

## THE SINGING CHARACTERISTICS OF CHINESE LOCAL OPUSES AND ITS' DIFFERENCES WITH THE WESTERN CLASSIC

Koo Leh-Teh (顧立德)  
Laboratory of Singing Voice  
Shanghai Artists Hospital  
Shanghai, China

### I. The main drama genre of China

The singing arts of Chinese opuses are rich and colourful. Every race, region, province, even the country has their local favour opera and special singing norms. In this paper I can only report in the main, about 50 genres.

### II. Singing norms and the differences from the Classics

#### a. Classification

According to the singing norms, most of the Chinese local opuses may be included in six categories, analogous Beijing opera, local opera, local song and dance drama, high-pitch range kinds, new drama and the vocal music kinds.

#### b. Singing ranges

In China, different sexual artists sing which the same range is prevalent and popular. Most of the singing ranges of actors are higher than Western Classics. Melodies stay at  $e^2$   $b^2$  are common and higher than  $C^3$ , even  $d^3$   $f^3$  are not seldom sights also. But in actresses,

lower than  $f^2$ ,  $s$  range is more often used. Recently, along with the vocal music training, their singing range is widened distinctly.

#### c. Register

In actor, the head register, or so called the light mechanism is the main. Many of them voiced with single register and the bass part is neglected.

In actresses, there are three sorts, one of them voiced with single chest register, so called "true voice" or "natural voice" here; the second voiced with single head register, so called "small voice" here; and the third voiced with mixed register."

#### d. Timbre

Most of the singing voice in China are brighter and lighter than the Classics' and mixed, with nasal resonance is not rare.

#### e. Support (examined by pneumeter)

Chinese local opuses artists emphasized the technics about high speed inhalation, so called "steal the breath" here. But, generally, their breathing are shallower than the Classics.

As for the idea about "support", they comprehended in "the breathing is supported and controlled by surrounding umbilicus muscles", so called "dan tian" here.

f. Vibrate (by Sonagraph)

Although the "straight voice" and "wobble voice" (the frequency modulation is over semi-pitch, or the vibrate circle is slower than 5 times per second) are used in some norms here, but most of the artists, especially in the younger, the role of the vibrate is similar to the Classics'.

g. The problem about falsetto

The Chinese actors usually have the ability to voiced different kinds of strong falsetto, so called "true falsetto" here.

h. The problem of "type of role"

The artists of Chinese local opuses are divided into different type of roles. Every type has his own distinguishing singing feature. The vocal parts of classics' are not suitable here.

i. The problem about endurance

Basically, the Chinese local opuses artists play every day. Therefore, the vocal load, especially in the leads, is marked heavier than Classics'. The problem about endurance and what is the definite about "over used" raised.

j. The wonderful sign of "sexual reverse"

Women played by actors with falsetto, or men are played by actresses with depressing down her larynx are rather common here.

k. "Lingering charm"

As classic vocal music emphasize "musical". Chinese local opuses not only emphasize the "vocal ability" (range, volume and endurance) but also devoted much attention to the "lingering charm" and the special pleasing quality of private singing voice.

1. The articulation

The melodies of Chinese local opuses are closely integrated with their local dialect, so clear articulation is stressed.

### III. The acoustic feature of some Chinese characteristics singing voice and its differences to the Classics' (by home made Sonagraph and B & K Type 3033 Analyzer)

a. Sonagram and Spectrum

In some Chinese characteristics singing voice, the stronger component of higher harmonies is the main distinguishing feature.

b. Singing formant

The singing formants have are higher than the Classics' and over 3000 Hz.

c. The falsetto

In Chinese opuses, the timbre of falsettos are colourful. The period of modulation of the close phase during phonation is the main factor.

In false falsetto ("small voice"), the close phase is indistinct. Spectrum shows the intensity of FF is rather strong, the higher overtones are decreased, and the relative intensity of harmonies fluctuated regularly.

If the components of "chest voice" (natural voice) increased, the regularly fluctuation feature fade out gradually along with the close phase reappears in the glottogram.

d. The problem about noise component

Several norms of singing voice are mixed with rather stronger noise. Acoustic analysis shows, random vibration mingled in the formant bands, higher than 4000 Hz breathing noise appeared, even the double or multiple voice emitted simultaneously.

**IV. The dynamics features of the vocal tract during singing and its differences between Classics' (by X rays)**

a. Level of the singing larynx

Although both of them emphasize the larynx must "steady stand" during singing, but Chinese artists are the higher. The result of shortening the vocal tract is one of the main difference between them.

b. The length and thickness changes of the singing cords

In this paragraph, the alternative data about the length and thickness of the vocal cords singing in different pitches are displayed.

c. Shape and volume of the singing vocal tract

When singing the Chinese local opuses, the pharyngeal cavity (both laryngeal and oral part) is usually sphinctered into thinner shaping and the volume of the singing vocal tract reduced.

d. The problem about "nasal resonance"

According to the language, custom and fondness, many Chinese local opuses artists used their nasality. Under such condition, the soft palate is flattened and the palatopharyngeal is unclosed. Therefore, the passageway of the nasal pharyngeal is unblocked. Singing voice emitted through both oral and nasal cavities.

e. Mouth shaping

In Chinese local opuses, actors (or actresses) are not accustomed to vocal with wide vertical opened mouth but some transverseness.

**V. Discussion about the factors which may lead to the aforementioned differences**

a. Music

The range which after voiced in the theatre is an important factor. If the male singers usually voice higher than one to two octaves of their speaking fundamental frequency, the falsetto employment can't be very well avoid. In contrast, if the actresses melodies are fundamentally lower than  $d^2 e^2$ , the natural voice component must be added. Secondary, the instrument accompaniment is another important factor too. The formants of most of the accompaniment orchestras of Chinese local opuses are evidently higher (in Hz) than the Classics', and the components of higher harmonic are also much stronger. For reasons of voicing through the accompaniment orchestras, they modulated their resonant cavities unconsciously in order to concord.

## b. Language and Speech

Singing is a wordy music. Different local dialects and speeches may influenced the quality of their singing voice. Especially in Chinese local opuses, the melodies and singing technics are often closely bounded with their special dialect, so, the affection is very evident. Overemphasized the vowels, but neglect the accurate and clear pronunciation of consonants, so called "words wrapped in the voice" here, is opposed.

## c. Geographic factors

Geographical features, climates, environments, and life styles may influence our mind, disposition, aesthetic standard, even the speaking pitch, timbre and volume. All these may lead to the differences.

## d. Vocal education programme

Chinese local opuses pay the equal attention to sing and dance. Most of the artists received their vocal education from childhood. In according with customs, we wish the boys high pitches can be well retained after mutation. Therefore, the Change-Voice problem raised.

## VI. Prospects

### a. The relationship between Singing Arts and Science

Although "Scientific Vocal Method" has been a modern term prevailing thorough the world, singing arts and science still separately belong to different classifications. Science is not equivalent to singing arts and can't replace singing arts further, but can only tell the singers

"what", "how" and "why". Once the scientific knowledge is accurately and rationally employed in vocal education and practice, the essentials of singing arts may be easily to catch and the youth of voice shall be prolonged.

But the singing norms are colourful. Overdraw a certain singing school, even affirm that's the only "scientific" one, is unsuitable. Otherwise attribute most of the singing-voice-disorders to "wrong vocal methods" is another bias too. Because the etiology is complex.

### b. The definite of "Scientific Vocal Method" (my personal idea)

There are many general characteristics between different singing norms. But the individual, even the personal characters are usually combined together with it simultaneously. When a vocal method can not only keep with the given norm, but is highly efficient as well, the title of "Scientific Vocal Method" may be rated.

### c. The main responsibilities of singing arts scientists

I have been working to serve for the singers' voice for several decades, and I think my main job is to conduct propaganda and education about voice hygiene and science, to search voice with modern techniques, make out physical and physiological explanations for different psychological feelings about singing.

### d. The singing arts science of 2000.

#### Supplement

The treatment experiences of singing voice disorders (with a report of 2500 singers investigation).