

**ON THE PROBLEM OF SYNTHETIC NATURE
OF SOUND GENERATING MACHINE OF A WIND INSTRUMENT MUSICIAN
(performing and pedagogical aspects)**

The purpose of the research is to learn natural interactions between performing breathing, resonators and embouchure as generating foundation of understanding of holistic and synthetic nature of academic sound producing machine of a professional wind musician. **The methodology** consists in fundamental and general scientific systems of scientific principles. The basis of fundamental methodology is dialectical approach, which argues cause-effect relationship in cooperation of performing breathing, resonates and embouchure. The general scientific methodology includes some theoretical and empirical methods of scientific cognition. Theoretical foundation of the research consists of modeling, systematization, generalization as well as induction and deduction methods. The methods of observation (indirect) and comparison form the empirical means of cognition. **Scientific novelty** of the investigation is determined by the absence of constant awareness of integrity, natural synthetic character of the interaction of components of sound producing machine of a wind instrument musician. **Conclusions** of this research argue synthetic principle of simultaneous action of constituents of sound generating system on wind wood and brass academic instruments. Essential meaning of performing hearing develops holistic process of sound producing.

Keywords: sound generation, performing breathing, embouchure, resonators, lips' machine, air pressure, performer, wind academic instruments, performance, pedagogics.

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До проблеми синтетичної природи звукоутворюючого апарату музиканта-духовика (виконавський та педагогічний аспекти)

Мета роботи полягає у визначенні найбільш природних взаємозв'язків між виконавським диханням, резонаторами та амбушюром, як генеруючого фундаменту усвідомлення цілісної, синтетичної природи академічного звукоутворюючого апарату професійного музиканта-духовика. **Методологія** дослідження ґрунтується на використанні фундаментальної та загальнонаукової систем наукових принципів. Основу фундаментальної методології складає діалектичний підхід, який аргументує причинно-наслідкові зв'язки у взаємодії виконавського дихання, резонаторів та амбушюра. До загальнонаукової методології належить низка теоретичних та емпіричних методів наукового пізнання. Теоретичне підґрунтя дослідження складають методи моделювання, систематизації, узагальнення, а також індукції та дедукції. Емпіричні засоби пізнання формуються на методах спостереження (опосередковане) та порівняння. **Наукова новизна** роботи визначається відсутністю усталеного усвідомлення цілісності, природної синтетичності у взаємодії компонентів звукоутворюючого апарату музиканта-духовика. **Висновки** дослідження обґрунтовують синтетичний принцип одночасної дії складових системи звукоутворення на духових дерев'яних та мідних академічних інструментах. Комплексне значення виконавського слуху розвиває цілісний процес звуковидобування.

Ключові слова: звукоутворення, виконавське дихання, амбушюр, резонатори, губний апарат, тиск повітря, виконавець, духові академічні інструменти, педагогіка.

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К проблеме синтетической природы звукообразующего аппарата музыканта-духовика (исполнительский и педагогический аспекты)

Цель работы состоит в определении наиболее природных взаимосвязей между исполнительским дыханием, резонаторами и амбушюром, как генерирующего фундамента осознания целостной, синтетической природы академического звукообразующего аппарата профессионального музыканта-духовика. **Методология** исследования основывается на использовании фундаментальной и общенаучной систем научных принципов. Основу фундаментальной методологии составляет диалектический подход, который аргументирует причинно-следственные связи во взаимодействии исполнительского дыхания, резонаторов и амбушюра. К общенаучной методологии принадлежит ряд теоретических и эмпирических методов научного познания. Теоретический фундамент исследования составляют методы моделирования, систематизации, обобщения, а также индукции и дедукции. Эмпирические средства познания формируются на методах наблюдения (косвенного) и сравнения. **Научная новизна** работы определяется отсутствием постоянного осознания целостности, природной синтетичности во взаимодействии компонентов звукообразующего аппарата музыканта-духовика. **Выводы** исследования аргументируют синтетический принцип одновременного действия составляющих системы звукообразования на духовых деревянных и медных академических инструментах. Комплексное значение исполнительского слуха развивает целостный процесс звукообразования.

Ключевые слова: звукообразование, исполнительское дыхание, амбушюр, резонаторы, губной аппарат, давление воздуха, исполнитель, духовые академические инструменты, педагогика.

The sound generating machine is most important component of technological process for professional performing. The complex character of interaction for breathing, resonators and embouchure constitutes its base. There are precise features of working for each of the three elements. The particularity of sound generating are manifested in different kind of breathing, in action unlike resonators, in diversity of activity for specialized performer's lips (embouchure).

Consequently, sound generating machine of a musician – wind instrument player is a complex and multipurpose concept. The particularities of interaction between its components are fundamental criterion for the most quality actions of sound generating process on specialized academic professional wood and brass wind instruments.

The sound producing apparatus of musician wind instruments also has most main meaning among the very many special themes. Performing breathing, resonators and embouchure learns, as a rule, separately. Certainly, there are complex complete and specialized training lessons, which combine these three thematic vectors.

Therefore, components of sound generating machine synthesize into single process for create instrumental sound. The procedural synthetic nature is main particularity for it, which expresses with indivisibility overall technological act.

Hence, the perception and practical implementation whole, synthetically nature of sound generating machine is greatest problem for make more quality sound producing apparatus of professional musician brass and woodwind instruments.

To the analysis of recent researches about this question. The specialized performing breathing, resonators and embouchure were researched a lot of investigators. Among them we are going to underline next outstanding and very authoritative creators. Contemporary scientists B. Apatsky [1], K. Mulberg [6], R. Vovk [3], Z. Burkatskiy [2], I. Gyshka [4], V. Posvaluk [7], G. Martsenuk [5] and others include in their studies diversity questions concerning components of academic sound generating machine for professional wind musician. But, we have to emphasize, that explorers learn these themes, parts of whole sound producing system separately from each other. The authors connect portions of sound instrumental process after analyses its separate large modules.

Because of foregoing, we have to accentuate attention to loss, to a certain extent, natural and indivisible of components for making sound of academic woodwind and brass instruments.

The purpose of this investigation is define original mutual relations between performing breathing, resonators and embouchure as base in order to realize complete, synthetic nature of sound generating apparatus for musician wind instrument.

The question is explored with interconnection of performing and pedagogical aspects this theme.

The basic matter of this article.

It known, that professional performing breathing is central and basic physiological source for playing on the academic wind instruments. Many modern kinds of playing breathing are constructing from the three main, fundamental principles. The performing abdominal, chest and mixed breathing always interconnect each other. This interrelationship creates new types breathing permanently (lateral, dorsal-lateral, full and not full mixed performing breathing and other).

The process of playing academic wind instrument is beginning from specialized breathing every time. Certainly, this is a complex physiological process for performers. It constitutes difficult relationships between phase's inhalation and exhalation, sensation of local pressure into abdominal cavity, determining special volume of air and its oscillations. As a rule, professional performing phase of specialized breathing in is very much quick and process of breathing out is extremely slow, longest.

Outstanding performers create maximal compression of air into abdominal cavity. Professional academic musicians always keep tension. This particularity constructs fundamental basis for produce and development specific sound for academic woodwind and brass instruments. Herewith, performing breathing influents to the absolutely all, without exception, expressive means, in particular dynamic, timber, articulation, phrasing, intonation and others components of expression for professional wind art.

The performing exhalation, its quality and important characteristics are always determined by working of resonators. Relatively, main resonator for performing process is channel (specialized way into a turd) of wind instrument. Nevertheless, one should not forget concerning physiological resonators in during playing. Extended cavity mouth, opened and freedom larynx, roundish throat are the most important components of overall progression for sound produce nature of wind academic instruments.

Exactly these parts of large resonator system influents to the performing breathing and to the playing embouchure of professional musician for wind instruments at the same time. The level of specialized exhalation and particular working of embouchure defines by maximal long air column, oscillations of air into abdominal cavity, into larynx and throat, oral chamber.

The experienced performer always senses action of resonators to the all parts of his organism, without exception any components. Ukrainian well-known researcher, musician, celebrated teacher, professor V. Apatskiy communicates next very authoritative word combinations concerning special working resonators for musician's wood and brass wind instruments: "Outstanding Soviet bassoonist, Professor A. Vasiliev said that he had felled vibration and resonance into all his organism in during good sounding his instrument" [1, 129].

Resonators do not only use for reclaiming the quality of professional performing exhalation. They have also unlimited significance in to making intensification working for embouchure of performer. This matter of fact determined by middle place of resonators relatively components for sound generating machine of musician wind instruments. Playing practice of performing breathing, resonators and embouchure confirms this judgment as at the same time in action and indivisible in realization the psychophysiological chain.

Embouchure is most important conclusive physiological component for sound producing machine of professional musician woodwind and brass academic instruments. In the broadest sense, embouchure is peculiar and very difficultly developing complex of labial muscles (labial machine of performer). Professor V. Apatskiy emphasizes following the matter of particulars: "22 and more muscles takes part into functioning labial machine. The most important of them for playing wind instrument are subsequent specialized muscles: the circular muscle of mouth, cheeks' muscles and muscles of cheekbones (small and large), muscle of laughter, square muscle for lifting up the upper lip, square muscle of the under lip, triangular muscle" [1, 60 – 61].

Accenting attention that all muscles of professional embouchure have to be considering in them indivisible nature of creative and physiological interaction. Here with, all particular processes for muscles-components of specialized musician's embouchure wind instruments complement working each other. There are not central and secondary muscles for professional embouchure. Each of them implements its functionality into holistic cooperation. This kind interpenetration is active all of the phase of performing process.

The free and not clamp lips' muscles are fundamental characteristic of embouchure. This is very difficult and hard task for reaching by everybody performing. It is deciding have to search in particular functioning of performing breathing, which must create peculiar stanchion (support) for professional embouchure. This prop is calling in our time as singular mainstay for air into breathing ways of musician wind academic instruments. In detailed understanding, the specialized prop of performing exhalation is certain pressure for air into abdominal cavity of artist.

The physiological resonators of musician wind instrument have also specialized pressure from abdominal cavity each performer (mainstay for column of air). In its turn, all resonators have fundamental significance, as already mentioned, for complete performing process. One of the most authoritative investigators of art playing trombone, Professor G. Martsenuk was writing following: "The quality sound of instrument in wind performing most dependent from right working resonators of special sound machine of performer, which influents beneficial to the all performing process" [5, 271].

The above indicates that the intensification components of sound generating machine produce in following sequence:

- 1) The performing breathing (the action muscles of abdominal cavity) is source for sound oscillation;
- 2) The fundamental system physiological resonators transform sound oscillation into breathing ways of musician (cavity mouth, throat, larynx and others);
- 3) The embouchure (complex of lips' muscles) processing air column, regulate of sound oscillation.

Nevertheless, they always construct highly professional, academic result of sounding instrument, emphasize, at the same time. Here with, all above components influents to each other very actively, in difficult interaction for every composite from overall large system of sound generating machine for musicians' wood and brass wind instruments.

The reality performing and pedagogical practice very often testify that musicians and teachers accentuate their large attention on the any one component of sound generating machine. Many creative personalities, as a rule, usually forget concerning difficult indivisibility and natural integrity overall process sound producing for academic wind instruments. As a result, musician creates different physiological and psychological restrictions, limits for yourself opportunities. Consequently, the probability decreases for reaching creative successes and development very much.

The conclusions. The aforementioned allows marking that particular activities between components of sound generating machine for musician wind instruments construct at their brightly reflected natural interaction. The energetic action of first component supplements by intensification of each other component. It is this fact creates realization complete, undivided system for born sound of profession wind instruments. The synthetic nature of sound producing machine of performer for sphere of wind academic performing art constitutes its main, fundamental characteristic. The most important particularity is equally actual as for vocational performing, as well as for process of occupational, different from age levels pedagogical activity.

The teacher of specialized lessons has to accurately form exact conception concerning synthetic, emphasizing, at the same time working of all the muscles of sound generating performing machine for having classes with his different pupils and students, for example, doing for production of complex special lips' muscles (embouchure). This principle, without exception, applies to absolutely all components creating academic sound while playing diverse wood and brass wind instruments.

The intensification of performing hearing is most significant provision to the development synthetic understanding of special working for sound generating machine of musician wind instrument. Performer, as a rule, concretizes a quality of sound result and memorizes features at the same time action, reaching unity for components of sound producing apparatus. Consequently, we are able to approve a fundamental fact, principle concerning standing holistic, synthetic nature of sound generating process for different instruments of large sphere professional wind performing art.

The prospects investigation for this theme. The particularity relationship for components of sound generating machine for vocational musician wind academic instrument must studied with active using corresponding innovative and technical equipment. It will allow receiving exact information relatively level and various gradations of coherence between components giving birth of occupational sound for academic different instruments of fundamental sphere contemporary wind profession performing art.

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POLY-GENRES IN UKRAINIAN CHAMBER-INSTRUMENTAL MUSIC: TYPOLOGICAL ASPECTS

The purpose of the article is to study the poly-genre music phenomenon through the prism of genre interference using the example of the chamber-instrumental music by Ukrainian composers at the turn of the 20th – 21st centuries. **Methodology.** The integration of musical-cultural, genre-genetic, textological and structural-semantic analysis methods helps to explore the topic, and allows expanding the typological classification of genre models of the chamber-instrumental ensemble, taking into account its new hybrid invariants. **Scientific novelty** of this study is formulated in the following positions: for the first time the poly-genre music phenomenon was examined on the basis of the Ukrainian chamber-instrumental pieces of the late XX – early XXI centuries; the influence of the genre interference on the process of formation of the poly-genre aesthetic-semantic and structural integrity of musical compositions was characterized; the features of genre interference in the chamber-instrumental music pieces by contemporary Ukrainian composers were systematized; the boundaries of the functioning of the poly-genre concept in the postmodern Ukrainian chamber-instrumental art were specified. **Conclusions.** The analysis of quantitative and qualitative parameters of the genre structure of modern ensemble works of Ukrainian authors indicates to the dynamic processes of transformation of the organological structure of chamber-instrumental genres. Interference as a phenomenon of inter-genre dialogue and