On The Issue Of Singing Breathing

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ABSTRACT

The article addresses the formation and development of singing breathing in a historical context. Various types of breathing are examined, and creative recommendations for their practical mastery are provided.

Keywords: Breathing, breathing in singing, types of breathing, respiratory organs, cantilena, respiratory system, exhalation control

Introduction

The issue of breathing in singing has always remained relevant and pressing, for, as is well known, without breath the vocal process is practically impossible. At the same time, there are very few specialized scientific studies devoted specifically to singing breathing. One reason is that the topic of breathing is indirectly touched upon in almost every scholarly work related to the art of singing. Another reason lies in the fact that understanding the subtleties of the respiratory system during singing is an exceptionally complex task; the study of breathing peculiarities requires the collective efforts of physiologists and vocal specialists. The primary reason for the insufficient investigation of the resources of singing breathing, however, is the absence of a unified, established viewpoint on this subject.

Existing perspectives on breathing in singing are highly diverse and at times even diametrically opposed. L.Yaroslavtseva, a researcher of singing-breathing mechanisms, arrives at the following conclusion: “However, the opinions of teachers and singers regarding breathing were-and remain-highly contradictory.” [1,2,3].

S.Migai, who examines breathing in singing, writes: “Examples of contradictory judgments about breathing types can be multiplied endlessly. Disputes concerning the advantages of one type of breathing over another often result from the lack of precise scientific terminology.” [4].

The statements cited above from authoritative representatives of the vocal arts confirm both the complexity and the insufficient development of the problem of breathing in singing. Meanwhile, the issue of singing breathing urgently requires specialized and focused consideration.

In addressing the issue of breathing in singing, the author of the present study sought to rely on her own practical experience in both pedagogical and performance activities. At the same time, the author naturally draws upon the accumulated experience of historically

established world vocal schools. For the purpose of introducing the topic, the author deemed it necessary to outline several points concerning the specific features of vocal sound formation, the mechanism of phonation, the functioning of the vocal apparatus, as well as a generalized description of the main types of singing breathing.

When choosing a type of breathing in practical vocal work, a teacher must take into account the historical development of breathing techniques and their correlation with the evolution of musical styles, genres, and forms, as well as with the changing views of prominent vocalists regarding singing breathing. Alongside this, it is essential to consider the physiological aspects of the human body as a vocal instrument and the individual characteristics of a singer's respiratory system [5].

Mastery of breathing constitutes the technical foundation of professional singing. The central aspect of singing breathing lies in the ability to manage the exhalation economically and purposefully. Perfect command of breathing is the result of daily, consistent vocal training, as well as sustained work on artistic repertoire.

In examining the issue of breathing in singing, it should be emphasized that the functioning of the respiratory system during speech and singing phonation is closely interconnected with the activity of the larynx and the articulatory apparatus. The essential components of the vocal apparatus include the respiratory system, the larynx, the articulatory apparatus, the oropharyngeal channel, and the vocal tract.

A singing tone can be produced only when all components of the vocal apparatus function fully and in coordinated interaction. Through their combined work, the larynx and the respiratory system generate the sound of the singing voice—a sound of specific pitch, strength, and partially timbre. The glottis acts as a valve that prevents the free escape of air during phonation. The vibration of the vocal folds during sound production necessarily involves the airflow. Therefore, when speaking of breathing in singing, one always implies the activity of the larynx, and vice versa.

The organs of respiration include the trachea, a hollow tube descending into the thoracic cavity, where it divides into the right and left bronchi, which branch repeatedly, forming the bronchial tree. Through this tree, air passes into the lung tissue. The trachea and primary bronchi are composed of incomplete cartilaginous semicircular rings that prevent the airway walls from collapsing. The open portions of these semicircles are formed by smooth muscle fibers located beneath the mucous membrane.

The smaller the bronchi become, the less cartilaginous tissue remains in their structure; smooth muscle fibers take its place. The smooth muscle tissues of the bronchial system are regulated by the nervous system and are not subject to direct voluntary control. Depending on the needs of the organism, the bronchi regulate their own lumen.

Pulmonary tissue is airy and elastic; its main volume consists of air-filled alveoli. The elasticity of lung tissue makes it a poor conductor of sound, which must be kept in mind when discussing the issue of the so-called "chest resonator." The lung tissue is covered with a shiny, smooth membrane—the pleura—which allows the lungs to completely fill the thoracic cavity, fitting tightly against its walls.

Thus, the visceral pleura and the parietal pleura adhere to one another, enabling the lungs to glide freely during inhalation and exhalation. The lower surfaces of the lungs rest upon the diaphragm. The lungs themselves contain no muscles capable of producing inhalation. Inhalation occurs due to the outward expansion and lifting of the rib cage, as well as the descent of the diaphragm.

The lungs, following the movements of the thoracic walls and the diaphragm, stretch outward and downward, allowing air to enter the tracheobronchial tree. Inhalation is always active and is carried out by the striated skeletal muscles of the thoracic cage and the diaphragm, which are under voluntary control.

The inspiratory muscles include the numerous groups of skeletal muscles capable of raising and expanding the ribs and the diaphragm. The diaphragm - or thoracoabdominal partition – Is a muscle of complex, dome-like shape with a

tendinous center. It is attached to the body walls anteriorly along the costal arch, and at approximately the same level along the lateral and posterior sections of the body cavity. When the diaphragm's muscle fibers relax, the dome rises upward, which occurs during exhalation. During active exhalation, the abdominal muscles contract, while the diaphragm relaxes and is pushed upward by intra-abdominal pressure.

The respiratory system is controlled by the nervous system in two ways: voluntary and involuntary, both of which we are able to regulate.

In vocal art, the following types of singing breathing are used:

• **Clavicular (upper-chest) breathing**, in which respiratory movement is achieved by expanding and lifting the upper part of the chest. The diaphragm passively follows the rib cage and is thus excluded from its active inspiratory function. The abdomen is drawn in, and the upper chest, clavicles, and sometimes shoulders rise noticeably.

• **Lower-chest breathing**, in which inhalation occurs mainly through the expansion and lifting of the lower thoracic region. It is not an independent type of breathing, since the diaphragm inevitably participates in the process. Lower-chest breathing should be considered a variant of the lower-rib diaphragmatic type. This form of breathing is the most widespread. Both the rib cage and the diaphragm are actively engaged, and therefore the abdomen slightly protrudes during inhalation.

• **Abdominal (diaphragmatic) breathing**, in which the rib cage remains immobile during inhalation while the abdomen extends forward. The abdominal muscles function during exhalation, while the diaphragm functions during inhalation.

• **Pelvic-diaphragmatic breathing**, which currently plays no role in respiratory movement due to its anatomical location. Beneath the pelvic diaphragm lies the muscular floor of the pelvis, which serves as a closure preventing exhalation from this region. There is no basis for assuming that the pelvic floor can play any significant role in singing. One may only hypothesize that this type of breathing might receive development in vocal practice in the twenty-first century.

How, then, did the types of breathing and the methods of their use develop historically? With regard to the application of singing breathing in vocal practice, one may say that throughout all periods of history there have always been as many opinions as there were singers. Some believe that during singing the chest must be broadened and well lifted while the abdomen is drawn in. Others insist that one should inhale "downward," into the abdomen, but then transfer the breath into the chest and tighten the abdomen. Still others recommend inhaling into the sides; some - into the back; others - into the abdomen while excluding the chest from movement; some advocate using exclusively lower-abdominal breathing; and yet others speak of the necessity of breathing with the pelvic diaphragm.

In the Old Italian School (17th–18th centuries), great attention was given to breathing in singing. The chief requirement was not to overfill the lungs and to use the breath with utmost economy. Various techniques, which singers altered from performance to performance, astonished listeners with their breath control (for example, singers were able to perform two-octave chromatic scales in a single breath). Italian singers such as Tosi and Mancini did not specify a particular type of breathing, while their follower Manstein spoke of a thoracic type of breathing.

Breathing in singing was attributed enormous significance by M. Garisa, who stated: "Breathing, which holds the entire apparatus in its control, exerts the greatest influence on the character of the sound and may render it firm or trembling, connected or detached, energetic or weak, expressive or devoid of expression." [6].

In the New Italian School (second half of the 19th century), significant differences emerged in comparison with the Old Italian tradition. The renowned pedagogue F. Lamperti exerted great influence through his methodological principles. His well-known statement—*"The school of singing is the school of breathing"*—became proverbial. He recommended

breathing through the nose, crossing the arms behind the back during singing, lowering the shoulders imperceptibly, and expanding the thoracoabdominal partition and abdominal muscles. Here we observe a clearly defined thoracic-diaphragmatic type of breathing.

The primary reason for the shift toward this type of breathing was the new vocal character that came into use after the reforms introduced by the celebrated dramatic tenor Gilbert-Louis Duprez. A transition took place - away from coloratura, lightness, and elegance, and toward a more powerful, dramatic sound (as required in the operas of F. Halévy, G. Meyerbeer, and G. Verdi). The falsetto quality of the upper vocal register could no longer adequately convey the dramatic demands of 19th-century Romantic opera [7,8,9,10].

As a result, the so-called mixed, covered production of the upper range of male voices was discovered and introduced into operatic singing practice. On this basis, the concept of "supporting the sound on the breath" (*appoggio*) emerged.

Thus, the nature of vocal parts and the style of their performance required singers to search for new modes of sound production, new vocal qualities, necessary technical skills, and, naturally, appropriate vocal training. Historically, the type of breathing and the character of vocal sound have always been closely interconnected.

Vocal-technical mastery can be achieved using any type of breathing; that is, various breathing types may be employed in singing.

In Russia, breathing in singing was thoroughly studied by L. Robotnov. His hypothesis suggested that during exhalation the thoracic and abdominal walls did not collapse, or made only minor expiratory movements, and that the activity of the lungs—rich in smooth muscle fibers—played a more significant role. According to his theory, exhalation during paradoxical breathing occurred due to the contraction of these smooth muscles.

Still relevant today is Robotnov's observation regarding the relationship between breathing and psychology: *"The problem of singing breathing as a means of dramatic expression remains an underdeveloped aspect of the psychology of the singer."*

Teachers of the twentieth century, as previously noted, expressed highly diverse and sometimes categorical opinions on the types of singing breathing. K. Krzhizhanovsky promoted thoracic breathing; I.Pryanishnikov advocated diaphragmatic breathing; S. Sonki considered the lower-rib diaphragmatic type to be correct; O. Sefferi argued for the exclusive use of deep, artificial abdominal breathing. Vocal pedagogue D. Belyavskaya asserts: "I consider the primary type of singing breathing to be the costal–diaphragmatic type, as it is the most advantageous for the singer and yields the best results with the least expenditure of energy." [11].

A. Solovyova proposes the following approach when working with beginning singers: "I recommend the type of breathing that is now considered universally accepted. This is costabdominal (thoraco-abdominal) breathing, which is the result of many years of observations, achievements, and practical conclusions drawn by a number of renowned singers and professors of vocal art." [12].

In modern vocal practice, singers experience various subjective sensations related to the breathing process. Some singers inhale so inconspicuously that it is barely noticeable, while others engage the rib cage quite actively. Certain singers - among them R. Scotto, V. Taylor, and G. Gasparyan - use chest movement so fully that a noticeable rise of the upper clavicular area can be observed. It is well known that N.Obukhova used full thoracic breathing.

The amount of breath singers take also varies significantly. Some manage with a very modest intake of air, while others, on the contrary, strive to fill the entire respiratory system as fully as possible. All singers acknowledge the necessity of breathing in singing, but for some it is understood as the leading factor in sound production, whereas for others it is not accorded particular importance.

A singer must, without question, be able to control his or her breath. In this regard, Enrico Caruso remarked: *"A singer may possess the most reliable ear and the best intentions, but if*

he does not know how to control his breath, he will not sing in tune or will produce lifeless, feeble sounds."

The history of vocal art, as well as contemporary practice of singers and pedagogues, demonstrates that high professional mastery can, in principle, be achieved with any of the breathing types discussed above. Experienced vocal teachers are always capable of identifying shortcomings in a student's breath management by listening to the sound itself. Thus, deficiencies in breathing technique can be determined acoustically - by ear. For the teacher, the essential question remains which type of breathing should be employed.

At a scientific-theoretical vocal conference held in Bulgaria in the 1980s, the usefulness of the lower-rib diaphragmatic (abdominalm - costal) breathing was emphasized. This type of breathing is considered the most suitable for the coordinated functioning of all other components of the vocal apparatus. In pedagogical practice, its application yields strong artistic results. A calm and moderately deep inhalation, a brief pause before phonation, a smooth release of breath, and the ability to distribute the airflow - these are the necessary principles of breathing that should guide the work with students.

The optimal model of singing breath may be considered the mixed type, which ensures the most favorable regime for phonatory exhalation. In our view, it is advisable to employ different breathing types when performing music of various styles, selecting the one most appropriate for the stylistic characteristics of the epoch in which the work was created.

A vocal pedagogue is obliged to find an individual approach for each student when choosing a breathing type and when working on techniques and exercises aimed at developing respiratory movements during singing.

It is important to be able to determine the type of breathing used in singing. "The type of singing breath," recommends L. Yaroslavtseva, "should be identified not by the nature of the inhalation, as has been customary until now, but by the manner in which the phonatory exhalation is regulated. A classification of breathing types must be based precisely on exhalation, for it is the defining factor in the dynamic characteristics of the voice."

Only a creative approach-one that avoids categorical judgments concerning breathing in singing-can yield truly productive results in the pedagogical and performance practices of the modern vocalist.

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