

On the Importance of Overall Regulation of Singing to Vocal Music Performance

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Abstract. Vocal music performance is an extremely complicated systematic engineering, which requires the coordination of human body, singing-related organs and muscles. The overall regulation of singing gets rid of the empirical theories, takes human physiology as foundation and the principle of general breathing sport as ground, teases out and solves several pairs of main conflicts from the multiple factors related to singing through demonstration so as to reach the perfect singing state.

1 Introduction

In the big family of performing arts, vocal music performance is one of the oldest and most favorite forms. It is so popular because of the beautiful tone, amiable language, sincere feeling, etc. of the singer. There are famous sentences in Chinese classic singing theories like “the silk string music is no better than the bamboo one, while the bamboo is no better than human voice” and “the vocal song is better than the flute”, which show the characteristics that vocal performance arts have over other performance arts. If one wants to reach the highest state of vocal music art, he has to grasp the right singing methods and work hard. The writer, basing on the singing and teaching experience over years, considers that, the singer, only by realizing the whole regulation of singing, can step towards the free kingdom of vocal music art.

2 The basic connotation of overall regulation of singing

The overall regulation of singing is spoken relatively compared with local regulation. Human body, as the musical instrument of singing, should engage itself wholly in singing. The regulation of singing instruments is that of the whole human body. From the highest skull to lowest heel, all body parts should take part in the overall regulation. The old saying “to breathe to the pubic region and pass the air to the skull” is talking about the overall regulation of singing. Speaking from the level of force, it includes that of breathing downwards, of sucking ribs open, of relaxing laryngeal muscles and closing vocal cords, and that of raising the upper mouth cover and facial nerve muscles, none of which are dispensable. Behaviors can be divided into visible and invisible ones. Visible behaviors are mainly the physical behaviors as well as these of raising the upper mouth cover and facial nerve muscles of the singer, while the invisible behaviors include those of blocking the breath by lowering larynx, sucking ribs open and breathing downwards. All of the behaviors mentioned above should be unified in a big behavior - “yawning”. The yawning completed in the twinkling of an eye includes all the behaviors in the overall regulation of singing. The overall regulation, speaking from the level of resonance, includes head, oral and chest cavity resonances. It doesn't exist solely, which must be the result of putting force one's strength correctly on the base of overall regulation. Guided by nerves, the correct force of singing would create instruments scientifically, and excellent instruments would produce reasonable resonance cavity and beautiful voice under the influence of breath, the power of singing. This kind of beautiful voice has the characteristics of beautiful tone quality, tone color and resonance. Therefore, the overall regulation of singing has a series of chain reactions - a slight move in one part may affect the situation as a whole. Speaking

fundamentally, the essence of the overall regulation of singing is the results of coordinating all forces.

3 The scientific basis of the overall regulation of singing-in accordance with the general breathing theory of human body

The overall regulation of singing takes the movement regulation of human body as the main. Therefore, it has inner connection with the anatomy of medicine. We know that the thorax of adults shape like cone, made up of thoracic vertebra, 12 pairs of ribs and a sternum. There are important organs of heart, lung, liver and spleen in people's chest, while thorax plays the role of protection and support and engages in the breathing movement. Diaphragm is the dome-shaped ductile muscle rising upward, which separates the thorax into chest and abdomen. There are two organs of lung and heart in one's chest. Lungs can't expand and contract forwardly, which relies on the movement of chest.

The front, back, right and left walls are made up of ribs, sternums, vertebra and the muscles attached. Diaphragm becomes the bottom of thorax and is governed by thorax nerves. Its dome goes down when contracting, causing the highest and lowest diameters widening and the visceral organs moving down, so that the intra-abdominal pressure goes up and the abdominal wall bulges. Dominated by the external intercostals' nerves, the external intercostals' muscle would raise and bulge ribs during contracting, make the sternum move upward and enlarge its front, back, right and left diameters, so that the volume of the chest and lung would enlarge to help the air enter into the lung, which is the inhaling action; when the diaphragm and the external intercostals' muscle expand, the diaphragm and ribs as well as the visceral organs would return their upper place with restraining napes and shrinking thorax to help the air in lung exhaled, which is the exhaling action. [1]

According to the breathing principle of human bodies, the overall regulation of singing follows the principle of general breathing movement of human body, helping the movement developed and strengthened.

4 To solve the problem by the dialectical viewpoints is the guiding points of the overall regulation of singing

The opinion on the overall regulation of singing is a common occurrence in many discussions. For example, there is a chapter specially introducing the overall co-movement of singing in *The Vocal Music Teaching of Shen Xiang* by Professor Shen Xiang, a famous vocal music educator in China. It is written that "generally speaking, singing is a series of co-movements of breath, vocal resonance and pronunciation. The methods of these aspects would mess up when speaking together, so that they can only be talked about individually. But we have to consider issues as a whole, since these aspects relate to each other." Professor Zhou Xiaoyan always stressed in actual teaching that "the inter-coordination and comprehensive role-playing of chest, laryngeal, pharyngeal, nasal and head cavities is the key of performers to acquire beautiful voice." [2] How to perform the overall regulation of singing? Which aspect should be taken as the entry point? The writer considers that the solving of several pairs of contraction existing in singing is the key to the overall regulation of singing.

4.1 Sucking cavities open and opening throat

At present, the general idea in vocal music circles is to open the throat. How to open your throat? Gino Bechi, the world famous opera master and baritone singer believes that "keep the Adam's apple in the lowest place and try to open the throat to help the vocal cords work completely free." [3] Professor Wang Fuzeng also believes that "the core of the correct singing state is to open the throat with the way of blocking the air by lowering the throat." [4] It can be seen that it's important to open your throat. However, the writer thinks that the idea of "opening throat" is not comprehensive, so it is better to use the concept of "sucking the cavity open". Since the "making musical

instruments” before singing doesn't just mean opening your throat, only through the action of “sucking the cavity open” can we really relax ourselves to suck all the cavities needed for singing open.

Let's look at how the sucking-open of cavities is completed. According to the overall regulation theory of singing, sucking cavities open consists of three aspects: sucking throat open, sucking ribs open and lifting the upper mouth cover. The three movements are performed simultaneously, completed at the moment of inspiration. The act of sucking cavities open is the preparatory action before singing. “A good beginning is half done”. If the preparatory action before the singing is done well, the cavity is all opened and the “musical instrument” is made well, it is more possible to pronounce the right sound. If there is no preparation before singing, there is no musical instrument, and the sound is definitely wrong. The overall regulation theory of singing regards the preparatory action before singing-“sucking the cavity”-as crucial. There must be the action of sucking cavities open before every phrase. This process is to suck open and keep the cavity-singing, the phrase, then relax, suck open and keep the cavity open, and sing finally.

4.2 Blocking the air by lowering the throat and raising the upper mouth cover

Needless to say, keeping and coordinating the movements during singing is as important as the preparation before singing. How to solve the coordinating relationship between blocking the air by lowering the throat and raising the upper mouth cover is the key of the overall regulation. So, what's the act of blocking the air by lowering the throat like? Gino Bechi said when answering to the question of Dr. Wang Zhenya that “I just need to make the Adam's apple drop according to the need of voice to achieve the aim of making sound good”, which shows the essence of the blocking of air by lowering larynx. More specifically, “in singing, each word, each tone, each bar's key tones or key words should follow this action. Only when the action is right, you can feel the breath support. In a word, it is a basic self-control action to train the lowering of larynx to block the air to pronounce. And during singing, this movement should run smoothly throughout!”[4] The action of lifting the upper mouth cover takes words as carrier. First of all, the strength point of a word should be at the front of the upper jaw close to the front teeth, while the initial and center of a word should both start from this point and continue to be lifted up in the process of prolonging sound. The focus of the word mustn't be moved backward. The coordination of blocking the air by lowering the throat and raising the upper mouth cover is to take the vowel of each word as the carrier while performing the two actions at the same time. The proper coordination action should make the singers feel that the words are above the top of the upper mouth cover and also below the throat. The higher the sound is, the stronger the feeling of up-and-down coordination would be. Therefore, especially in the use of teaching terms, this problem should be dialectically analyzed and studied, and one should not consider some opinion as absolute, mechanical, and metaphysical.

4.3 The support of thoracic diaphragm and the way of inhaling

With the development of modern physiology, the support role of diaphragm in singing has increasingly attracted people's attention. The discussion of this issue is numerous. The overall regulation of singing also attaches great importance to the important role that the diaphragm plays in singing. In the specific operation process, the overall regulation of singing pays more attention to the close coordination relationship between itself and breathing. “The diaphragm is the dividing membrane between human cardiopulmonary and intestinal systems. As far as human body shapes and diaphragm functions (inferior fovea when inhaling, upper convex while exhaling) and senses, it is indeed like the piston of a gas container. Whether it is the general breathing that maintains human life, or that gives the impetus for people's living language, or that provides the supportive breathing for artistic voice, the diaphragm is always the Hercules and leader among the muscles in thorax and abdomen, which directly forms the force center of breathing muscles when singing.”[3] However, at the same time, we know that the diaphragm lays in the interior of the body with the characteristics of indirect operation, whose use can only be obtained indirectly by coordinating with the breath of singing to play its role in singing. In the overall regulation of singing, the breathing of singing

conforms to the principle of general breathing movement of human body, and receives further development and intensification on this basis. This kind of development and intensification is achieved by expanding breathing movements, thus is called deep breathing. The three elements involved in deep breathing should be done simultaneously: firstly, yawn like smiling as opening the mouth and nose at the same time when the upper mouth cover being lifted, the throat open and the throat position lowered; secondly, the inspiratory muscle groups on two-side ribs, back waist and back feel like expanding outwards and downwards; thirdly, under the guide of ideas, lower the breath along the back and back waist in a moment, also known as breathing to the pubic region. At this time, the lower part of lungs would expand when inhaling air, causing the passive contraction and downwards-movement of the diaphragm, which can not be directly operated, under the joint function of the rib expansion, the force of breath sinking and the weight of itself. During the expiration, the diaphragm and the organs inside the abdominal cavity would get back to their original state. In the alternatively exhaling and inhaling behaviors, diaphragm, as “the piston of gas container” exerts great power in singing.

It can be seen that the exertion of the sustaining strength of diaphragm is closely connected with the way of inhaling from the discussion above. The overall regulation of singing emphasizes the breath while inhaling and also the inhaling position of back waist and back. This inhaling method has the advantages of deep inhaling position. The role of the diaphragm plays in singing is needless to say. However, the deep motive that exerts its power should be breathing for the confrontation of inhaling and exhaling forms the continuous force of singing, becoming “the founder of the building of singing language.” [3]

4.4 Tone and resonance of voice

“Resonance is the most important factor in sound production. It gives the volume and tone of voice and strengthens its sonority. In order to produce a loud and pleasant voice, it is more important to rely on resonance than on strength.”[5] Since the voice of the vocal cords is very small, thin, and unpleasant, it can not become the voice of singing and relies on resonance to expand and beautify the sound so as to be able to be called as the voice of singing.” [6] Gino Bechi, the world famous opera master, regards resonance as one of the three principles of his vocal music teaching. The overall regulation of singing is bound to produce overall resonance since resonance is the regulative product of the singing movement which must be built on the basis of correct and reasonable singing. In traditional opinion, the resonance in singing can be divided into head cavity resonance, oral resonance and chest resonance. There is no resonance that exists alone in singing, which varies with the pitch and style of the song. For example, the classic-style Chinese songs of Long Acquaintanceship, One Plum Blossom and West Lake Moon are required to show an elegant, distant, ancient artistic conception, so that the use of head cavity resonance is more which can be shown on the movement regulation of singing. That means to, on the premise of overall regulation, raise higher the upper mouth cover and roll up the vowels of each word, and one even can feel the word “fly out from the scalp.” When singing the song Clear River, since it intends to express the rustic and fresh style of local folk songs, the singer should increase the oral resonance and pharyngeal resonance basing on true voice and color, so as to make the voice sound brighter and more cordial.

Resonance is closely related to tone. “When deciding the tone quality of singing, especially its different change, resonance is almost the decisive factor.” [7] If sound has no color, the art of singing will not exist. A singer who has the organ beauty but no tone change and no control power won't catch the heart of the audience for long. Of course, in order to sing out the full feelings of a song, there must be a variety of ways.” [7] A singer's timbre is as colorful as a painter's hue, and a mature singer, in order to fit the needs of performance, can freely change the tone he needs while one of the most important factors in adjusting tones is the rational use of resonance.

All in all, the overall regulation of singing, as a “golden key” to solve many difficult problems of voice technology in singing, has attracted more and more attention. Singing without realizing the

overall regulation can not be called as the correct singing. The overall regulation in singing is accomplished instantly by the direction of brain to human body, so it requires the movement to be skilled and automatic. As the ultimate goal of singing art, technology should serve art after all to achieve the perfect unity of singing technique and artistic expression. However, “to do good work, one must sharpen his tools firstly”. If there is no hard work of “sharpening tools”, who can reach the other side of the success of singing art?

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