the native feeling of glottal stops as some sort of suprasegmental feature analogous to tones, that is, glottality rather than stoppage.⁸ After all, the stoppage is too deep in the throat for the phonetically non-initiated to feel the occlusion. Secondly, unlike other final stops which are always retained in discourse, glottal stops are normally lost intervocally. Thirdly, unlike nasality, glottal stops are often lost even in positions other than intervocalic, or are added to syllables where historically there is no motivation for them to occur. And fourthly, structurally the glottal stop corresponds with nasalization in the way that other final stops correspond with final nasal consonants. That is, in the phonological system of Taiwanese, the (M)V(N)(D) syllabic types, except for systematic gaps, fall into paradigms like Fig. 5. Moreover, tsu syllables are either oral or nasalized. They are also the only checked syllables that can have a nasal initial. The nasalized tsu syllables are cases of the coarticulation of glottalization and nasalization, such as in the case of *hehⁿ* 'to scare'. There is, however, no coarticulation of a final nasal and a [–low] stop consonant in Taiwanese except for the cases where nasalized syllabic peaks followed by other stop endings such as *apⁿ*, which is possible but not contrastive. For these reasons, the glottal stop ending is better treated as a realization of glottality that is superimposed on open syllables.⁹ Such syllables are realized as open syllables having the two

⁷Confusion probably is a better explanation. Some speakers, besides deleting the glottal stop ending in certain D2 words, will add it to certain others, e.g., *káu-hidh* (<*káu-hiā*) 'ant', *séⁿ Tidh* (<*séⁿ Tiō*) 'surnamed Jau'. And in onomatopoeias C2 and D2-tsu are often interchangeable, e.g., *kiⁿ-kiⁿ-koāiⁿ-koāiⁿ* ∅ *kiⁿ-kiⁿ-kodihⁿ-kodihⁿ* 'repeating squeaky sound'.

⁸Henderson (1950) treats the glottal stop in Siamese as an application of the prosody *plosion* on the consonant *zero*.

⁹This statement could be controversial. If the skewed paradigm in Figure 5 is rearranged in a more symmetrical pattern:

a	ah/áh	ap/áp	at/át	ak/ák
a ⁿ	ah ⁿ /áh ⁿ	am	an	ang

the nature of the glottal stop being suprasegmental could be argued against, for it now appears that the final glottal stop is but a syllabic ending that can follow either an oral vowel or a nasal vowel. Nevertheless, this

tones D1 and D2 in the riming schemes.¹⁰

Fig. 5. (M)V(N)(D) Syllabic Types

	Open	Velar	Dental	Labial	Regular Tones
Orality	a				5
Nasality	a ⁿ	ang (ng)*	an	am (m)*	5
Glottality	ah/áh	ak/ák	at/át	ap/áp	2
Coarticulation	ah ⁿ /áh ⁿ	(ngh/ńgh)*		(mh/mńh)*	2

a=any V. * =syllabic nasals.

Hashimoto (cf. Hashimoto 1979) has been arguing for the interpretation that the stop endings are “tonal variants of their corresponding homorganic nasals” (ibid.:278), and my 1978 version of Taiwanese syllabic analysis (Chang Yü-hung 1980:11), though distinguishing glottality from tones, agrees with Hashimoto’s view in that it is suprasegmental. I then interpreted stop endings as the glottalization of nasal consonantal endings at different points of articulation in the oral cavity, which do not include syllabic nasals m and ng. That is, $Vmh > Vp$, $\acute{V}m > \acute{V}p$, $Vnh > Vt$, $\acute{V}ngh > \acute{V}t$, $Vngh > Vk$, $\acute{V}ngh > \acute{V}k$. This accounts for “the denasalization on the part of the stop series” (Hashimoto 1979:279). What escaped Hashimoto’s attention is the coarticulation of nasality and glottality such as Taiwanese Vh^n , $\acute{V}h^n$, mh , $mńh$, ngh , and $ńgh$. Owing to the presence of the coarticulation of nasalization and glottalization, it would be more fruitful now to interpret the stop series as the realization of glottality at different points of articulation, as in Fig. 5.

3.3 Vocal Nasalization

Different from tones and glottalization, nasalization is a feature rather strictly kept in riming no matter whether in songs or in citations. In other words, there is a high frequency of nasalized syllables riming with syllables of the same kind. Of the 112 nasalized pairs in songs, 84 are cases of [Nasal R Nasal] or 75%. Comparing with tones and glottalization in songs, this is a very exciting percentage. The figure is a little larger in citation, 197 out of 244, making 81%. The difference may not be significant, but the similarity is meaningful, for nasality does not disappear in singing and chanting, although it is suprasegmental in nature. The retention accounts for the high probability of [Nasal R Nasal]. For an example of [Nasal R Nasal] see Text 14, and for the riming between nasalized and non-nasalized syllables see Text 15 and 16.

There are always more cases of riming between syllables with nasal initials ([N-]) and nasalized syllables with other initials ([Nasal]), that is, [N- R Nasal] and [Nasal R N-], than cases of riming between these [N-] syllables and non-nasalized syllables, that is, [N- R Oral], [Oral R N-], [N- R Glottal] and [Glottal R N-]. The difference is as great as 6 to 1 in citation, greater than the proportion between these types of riming and the riming between [Nasal] syllables and oral syllables, that is, [Nasal R Oral] and [Oral R Nasal] discussed in the preceding paragraph, where it is 4 to 1.

The high frequency of [N- R N-, N- R Nasal, Nasal R N-] is worth noting. Syllables with nasal initials have been treated in three ways in phonology. They are considered as having nasal initials and oral syllabics (*ma*, etc.), as having oral initial and nasal syllabics (*baⁿ*, etc.),

arrangement disturbs the neat pattern of tonal distribution, which is meaningful in the first paradigm (Figure 5), that is, there are only two regular tones when glottality is present and five when it is absent. Besides, and most importantly, the suprasegmental nature explains better the status of the glottal stop ending in the riming schemes.

¹⁰In dictionaries using Japanese syllabographs or Chinese National Alphabetic Symbols and their modifications, tsu syllables are represented as not having syllabic endings.

and as having nasal initial and nasal syllabics (ma^n , etc.) The last seems to reflect native intuition the most, though it is contradictory to the phonological principle of economy.¹¹ This native intuition of the syllabic nasality in [N-] syllables is realized in riming. In other words, Taiwanese vowels are basically nasalized following nasal initials. The riming between such [N-] syllables and oral syllables is just like that between other nasalized syllables with non-nasal initials ([Nasal]) and oral syllables. Not many, that is. For examples see Text 17–19.

3.4 Medials

The most striking of all this is that there are comparatively very few cases of riming between syllables with a certain medial and those with a different medial ([Yod R Labial] or [Labial R Yod]) or between these and those without a medial ([Yod R Plain], [Plain R Yod], [Labial R Plain] or [Plain R Labial]). In other words, there are far more occurrences of syllables with medials riming with syllables with the same medials ([Yod R Yod] or [Labial R Labial], simplified as [Medial R Medial]). There are 615 such cases, such as in Text 8, 17, 18 and 23, but only 29 exceptional cases. Of the 29, some are doubtful that they are meant to rime at all, such as in Text 20–22, especially Text 21, which is clearly from classical Chinese. And a variant of Text 22 is Text 23, which is very likely a modification in a later stage intended to make the saying “really” rime. Therefore, the figure should be lower than 29. The strict requirement by a [Medial] syllable for syllables with the same medial to rime is peculiar in Taiwanese and is very different from traditional Chinese poetry.¹²

As for the syllabic types *ian*, *iat/iât*, and *io* and *ioh/iôh*, they have their respective autonomy also.¹³ In other words, *ian* does not at all rime with *an*, nor *iat/iât* with *at*, albeit the limited permission for syllables with medials to rime with those without medials. The tongue position of the vowels in these diphthongs is much higher than [a]. Wherever *ian* or *iat* occurs in his *Chinese-English Dictionary of the Vernacular or Spoken Language of Amoy* (London, 1899), Carstairs Douglas notes “better, ‘chien’ (q.v.)” under *chian*, “better chhien, q.v.” under *chhian*, etc. Nor does *io* rime with *o*. The occurrences of *io* are by no means meager at all. Exceeding the 44 occurrences of *ian* exclusively riming with *ian* and 4 occurrences of *iat/iât* riming with *iat/iât*, there are 87 cases of *io* riming exclusively with *io* or *ioh/iôh*. The absence of the cases where *io* and *ioh/iôh* rime respectively with *o* and *oh/ôh* might be incidental. Further searches are needed to determine whether such rimings exist, and, if it is negative, further researches are also needed to give it an explanation. Nevertheless, there are two instances attested where *io* rimes with the much opener Chiang-chiu equivalent of iu^n , namely io^n (Text 24). These are interesting regional cases. The corpus is unfortunately far too small for deeper investigation.

3.5 Overall Observations

Converting the figures of the account from Fig. 4 into percentages, Fig. 6 shows that the riming between syllables sharing the same syllabic “accessories” is indeed preferred in Taiwanese. The low percentages of [Identical Tones] and [Glottal R Glottal] in singing are by now expected, but their percentages in adult citation are surprisingly low. It is apparent that children conform more to such riming schemes. The tone change of the last syllable in Text 7 (cf. Section 3.1) and the addition of the glottal stop in Text 13 (discussed in Section 3.2) are good examples. As for [Nasal R Nasal], the performances of the adults and the children are about the same, and the higher score of adult citation may not be significant. The bias of nasality or of orality is indeed strong, but the most biased are, of course, the medials. Here, again, the slight differences may

¹¹For recent discussions see Jeffrey Tung (1988).

¹²I am indebted to Professor Hashimoto for first calling my attention to the difference. It is also mentioned in Li Jen-kuei (1986:Sections 1 and 11).

¹³The exclusive riming of these syllabic types are also stated in Li Jen-kuei (ibid.:Sections 2.13.3.1–2.)

not indicate anything that exists between singing and citation nor between adults and children with regard to the status of medials.

Fig. 6. The Conformity to the Riming Schemes

	Adult Singing	Adult Citation	Children ¹⁴	Together
Identical Tones	12%	59%	73%	
Glottal R Glottal	11%	66%	81%	
Nasal R Nasal*	75%	82%	78%	79%
Medial R Medial**	98%	90%	95%	96%
Oral R Oral	81%	73%	74%	77%

*Including [N- R Nasal, Nasal R N-, N- R N-].

**Riming between syllables of the same medial.

As Li Jen-kuei (1986:Section 2.9.1) points out, the secondariness of nasality in articulation seems to be the cause for the exceptional cases of assonance and for riming between nasalized and non-nasalized syllables. The notion of primary and secondary articulations or segmentals and suprasegmentals can be carried further to explain the status of all the rest of the “accessories” (cf. Section 3.2.). Tones seem to be the most “fickle” of all phonological units in Taiwanese, as can be seen in Fig. 6. And although stops bear a feature which is more primary, the final glottal stop in Taiwanese certainly is the least primary among them, though more primary than tones. It is probably even less primary than nasality in Taiwanese. Having examined its behaviors, this paper asserts that it is but a realization of glottality, which bears the feature which is secondary. It then follows that medials, being segmental in nature and in reality, are, on the contrary, phonological units that bear a feature that is primary. The primariness accounts for the high percentages of biased riming. It is illustrated by Text 23, which is discussed in Section 3.4.

There is yet a fifth category of syllabic “accessories” that has not been discussed so far. In Figs. 1–3, the notion “orality” already can be felt, and the feature [Oral] is discussed in Section 2 and appears in Fig. 4. It is not until Section 3.2 that orality is explicitly named in Fig. 5 as another suprasegmental syllabic feature. Orality, however, is unmarked and has been taken for granted, and therefore no explanation is given in Fig. 5. Nevertheless, if it is to be considered as a riming feature equal to nasality and glottality, its status in the riming schemes should at least be mentioned in passing. The occurrences of [Oral R Oral] are therefore also calculated and entered percentage-wise in Fig. 6 following [Medial R Medial]. It appears that, in general, the rate of retention of orality is similar to that of nasality.

4. Conclusion

This study tries to capture some of the behavior of tones, the glottal stop syllabic ending, vocal nasalization, and medials in Taiwanese by observing their status in the folk riming schemes so as to discover some of the Taiwanese intuition to the language. A statistic approach is used as the means to such an endeavor. And the result of such research are more abundant than expected. Some of them may be “hackneyed”, but they do confirm earlier discoveries by other scholars. Besides, there are yet some other findings that are quite novel.

As riming is determined by the nuclear vowels and their ensuing consonants, if any, the other elements, the “accessories”, that constitute the syllabics seem to become insignificant. However, there is a strong tendency in taking these “accessories” into consideration. The glottal stop syllabic ending is phonetically a consonant, but it behaves totally differently from other

¹⁵Here nursery rhymes and riddles are put under the same category “Children”, though some riddles are obscene adult riddles, some of which are starkly sexual, but all of the answers are completely devoid of reference to sex.

consonantal endings in Taiwanese. That is, it is like one of the “accessories” whose presence or absence does not affect the riming. As such, in the present study the glottal stop is treated as an “accessory” in the first place.

Of these “accessories”, tones and the glottal stop are pretty much retained as distinctive features in riming except in the lyrics of songs, where the melodies level out tones and edge out glottal stops. This is not at all surprising. As a matter of fact, it is expected to be so. On the other hand, unlike tones and the glottal stop, vocal nasalization and medials are mostly retained, and the statistics show that they are of great importance as distinctive features in the riming schemes. Medials are especially, and extremely, biased. This behavior is very different from that of the medials in traditional academic Chinese poems. In addition to the four categories of “accessories”, as a by-product of the study, orality is discovered as another syllabic feature that the riming schemes take into consideration. Its retention is also highly favored.

The investigation of the syllabic “accessories” contributes new discoveries in the understanding of native Taiwanese speakers’ intuition. Based on the similar behavior of the glottal stop and the tones in songs, based on the parallelism between the glottal stop and vocal nasalization in their respective relation to other stop endings and to nasal endings, and based on the exclusive occurrences of coarticulation of nasality (including syllabic nasals and vocal nasalization) and the glottal stop, it is justifiably stated that the glottal stop is a suprasegmental or prosodic feature of glottality that is realized as a stop. It is actually so regarded by the native speakers. To put it in another way, it is the articulation feature of the glottal stop that is less primary that gives tsu syllables the permission to rime with open syllables. In addition to glottality, in two other areas in riming, the native speakers’ intuition can also be seen. Syllables with nasal initials ([N-]) are preferred to rime with nasalized syllables rather than rime with non-nasalized syllables. It confirms the native awareness of the presence of nasality in such syllables. And, the riming behavior of the syllables with the syllabic types which modern Church Romanization writes as *ian* and *iat* shows that they are not phonetically [ian] and [iat] respectively. They do not rime with *an* and *at* respectively, which indicates that it is not phonemicization but phonetics of a higher or more abstract level, as manifested in broad transcriptions, that is the basis for riming.

The three manifestations of the intuition of Taiwanese speakers in the riming schemes, i.e., the prosodic nature of the glottal stop, the nasality of syllables with initial nasal consonants, and the non-occurrence of riming between certain types of syllables, also indicate that native intuition and phonemicization do not necessarily accord. A glottal stop is both phonetically an obstruent and phonemically a consonant, but it is treated as something else in riming. A syllable with a nasal initial ([N-]) is superimposed with the nasality that is carried over from the initial and is so felt by the native speakers, but at the same time the native speakers are also fully aware of the presence of the same nasality in the initial consonant. This is where the disagreement among scholars concerning the nasal initials in Hokkien started, in which this paper avoids getting involved. As for the case of the syllabic types spelt as *ian* and *iat* in Church Romanization, it is suspected that phonetic [ian] and [iat] have never existed in Hokkien. Their phonemicization are based on pattern congruity.

To sum up, in spite of the different degrees of the retention of the syllabic “accessories” in riming, there is a strong overall tendency for these “accessories” to conform to the riming schemes. This gives an idea of what patterns of riming are favored in Taiwanese folk literature. On the other hand, the interactions between different categories of the riming schemes, that is, the failure to conform, enable me to confirm the suprasegmental nature of the final glottal stop in Taiwanese. But above all, both the conformity and the failure to conform fruitfully reveal a part of the native speakers’ intuition.

One can call chickens to come, can blow the fire, and can make loud lamentation for the death of one's father – (pejorative) 1. Jack of all trades; 2. one does not only help but also knows how to complain.

7. 風嗤嗟,
雨披拍,
蚓龜子
生並濟。
Hong chhī-*chhě*,
Hō̄ phī-*phě*,
Ūn-ku kiáⁿ
Seⁿ phēng *chē/chě*.

It flutters when the wind blows and splatters when it rains. It begets many hunchbacked children. (Banana tree)

8. 含笑過晝*芳*芎蕉。
手縮菜籃挽茶葉。
驚父驚母不敢叫；
假意呼雞喊獵鴉*。
Hâm-chiàu kòe-tàu phang keng-*chio*.
Chhiú kōaⁿ chhài-nâ, bán tē-*hiòh*.
Kiaⁿ pē kiaⁿ bú, m̄-káⁿ *kiò*;
Ké-ì khō ke, hiàm lāh-*hiòh*.

Magnolias are more fragrant than bananas in the afternoon. Carrying a vegetable basket, I am picking tea leaves. Being afraid that my parents might know about our relationship, I dare not call out to you but pretend to be calling the chicks to come and chasing the chicken-hawk away.

9. 造家甲,
算人額。
Chō ke-*kah*,
Sng lāng-*giáh*.

In taking census, one counts the number of people.

10. 大舌,
興啼。
Tōa-*chih*,
Hèng *thi*.

Stuttering but talkative.

11. 娘易做；
嫺難學。
Niú kōe *chò*;
Kán oh *òh*.

It is easy to be a lady of the house but not easy to learn to be a house maid.

12. かめ、龜；すっぽん、鶩。
貸切仔、タクシ[タクシー]。
隔壁、となり。
賻繳、ばくち；
けいさつ來、走去匿。
Kha-meh, ku; sūt-póng, *pih*.
Tāi-chhiat-á, tha-khú-*sih*.
Keh-piah, tho-ná-*lih*.
Poáh-kiáu, ba-khú-*chih*.
Khě-sá-chuh lâi, cháu-khì *bih*.

Kame is a tortoise, and *suppon* a snapping-turtle. A taxi is called *takushii*. A neighbor is called *tonari*. Gambling is called *bakuchi*, and when the *keisatsu* (old use: the police) comes, one goes to hide.

13. 藤絲絲,
葉缺缺。
紅關公,
白劉備。
烏張飛,
走去匿。
Tín si-*si*,
Hiòh khih-*khih*.
Âng Koan-kong,
Pêh Lâu *Pī/Pih/Pih*.
Ō Tiuⁿ Hui,
Cháu-khì *bih*.

Its vines are slim and thin, and its leaves are notched. There are Lord Guan the red-faced, Liou Bei the white-faced, and Jang Fei the black-faced, who is hiding. (Water melon)

14. 雞嘴圓圓；
鴨嘴扁扁。
K(o)e chhùi îⁿ-îⁿ;
Ah chhùi píⁿ-píⁿ.

A chicken's beak is round, and a duck's is flat — one is good at talking or arguing, but the

other is slow in speech.

15. 一樣生；
百樣死。
There is only one way to be born, but there are a hundred ways to die.
- Chh̄t iūⁿ sīⁿ;
Pah iūⁿ sí.
16. 三下咬,
未見餡。
One took three bites but still did not get to eat its filling — it [he] is lacking knowledge.
- Saⁿ ē k̄ā,
B(o)ē kiⁿ āⁿ.
17. 有子,
有子命；
無子,
天注定。
Having an heir or not is destined.
- Ū kiáⁿ,
Ū kiáⁿ miā;
Bô kiáⁿ,
Thiⁿ chù-tiāⁿ.
18. 一人主張,
不值兩人思量。
An individual’s opinion is not as good as that of two after discussions.
- Chh̄t lāng chú-tiuⁿ/tioⁿ
M-tāt n̄ng lāng su-niū/niô.
19. 寵子, 不孝；
寵某, 吵鬧。
A spoiled son won’t be loving, and a spoiled wife will be quarrelsome.
- Sēng kiáⁿ, put-hauh;
Sēng bó, chhá-nāu.
20. 破柴,
連砧也續破。
One cut open the support while splitting the wood — to undermine oneself or one’s own party.
- Phòā-chh̄ā,
Liān tiam ā sòa phòā.
21. 三更燈火,
五更雞。
Sitting up till midnight and getting up before dawn — studying hard.
- Saⁿ-keⁿ teng-hóe/hé,
Gō-keⁿ ke/koe.
22. 有嘴,
無舌。
Having a mouth but no tongue — slow of speech.
- Ū chh̄ūi,
Bô chh̄h.
23. 有嘴,
無水。
Having a mouth but no saliva — slow of speech.
- Ū chh̄ūi,
Bô chúi.
24. 四角四角,
中央塌*腰。
牽牽落水死；
起來剝衣裳。
They have four corners, and their middles are smaller than the rest of the body. They join hands to get into the water and get drowned together. When they get out of the water later, they strip off their clothes. (Rice tamale)
- Sì-kak sì-kak,
Tiong-ng nah-io.
Khan-khan lóh chúi sí;
Khí-lâi pak i-chiôⁿ.