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The Theory of Vibrational Oscillation of the Singing Voice

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Annotation: *The skillful use of the resonators of the singing apparatus is one of the most important aspects of vocals. For most vocalists, skill comes with experience. The ability to direct the sound in the right direction is an important condition for a vocalist. Possession of a point of support. The singer must be able to extract the sounds of the lower and upper positions. For this, head, chest resonators are used. Development of figurative thinking. The voice comes from the larynx, but the artist must imagine that the sounds originate in the chest, and only then break out. When performing high notes, tutors achieve lightness of sound, the feeling that the sound, penetrating through the soft palate, comes out of the crown of the head.*

Keywords: *singing apparatus / use of resonators / vocalist / ability to direct sound / voice timbre / singing voice.*

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Half of the success depends on proper breathing, and the work is in daily training. Mastery teachers have a lot of tricks with which they achieve maximum opening of the larynx. Special techniques help to improve the technique for deep rich singing.

The word "Vibrato" comes from the Italian word "Vibrato" or the Latin "Vibratio" - the vibration of a musical sound. It is understood that the performance can be both instrumental and vocal. Vibrato is one of the indicators of the professional voice setting of a vocalist.

Often, teachers teach artificial vibrato imitation, and this is a very strange and even absurd process. This is an unprofessional approach to learning. If you learn to sing correctly, then vibrato is bound to occur naturally. It is the physical result of proper technique and proper vocal control. In order for vibrato to be born in performance, it must be developed first of all with the help of correct breathing, then relaxation of the body and vocal apparatus, as well as the correct functioning of the larynx.

Many vocal teachers do not even understand the difference (by ear and in theory) between trill, vibration and tremolo. It is possible that you will be taught one of the three techniques rather than vibrato.

A trill is the bleating of a goat. This is probably the most common association. Because the sound of the trill is quite sharp, abrupt and fast. This is due to the inability to breathe properly and evenly distribute air. In the end, it just dissipates.

Vibration is not a vibrato, but a deviation from an even speed. The voice begins with a slower and more muffled performance and, in addition, moves out of the main tone. This is due to insufficient development of musical ear, focus on tonality and, of course, poor breath control.

Tremolo is technically similar to vibration in the voice. Only if the vibration is slow in tempo, then the tremolo, on the contrary, is too fast. Technically, tremolo comes from an excess of laryngeal pressure, which leads to tension at the root of the tongue.

Little fact. Vibrato releases tension from the vocal cords. For a very simple reason: due to the free pulsation of the larynx. So, now we roughly understand what vibrato is in a voice, so let's answer the question of how to do vibrato in vocals and move on to the exercises.

Rest your fingertips on the solar plexus and say the easiest syllable or vowel for you, for example, "A". Release the sound calmly, at a moderate volume and a uniform air flow, press your fingers on your stomach with a frequency of 3-4 times per second.

The larynx is the muscle that controls air pressure. As we know, ligaments are also muscles. As with any physical load on the body in the gym, if you memorize the exercise incorrectly, then it will be very difficult to retrain in the future. Simple chanting on a tessitura that is convenient for you will help you master vibrato.

Always remember that vibrato must be appropriate. Use this technique only at the right places in the songs so that your performance doesn't sound like a broken record.

Vibrato is a stylish vocal feature and should match the character of the song. It can be used throughout the entire phrase or word, at the beginning of a line, then you should switch to an even sound, or, conversely, first sing smoothly and switch to vibrato. Combine with subtone vibrato, crescendo, diminuendo - they perfectly emphasize this vocal technique.

The sound of a human voice during singing is usually accompanied by peculiar periodically pulsating shocks, as a result of which the continuous flow of sound seems to break up into separate, with one speed or another following one another, sound segments. This is the so-called vibration of the voice.

The term vibration, as applied to the phenomenon under consideration, acoustically does not accurately express its essence. Vibration in the acoustic sense is understood as the correct periodic oscillatory movement within certain frequency limits, which causes the formation of a continuous, uninterrupted flow of sound having a certain height. Violation of these conditions in terms of periodicity and quantitative minimum turns a musical sound phenomenon into a noise one. The same phenomenon, which is called vibration in the voice, is a violation of acoustic vibration from the side of its continuous continuous flow, with almost unchanged other conditions characteristic of musical sound - pitch, strength and timbre. If, therefore, the concept of vibration, from the point of view of the correctness of acoustic terminology, covers the necessary conditions for the emergence and continuous flow of sound, then the term vibration, applied to the human voice, defines a special case of vibrational periodic sound movement. Being an organic element of singing sound, vibration gives the voice a special beauty, expressiveness and the ability to have a great emotional impact.

The nature of the vibration is individual for each voice and to some extent determines its quality. Thus, vibration can, to a certain extent, be considered even as a certain element of the timbre of the voice.

The nature of the vibration is determined from childhood and remains unchanged for life. Only in old age, for many singers, the vibration changes in its character and often turns into the so-called trembling of the voice (swinging sound). For some, vibration is absent or weakly expressed, and are considered to have no artistic value. Conversely, voices to which vibration gives a special beauty are full-fledged.

Persons with an ugly vibration of the voice sometimes resort to artificial methods that make it possible to change its character. This is achieved with the help of periodic tremulous movements of

the hand or finger attached to the larynx. Through systematic practice, some succeed in creating an artificial vibration of the voice so satisfactory that it is difficult to distinguish it from the natural. I had to observe the complete illusion of the natural vibration of the voice, caused by the above described method, among the clergy (cantors) of the Jews: thanks to the veil (tales) used during worship, covering the whole body, they skillfully concealed the trembling movements of the hand, causing the vibration of sound. Vibration is such a valuable element of the human voice that, presumably, it was in imitation of it that vibration began to be used when playing various musical instruments (for example, the violin, cello, and some wind instruments).

If tremolation and vibration of the voice are a variety of the same acoustic phenomenon, then the question of the reasons for their different assessment by our hearing is extremely interesting.

The essence of the pleasant effect of sound trembling on human hearing is obviously based on the physiological significance of intermittent irritation: in contrast to continuous irritation, which intensely tires the organ of perception and thereby dulls its further susceptibility, intermittent stimulation produces a stronger effect in view of a possible (at the time of the break) recovery spent energy.

The trembling of the voice is usually performed at a slower pace than the vibration, and this may be one of the reasons for the unpleasant effect of the trembling voice on the ear. But trembling differs from voice vibration not only quantitatively, but also qualitatively. When trembling, the transition from one pulsation to another occurs without the gradualness and softness that exists during vibration, taking place abruptly, jerkily: the sound does not tremble, but sways.

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