# The Reconstruction of Proto-Yue Vowel System: An Improvement of Huang's System (2009)

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**Abstract**

The earliest attempts to reconstruct the vocalic inventory of Proto-Yue were made, most notably, by McCoy (1966) and Tsuji (1980). Nevertheless, they were not properly reconstructions (because were not arrived by means of the comparative method), but an attempt to show how the sound classes of Middle Chinese have evolved into Proto-Cantonese. More recently, following new methodological approaches, Karen Huang (2009) has proposed her own reconstruction of Proto-Yue vowels, based on the comparisons of eighteen different Yue dialects, which nonetheless contains few - though crucial - shortcomings. Her system has been tested against an active fieldwork done by the present writer. Hence, this paper will: (a) briefly discuss the methodological approach; (b) introduce the most salient results of the fieldwork; (c) make a comparison with Huang's system, discussing how she has departed, at her own peril, from the strict application of the comparative method, especially in the case of her bizarre appeal to the *nèizhuǎn/wàizhuǎn* dichotomy of the rime tables.

**Keywords**

language reconstruction, Proto-Yue, rime tables, comparative method, vowel system

## 1. Introduction

There have been few attempts to reconstruct the sound systems of the various Sinitic languages; much more copious have been the attempts to demonstrate how a Sinitic language has evolved,[1] in a somewhat mechanic way, from an earlier variety of medieval Chinese (if any). Although the linguist is fortunately in a more advantageous position to reconstruct a proto-language, we still justify and accept many of our imprecise and sometimes grotesque terminology (*i.e.* 'division,' 'inner turn,' 'outer turn,' 'apical vowels,' *etc.*) by tracing it back to the Míng (1368–1644) and Qīng (1644–1912) philological traditions. Turning back to

[1] Among the most notably attempts we can find: (i) Coblin (2005); (ii) Coblin (2010); (iii) Qiugu (2003); (iv) Norman (1974); (v) Norman (1981).

the reconstruction of proto-languages, in the field of Cantonese linguistics, Yue (Yue 1995, Yu 2006) has suggested to draw our attention toward the living popular dialects of the present day, rather than toward rime books and rime tables. More recently, Huang (2009) has proposed a reconstruction of the Proto-Yue vowel system based on the comparison of eighteen different Yue dialects. It goes without saying that this reconstruction has made the previous attempts by John McCoy (1966) and Nobuhisa Tsuji (1980) outdated and no more useful. This paper shall not discuss these old reconstructions, whose weakness is self-evident at the present day.

It is well-known since the times of Jespersen (1860–1943, Jespersen 2013 [1894]) and Pedersen (1867–1953, Pedersen 1959) that the linguistic science is an inductive enterprise. Although this author agrees whole-heartedly with this statement, it should not be taken to imply that the modern comparative linguist is invited to disregard what is going on in the living dialects of the present day, because they might represent a reliable example of language change in progress. Given that the comparative method has been successfully applied to Ugro-Finnic, Semitic, Indo-European, Austronesian, Uto-Aztecan, Algonquian, Athabaskan, *etc.*, one cannot understand why there is such a resistance to the application of the comparative method in Chinese linguistics. Furthermore, if the reconstruction of a proto-Sinitic language is tailored to phonological expectations (i.e. to fit in into the phonological inventory, or into the sound classes of Middle Chinese), they acquire inevitably a bias toward the average language type.[2] This clearly exposes the weakness of the traditional philological approach: it introduces a bias toward what is frequent and regular in the sound system of rime tables, and therefore renders the reconstruction of deviant patterns impossible a priori.[3] Many specialists complain that the monosyllabic nature of the Chinese morpheme, and the extensive borrowings between the various Sinitic languages do not render feasible the application of the comparative method. This is false: the comparative method, which is independent of "lexical typology," is exactly a tool for eliminating chance resemblance, universals, and borrowings as plausible causes for cross-linguistic similarity. Furthermore, this writer may be mistaken, but it seems that, in addition to this prejudice, there is a general and implicit assumption, in the overall field of Chinese linguistics, that unwritten features must not be ancient. This may be the result of our Middle Chinese upbringing of the inevitable training to which the general Chinese historical linguist is submitted, but in this writer's opinion there is no reason to consider an unwritten feature as a later development a priori.

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2 This author does not wish to imply that rime tables are useless, but that they should be used as devices to broaden the horizon of possibilities rather than as a constraint on linguistic reconstructions.

3 The greatest objection to Norman's reconstructed Proto-Min initials (Norman 1974) was the six-way distinction, which clearly contrasted with the three-way distinction of Old Chinese. This author rejects these objections and considers Norman's reconstructed Proto-Min fairly reliable.

Linguistic reconstruction is a fieldwork-based historical-comparative enterprise, therefore, in the present paper, the reconstruction of the Proto-Yue vowel system is based only on comparative data, and not on the analysis of the rime tables.[4] To make a concrete example of how the comparative method works, and how it will be applied in this paper, imagine we want to reconstruct the Proto-Romance word for 'tooth,' or at least its main vowel. The received daughter languages have the following reflexes: French *dent* (\dɑ̃\), Corsian *dente*, Catalan *dent*, Spanish *diente*, Italian *dente*, Gallician *dente*, Occitan *dent*, Portuguese *dente*, Walloon *dint*, Romanian *dinte*, Papiamento (Portuguese-based creole language of the Caribbean) *djente, etc*. It follows that our reconstruction would be *dente, from Latin *dentem*, accusative form of *dēns* (Classical Latin /dens/, [dẽːs]; Ecclesiastic Latin /dens/) < Proto-Italic *dents < Proto-Indo-European *h₃dónts. In this case we have no reason to assume that the reconstructed main vowel should not be *e. This is how the traditional comparative method works, and this is exactly the comparative method used in this paper.

However, the situation is not always as straightforward and clear as in the example above, mainly because of a lack of criteria on the direction of sound changes. It is felt that the lack of a theoretical framework has led to various positions, such as the "hyper-segmentationist" approach of single speech sounds as in Hockett (1947). In the present article, the typological validation approach is used to reorganise the results of the comparative method. In fact, it is well-known that the speech segments of living languages (not languages which emerge from the surface of rime dictionaries) are contrastive only in a restricted number of acoustic features. It follows that if the vocalic distinctions obtained from the comparative method cannot be described with the distinctive features deduced from known living languages (as in the case of Huang's system), they will be eliminated or eventually corrected.

## 2. The reconstruction of Proto-Yue monophthongs

This paragraph analyses the results of the active fieldwork done by this writer. A total of sixty-seven speakers, mainly from Guǎngzhōu, Dōngguǎn, Shùndé, Táishān,[5] Shēnzhèn and

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[4] The use of the traditional approach is inevitably logically flawed. For example, just take two characters of the *xiàn* 豏 rhyme: *jiǎn* 減 'diminish, less' and *jiǎn* 鹼 'alkali.' They are both marked as Grade II rimes, and yet in the written stratus of Cantonese the former gives *-am* rime, while the latter gives *-im* rime (Lin 1965: 62). The same is true also for characters such as 'knee' ( 膝 ) and 'to learn about' ( 悉 ). They are both Grade III characters and are glossed with identical *fǎnqiè* ( 息七 ),. Yet, 'knee' gives Cantonese *fɐt1*, while 'to learn about' gives *ʃik1*. The allegedly "correct" rime *-ɪk* is indicated by the rime categories as well as by the *fǎnqiè* formula in rime charts, whose phonetic value, however, was determined by means of dialectal comparisons, which is unfortunately also our starting point.

[5] It should be premised that Toishanese is a dialect of the so-called Ng Yap, normally recognised a sub-group of the Yue language, though showing many distinctive features which may warrant its separation.

Fóshān, ranging from postgraduate students to middle-age workers, has been investigated. On the left a series of common words (in order to reduce the probability of loanwords between the various Sinitic languages) is provided. The following data are not taken from previous published sources, a comparison with other systems is offered in the next paragraph.[6]

Table 1 The below list represents the reconstruction of the Proto-Yue vowel system in open syllables [(C)(M)V(M)]. When two or more forms are given, it means that, from the speakers surveyed during the fieldwork, the dominant form has not emerged clearly.

| Gloss | Guǎngzhōu | Dōngguǎn | Shùndé | Táishān | Shēnzhèn | Fóshān | Author |
|---|---|---|---|---|---|---|---|
| Hold | tsʰi | tsʰi | tsʰi | ti/ɬi/tei | tsʰi | tsʰi | *i |
| This[6] | tsʰi | tsʰɐi | tsʰy | ɬu | tsʰɐi | tsʰi | *i (?) |
| Nose | pei | pɐi | pei | pei | pei | pɐi | *ej < *i: |
| Master | tsy | tsy | tsy | tsi | tsy | tsy | *y |
| Need | sœy | sui | sœy | ɬui | sœy | sœy | *œy > *y: (?) |
| Tiger | fu | fu | fu | fu | fu | fu | *u |
| Old | lou | lou | lou | lau | lau | lou | *ou < *u: |
| Horse | ma | ma | ma | ma | ma | ma | *a |
| Many | tɔ | tɔ | tɔ | tʷɔ | tɔ | tɔ | *ɔ |

Table 2 Proto-Yue vowels in closed syllable [(C)(M)V(C)]

| Gloss | Guǎngzhōu | Dōngguǎn | Shùndé | Táishān | Shēnzhèn | Fóshān | Author |
|---|---|---|---|---|---|---|---|
| Change | pin | pin | pin | pen | pin | pin | *i |
| Cut | tsʰit | tsʰi | tsʰi | tet | tsʰit | tsʰi | *i |
| Moon | jyt | zøt/zyt | jyt | ᵑgut | jyt | zyt | *y |
| Snow | syt | søk/syt | syt | ɬut | syt | syk/syt | *y |
| Full | mun | mun | mun | ᵐbtʷɔn | mun | mun | *u |

6 Like standard Cantonese (intended as the dialect of Guǎngzhōu), Toishanese agrees in the treatment of occlusive initials in the low rising tone. Nevertheless, the tonal behaviour of Toishanese departs significantly from standard Cantonese and resembles much more the Northern varieties of Mandarin: the upper even tone has not assumed a falling cadence, as in Cantonese, whereas the upper rising has become a very high level tone. The upper falling tone has become a level tone low in pitch. Whilst in Cantonese, words in the entering tone remain in the upper series, Toishanese has not developed a middle tone for these words. Initial consonants have been radically changed by a series of lenitions and fortitions. The vocalism of Toishanese sometimes resembles that of Hakka. As it is clearly shown in the comparative tables, Cantonese /ts/ generally corresponds to Toishanese /t/, while Cantonese /s/ corresponds to Toishanese /ɬ/, and Cantonese /tʰ/ corresponds to Toishanese /h/. The voiced bilabial nasal has become a prenasalised labial occlusive, just like the voiced alveolar nasal has become a prenasalised dental plosive. It has been pointed out to the present writer that several words listed in Tab.1 are never used in colloquial sense, e.g. 'to hold': Cantonese uses 揸 /tsa[55]/ instead of 持 /tshi[21]/; 'this': Cantonese uses 呢 /ni[55]/ instead of 此 /tshi[35]/. This is essentially correct. However, the present article is mainly concerned with the reconstruction of the literary stratum. Moreover, if we take, e.g., 呢 /ni[55]/ and not 此 /tshi[35]/, Toishanese will be excluded from comparison, as it expresses the demonstrative pronoun with 該 /koi[21]/ and not with /ni:l/ 呢 (which, in turn, is probably a Taic loanword, *viz.* níi < Proto-Tai *najᶜ).

| Officer | kun | kun | kun | $k^{w}$ɔn | kun | kun | *u |
|---|---|---|---|---|---|---|---|
| Warm | nyn | nøn | nyn | $^{n}d^{w}$ɔn | nyn | nøn/nyn | *y |
| Cut | kɔt | kɔt | kɔt | kɔt | kɔt | kɔt | *ɔ |
| Horn | kɔk | kɔk | kɔk | kɔk | kɔk | kɔk | *ɔ |
| South | nam | naŋ | nam | nam | nam | nam | *a |
| Hundred | pak | pɛ | pak | pak | pak | pɛ | *a |
| Strength | lek | lək | lɛk/lɪk | lek | lɛk | lək | *ɛ |
| Know | sek | sək | sɛk/sɪk | sek | sɛk | sək | *ɛ |
| Wait | tɐŋ | tɐŋ | taŋ | taŋ | taŋ | taŋ | *a |
| North | pɐk | pɐk | pak | pak | pɐk | pɐk | *a |
| Pen | pɐt | pɐt | pɐt | pit | pɐt | pɐt | *ɐ < *i? |
| East | toŋ | tuŋ | toŋ | tøŋ | toŋ | tuŋ/toŋ | *o < *ɔ? |
| Cry | hok | huk | hok | høk | hok | huk | *o < *ɔ? |

The comparative data presented in the tables above point toward the reconstruction of the following monophthongs: *a, *u, *y, *i, *o (?), *ɔ, *ɛ, *ɐ (?). Among these, long *-iː, *-yː and *-uː were the only vowel *finals* which could diphthongise.

There is a room left for further revision of this vowel inventory: was *ɐ really existing? Or has the *i lowered to ɐ in some circumstances (before velar and apical stops in *rù* tone, velar nasal or glides), i.e. was it a conditioned change? It may be assumed that the mid-central *ɔ vowel of Proto-Yue became close *o (> /o/ or /ʊ/?) only before velar nasal and velar stops. In addition, there seems to be a distinction between /ɛ/ and /ɪ/ (Yue Hashimoto 1972: 169). One might wonder whether a reconstruction of *ɪ would be reasonable. In this paper it has not been reconstructed, because its distribution is very limited, almost entirely confined in the Guǎnlián-inland area. Unless there is some strong evidence which may explain in detail why and how the Guǎnlián-inland area retained this feature from the proto-language it is more reasonable to consider it an innovation rather than a retention. Moreover, /ɪ/ seems to be the colloquial variant of /ɛ/ (Yue Hashimoto, *ibid*.). Since the aim of this paper is the reconstruction of PY *literary stratum* in this writer's opinion the reconstruction of PY *ɛ is sufficient enough to account for the above sets of correspondence. However, further work is needed to strengthen (or weaken) these assumptions.

In addition, during the fieldwork, the present writer has realised that Toishanese more often than not has /u/ and /ui/ contrasting with the /y/ of Hèshān (also a dialect of the Ng Yap area), especially before alveolo-palatal and palatal initials. The same contrast is often occurring between non-Ng Yap dialects and Ng Yap dialects. The Nánníng dialect, for example, shows a geminated /yː/ corresponding to Toishanese /u/, as for example in the word meaning 'grandson,' *i.e.* Nánníng *θyːn* vs Táishān *łun* (Standard Guǎngzhōu *syn*). Thus, it seems the ancient Proto-Yue vowels *y and *u merged to /u/ in the Táishān dialect but retained the contrast in other dialects, including in other varieties of Ng Yap, such as Hèshān.

## 2.1. Diphthongisation in Proto-Yue

In the opinion of the present writer, the linguistic data collected do not point toward the existence of diphthongs in the sound system of Proto-Yue. Nevertheless, an explanation of the mechanism involving diphthongisation is needed.

This author follows Pulleyblank (1997: 205) in believing that the diphthongisation of high vowels in Cantonese resembles the diphthongisation which must have been at the basis of the Great Vowel Shift of Middle English, i.e. the diphthongisation of long vowel iː and uː. Following Selkirk (Selkirk & Tateishi 1988, Selkirk 1990), Pulleyblank assumed that geminates, no matter whether consonants or vowels, consist of two root nodes with identical specification for the features [consonantal] and [sonorant] linked to a single node.[7] This means, as suggested by Selkirk (1990), that a geminated high vowel makes its first step toward the diphthongisation when the second V slot or mora becomes a non-syllabic glide (Pulleyblank 1997: 207). Therefore, given that the place node of the long iː [-consonantal, +sonant] will be Dorsal, it follows that it would be characterized by the features [+high, -back], so that:

| VV | VC | VC | VC |
|---|---|---|---|
| i | i | i i | əi |
| [iː] | [ij] | | [ej] |

In the case of long uː, it probably underwent the same phenomenon of diphthongisation, becoming [ow].

| VV | VC | VC | VC |
|---|---|---|---|
| u | u | u u | ow |
| [uː] | [uw] | | [ow] |

Pulleyblank (1997: 191, 202) assumed that a long yː was also diphthongised to ø plus the labialised palatal glide [ø+ɥ = øɥ]. The fact that the Zhōngshān dialect has -i, -u and -y corresponding to common Cantonese -ej, -ow and -øy may confirm this fact.[8] Thus, we might

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7 See also Pulleyblank (1997: 205) and McCarthy (1988).

8 Incidentally, this hypothesis could be tested against Morrison's *Grammar* (Morrison 1815), where the character for 'woman' ( 女 ) is romanised with final *-eu*. It is well-known that in Morrison's system, the *e* might indicate [ɵ] (see Coblin 2003). In this writer's opinion, the interpretation of a close-mid front

formulate a hypothesis according to which the Proto-Yue VV syllable structure has been simplified showing a contrast between long and short vowel only after some given phoneme (like coronal initials) or according to the nature of the syllable coda.[9]

The diphthongisation mechanism presented in this paper should not be intended as an account of the prehistory of diphthongs. Rather, it should be considered as an attempt to generate the attested shapes of diphthongs. From this perspective, the diphthongisation theory is perfectly falsifiable.

Standard Cantonese clearly shows the presence of other geminated vowels, such as ɛː, œː, aː, ɔː (Zee 1999: 59). However, their distributional complementation suggests that, in these cases, the gemination of vowels is a later development, in most cases due to the assimilation of a vocalic glide. For example, In some Yue dialects, most notably Nánníng Pínghuà (erroneously spelt Pinhua in Huang!), the long aː seems to be derived from a short /a/, which lengthened after coronal initials, except before the glides -w- and, in minor cases, -j-. For this reason, Pulleyblank (1997: 196) assumed that the two contrastive moras merged into a single long vowel which clearly took the [+low] and the [+front] features of the second mora.

## 3. Huang's system (2009)

In this section, Huang's system (2009), which this author, despite some shortcomings, nonetheless considers the most up-to-date reconstruction is dissected under the microscope of the present writer, in order to show how she has departed, at her own peril, from the strict application of the comparative method, especially in the case of her bizarre appeal to the *nèizhuǎn/wàizhuǎn* dichotomy of the rime tables.

Huang (2009) reconstructs the following monophthongs: [+ATR] vowels *i, *y, *u, *æ, *o; [–ATR] vowels *ɪ, *ɛ, *ɑ, *ʊ. There are at least two very suspicious vowels. Consider the following scheme (Huang 2009: 13):

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rounded vowel [ø] is more advantageous. Morrison's *Grammar* distinguishes the characters for 'woman' and for 'blow' ( 吹 ) [-uy], with the *u* probably being [ø]. The two readings have now merged in standard Cantonese. This might indicate the following sound change y > øy [øɥ], which would confirm the results of this author's fieldwork. A discussion about the sound changes involving *ɵ, *y and *ɵy has been presented during the 22nd International Conference on Yue dialects by Cén Yáohào ( 岑堯昊 ) and Hé Dānpéng ( 何丹鵬 ).

9 The present writer has been asked whether diphthongisation as presented in the present paper might be used as a criterion for dialect subgrouping. In the opinion of the present writer, diphthongisation alone is not sufficient enough for formal purposes of dialect classification, though it may be one valid criterion (among many others). Subgrouping attempts have relied on specific acoustic-articulatory attributes (e.g. sonority, aspiration) and/or on the treatment of certain Middle Chinese initials. New approaches have relied, instead, on mutual intelligibility, though this is not a widespread practice in historical linguistics.

Table 3 Reflexes in the eighteen different Yue dialects consulted by Huang.

| (廣府) | | | | | (南三角洲) | | | | (北三角洲) | | | | (五邑) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Guǎngfǔ | | | | | Southern Delta | | | | Northern Delta | | | | Wǔyì | | | |
| **GZ** | **HS** | **BA** | **CW** | **SH** | **DG** | **XJ** | **ZS** | **RX** | **BY** | **SD** | **GM** | **NP** | **XH** | **TS** | **EP** | **KP** | **HE** |
| o | o | o | o | o | o | o | o | ʊ | o | o | o | ɔː | ou | ø | o | o | ɔ |

Huang reconstructs Proto-Yue *ʊ merely to account for the Róngxiàn ( 容縣 ) Cantonese of the Guǎnlián-inland ( 莞簾內陸 ).[10] It seems clear that the comparative data point toward the reconstruction of *o, but Huang assumes that *ʊ < o in most dialects, after *o > ɔ. This is not to imply that the reconstruction is wrong, but that one would naturally expect *o. Unless there is a strong evidence to compel us to accept a less expected reconstruction we are obliged to choose the most congruous and natural one.

The case of *æ is also controversial. As reported in Huang (2009), its reconstruction is postulated in order to signify the [+ATR] feature, even though almost all the dialects have /a/ reflexes. The reconstruction is flawed by the *petitio principii* inherenti in it: the existence of the [+ATR] feature is proved by the presence of *æ which, in turn, is postulated in order to account for the [+ATR] feature. Consider the following list borrowed from Huang (*ibid.*):

Table 4 The first row shows correspondences in open syllables, while rows two (with labial finals) and three (with alveolar or velar consonants in final position) show the sound correspondences in closed syllables.

| **GZ** | **HS** | **BA** | **CW** | **SH** | **DG** | **XJ** | **ZS** | **RX** | **BY** | **SD** | **GM** | **NP** | **XH** | **TS** | **EP** | **KP** | **HE** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| a | a | a | a | a | a | ɑ | a | a | a | a | a | a | a | a | a | a | ɑ |
| a | a | a | a | a | a | ɑ | a | a | a | a | a | aː | a | a | a | a | e |
| a | a | æ | a | a | ɛ | æ | a | a | a | a | a | aː/ ɛː | a | a | a | a | ɑ/iɑ |

It is not clear why we should reconstruct *æ, if not merely to account for the prearranged [+ATR] feature. However, when many sources of evidence point toward the same result, there must be a strong evidence to coerce us to adopt another, less straightforward evidence. Huang (2009:12) assumes the existence of the following sound change: Proto-Yue *æ > Hèshān iɑ before final velars, e.g. *viak* (one hundred). In the opinion of the present writer, there was no such sound change, and if Proto-Yue *a > Hèshān iɑ really occurred the change was not due to velar stop in final position, as Huang believes (*ibid.*),[11] but is clearly the result of the

[10] In the Xīnjiè Jǐntián ( 新界錦田 ) it is a vocalic allophone of *u*.

[11] In other words involving final *-k* there is no such change. If the vocalic change is due to the final and not to the initial consonant, how do we explain this fact?

lenition of the plosive to labiodental fricative. Thus, it appears that there is a whole range of phenomena which receive a more congruous explanation when we assume that the Proto-Yue vowel is *a and not *æ.

Now consider the following comparative table:

Table 5

| Gloss | Guǎngzhōu | Dōngguǎn | Shùndé | Shēnzhèn | Táishān | Fóshān | Huang | Author |
|---|---|---|---|---|---|---|---|---|
| Nose | pei | pɐi | pei | pei | pei | pɐi | *i | *ej < *i: |
| Old | lou | lou | lou | lou | lau | lou | *u | *ou < *u: |
| Horse | ma | ma | ma | ma | ma | ma | *æ | *a |
| Many | tɔ | tɔ | tɔ | tɔ | $t^{w}ɔ$ | tɔ | *o | *ɔ |
| Warm | nyn | nøn | nyn | nyn | $^{n}d^{w}ɔn$ | nøn/nyn | *u | *y |
| Cut | kɔt | kɔt | kɔt | kɔt | kɔt | kɔt | *o | *ɔ |
| Horn | kɔk | kɔk | kɔk | kɔk | kɔk | kɔk | *o | *ɔ |
| South | nam | naŋ | nam | nam | nam | nam | *æ | *a |
| Hundred | pak | pɛ | pak | pak | pak | pɛ | *æ | *a |
| Strength | lek | lək | lɛk/lɪk | lɛk | lek | lək | *ɪ | *ɛ |
| Know | sek | sək | sɛk/sɪk | sɛk | sek | sək | *ɪ | *ɛ |
| Wait | tɐŋ | tɐŋ | taŋ | taŋ | taŋ | taŋ | *ɑ | *a |
| North | pɐk | pɐk | pak | pɐk | pak | pɐk | *ɑ | *a |
| Pen | pɐt | pɐt | pɐt | pɐt | pit | pɐt | *ɛ | *ɐ < *i? |
| East | toŋ | tuŋ | toŋ | toŋ | tøŋ | tuŋ/toŋ | *ʊ | *o < *ɔ? |
| Cry | hok | huk | hok | hok | høk | huk | *ʊ | *o < *ɔ? |

As can be seen from the comparative table above, the main difference with Huang's system is that, in this paper, vowels such as *ɪ, *ɑ, *ʊ, *æ are not reconstructed.

Huang (2009) reconstructs nine diphthongs: *æi̯, *æu̯, *oi̯, *ɑi̯, *ɑu̯, *ɛu̯, *ou̯, *ui̯, *iu̯.[12] Her first-hand material is appreciable, however had she consulted more literature about this topic,[13] she would have discovered that this diphthongisation is relatively recent (as fully reflected in colloquial materials collected by Western missionaries, Morrison *in primis*), and cannot be pushed back to Proto-Yue levels. Unfortunately, Huang forces all the data to fit in within the *nèizhuǎn/wàizhuǎn* dichotomy,[14] interpreted as the presence

[12] Some of the diphthongisations shown in Huang (2009) resemble the mechanism of diphthongisation presented in this paper. For example, Huang (2009:9–10) also derives Yue /ei/ from /ii/ <*i and Yue /oey/ or /ui/ from /yy/ or /yi/ < *y. Despite minor divergence, this is basically the same sound change proposed here (on the basis of Pulleyblank's work, 1997). However, Huang does not cite any phonetic theory which may support her diphthongisation mechanism. It is a tricky solution which, from an epistemological point of view, has low probatory force.

[13] For example: Li, Huang, Shi, Mai & Chen 1995, Takata 2000.

[14] Historically, various accounts on the very concept of 'inner' and 'outer turn' may be found in the *Fànzì xītán zìmǔ bìng shìyì* 梵字悉曇字母并釋義 of Kōbō-Daishi (774–835), or in the *Huáng jí jīngshì jiě qǐ shù jué* 皇極經世解起數訣 compiled in Sòng epoch (1127–1279) by the scholar Zhù Mì 祝泌 (?–?).

or absence of the advanced tongue root, a tool historically handled for the explanation of the unusual vocalic harmony in African languages and that only recently "has accordingly been invoked to double the number of vowel heights obtainable from the features [high] and [low], in most cases without any experimental evidence that the feature is realistic" (Trask 1996: 39). The very problem with Huang's [± ATR] theory is that it is too powerful, because it predicts the existence of vowels which, as we have seen, do not in fact occur. A methodological disadvantage which is offered by this approach is that it does not offer the possibility of comparing and considering the compatibility of different solutions and different views before assessing their correctness. As felt by Huang herself, the reconstruction of nine monophthongs is typologically unusual for a tonal language. In fact, as argued in the previous sections, the vowel distinctions mentioned in Huang (2009) can hardly be described with the acoustic and articulatory attributes deduced from other living languages, let alone Sinitic dialects.

## 4. Closing remarks

To sum up, the biggest difference between McCoy's or Tsuji's reconstructed vowel inventory with Huang's reconstruction (2009) is that she reconstructs three more vowels, *viz*. *y, *ʊ and *ɪ. This paper has proposed a modification and an improvement of her system with the help of an active fieldwork done by the present writer. The difference between the two systems is illustrated below:

Table 6 Huang's reconstructed monophthongs (2009)

| | Front | Central | Back |
|---|---|---|---|
| High | i y<br>ɪ | | u<br>ʊ |
| Mid | ɛ | | o |
| Low | æ | | ɑ |

Table 7 Huang's reconstructed diphthongs and triphthongs (2009)

| | |
|---|---|
| Rising Diphthongs | i̯æ i̯o i̯ɑ i̯u<br>u̯æ u̯e u̯o u̯a u̯i u̯ə |
| Falling Diphthongs | æi̯ oi̯ ɑi̯ ui̯<br>æu̯ ɛu̯ ou̯ ɑu̯ iu̯ |
| Tripthongs | u̯æi̯ u̯ɑi̯ |

| | Front | Central | Back |
|---|---|---|---|
| Close | i　y | | u |
| | | [o] | |
| Mid | | | |
| | ɛ | | ɔ |
| | | [ɐ] | |
| Open | | a | |

The vocalic inventory of the present system. Square brackets indicate that the reconstructed vowels may be superfluous. No diphthongs are reconstructed.

Table 8 Vowel phonemes of Proto-Yue

| | | **Front** | | **Central** | | **Back** | |
|---|---|---|---|---|---|---|---|
| | | **unrounded** | **rounded** | **unrounded** | **rounded** | **unrounded** | **rounded** |
| **Close** | **short** | i | y | | | | u |
| | **long** | iː | yː | | | | uː |
| **Mid** | **close** | | | | | | o (?) |
| | **open** | ɛ | | | | | ɔ |
| **Near-Open** | **long** | | | ɐ (?) | | | |
| **Open** | **short** | a | | | | | |

As another of the chief concerns of this paper are the relative chronologies of linguistic developments, it may be appropriate to present a comparative table with the vowel system of Standard Cantonese.

Table 9

| | |
|---|---|
| **Proto-Yue literary stratum** | i, y, a, ɛ, o(?), ɔ, u, ɐ(?) |
| **Standard Cantonese** (Zee 1999) | i, y, ɛ, œ, a, ɔ, u, ɪ, ɵ, ɐ, ʊ |

## Appendix I

Comparative table between Guǎngyùn ( 廣韻 ) rimes and Yue rimes. The grey slots indicate a divergence in rime or final consonant. Taken from Lin Lien-hsien (Lin 1965).

| 粵韻 | ɯɔŋ | | | ip | | | | | | | | | ɐp | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 粵調 | 陰上 | 陰去 | 陽去 | 陽入 | | | | | 中陰入 | | | | 陰平 | | 陽入 | | 中陰入 |
| 韻攝 | 宕 | | | 山 | | 咸 | | | | | | | 深 | 咸 | 深 | 咸 | |
| 廣韻韻目 | 漾 | 宕 | 漾 | 屑 | 薛 | 葉 | 怗 | 業 | 豏 | 葉 | 怗 | 業 | 緝 | 洽 | 緝 | 盍 | 合 |
| 粵音聲母/等呼 | 合三 | 合一 | 合三 | 開四 | 開三 | 開三 | 開四 | 開三 | 開二 | 開三 | 開四 | 開三 | 開三 | 開二 | 開三 | 開一 | 開一 |
| p | | | | | | | | | | | | | | | | | |
| $p^h$ | | | | | | | | | | | | | | | | | |
| m | | | | | | | | | | | | | | | | | |
| f | | | | | | | | | | | | | | | | | |
| w | | | 旺 | | | | | | | | | | | | | | |
| t | | | | | | | 牒 | | | | | | | | | | |
| $t^h$ | | | | | | | | | | | 帖 | | | | | | |
| n | | | | 涅 | 苶 | 聶 | | | | | | | 粒 | | 立 | | |
| l | | | | | | 獵 | | | | | | | 粒 | | | | |
| tʃ | | | | | | | | | | 接 | | | 汁 | | | | |
| $tʃ^h$ | | | | | | | | | | 妾 | | | 葺 | | | | |
| ʃ | | | | | | | | | | 攝 | 燮 | | 濕 | | 十 | | |
| k | 誑 | | | | | | | | | | | 劫 | 急 | | | | |
| $k^h$ | | | | | | | | | | | | | 級 | | 及 | | |
| ŋ | | | | | | | | | | | | | | | | | |
| h | | | | | | | 愜 | | 歉 | | | 脅 | | 恰 | | 盍 | |
| j | | | | | | 葉 | | 鄴 | | 靨 | | 腌 | 泣 | | 入 | | |
| o | | | | | | | | | | | | | | | | | |

| 粵韻 | uɐt | | | | | uat | | | ɪk | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 粵調 | 陰入 | | | 陽入 | | 中陰入 | | | 陰入 | | | | | | 陽入 | | |
| 韻攝 | 臻 | | | 山 | 臻 | 山 | | | 臻 | 梗 | | | 曾 | | 梗 | | |
| 廣韻韻目 | 物 | 沒 | 黠 | 物 | 月 | 黠 | 鎋 | 黠 | 質 | 陌 | 昔 | 錫 | 職 | 德 | 陌 | 昔 | 錫 |
| 粵音聲母/等呼 | 合三 | 合一 | 合二 | 合三 | 合三 | 合二 | 合二 | 合二 | 開三 | 開三 | 開三 | 開四 | 開三 | 開一 | 開三 | 開三 | 開四 |
| p | | | | | | | | | | 碧 | 璧 | 壁 | 逼 | | | | |
| $p^h$ | | | | | | | | | | | 辟 | | | | | | |
| m | | | | | | | | | | | | | | | | | |
| f | | | | | | | | | | | | | | | | | |
| w | 欝 | | | | | 猾 | | 挖 | | | | | | | | | |
| t | | | | | | | | | | | | 的 | | | | | 狄 |
| $t^h$ | | | | | | | | | | | | 惕 | | 忒 | | | |
| n | | | | | | | | | 暱 | 搦 | | | 匿 | | | | 溺 |
| l | | | | | | | | | | | | | | | | | 歷 |
| tʃ | | | | | | | | | | | 積 | 績 | 職 | | | 夕 | 寂 |
| $tʃ^h$ | | | | | | | | | 叱 | | 彳 | 戚 | 敕 | | | | |
| ʃ | | | | | | | | | 悉 | | 惜 | 析 | 息 | | | | |
| k | | | | | | | | | | 戟 | | 擊 | 殛 | | | | |
| $k^h$ | | | | | | | | | | | | | | | | | |
| ŋ | | 骨 | 鶻 | 倔 | 掘 | | 刮 | | | | | | | | | | |
| h | | | | | | | | | | | | | | | | | |
| j | | | | | | | | | | | 益 | | 憶 | | 逆 | 繹 | 鷁 |
| o | | | | | | | | | | | | | | | | | |

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# 原始粵語元音系統的重構：對黃氏構擬系統之補正

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**提要**

本文由比較語言學的角度入手，探討原始粵語的重構問題。論點集中否定黃氏的見解。本文在構擬原始粵語（文讀）元音系統時，經由歷史語言比較，大約有如下步驟：其一、在同一個大方言區裡做次方言的比較；其二、建立語音對應；其三、重構原始形式；其四、檢視共時語音對應的歷時內涵；其五、以類型學的視野來檢驗構擬的形式是否合理。本文所擬測的元音系統比黃氏系統更簡潔更自然。

**關鍵詞**

語音重構，原始粵語，等韻圖，歷時比較法，元音系統

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