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Development of Timbral Hearing in the System of "School – College – Higher Educational Institution"*

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Abstract. Timbral hearing is one of the most important components of the contemporary musician's auditory complex. The author of the article examines the development of timbral hearing and suggests the possible paths of its development. The syncretic character of timbre, its interaction with other expressive means determines the corresponding aspects of timbral hearing: the timbral, the textural, the timbral-harmonic, the timbral rhythmic, etc. Different aspects among those indicated are accentuated at the various stages of instruction. At the intermediary and advanced levels of education, in connection with the separation into the different major fields of study, the prioritized skills for perfection of timbral hearing are determined. It is particularly the type of professional activities that stipulates the choice of musical material, as well as the prioritized goals and forms of work with it. The study of timbre, along with the other elements of the language of music, the development of timbral hearing as a part of intonational hearing corresponds with a systematic approach, presuming the study of the components of the integral with their inseparable connection and mutual influence. The incorporation of work on timbral hearing actualizes the potential of the great diversity of concrete timbral manifestation of music and meets the demands of the time and the changed technical conditions.

Keywords: timbre in contemporary music, contemporary solfeggio, timbral hearing, timbral solfeggio forms of development of timbral hearing, authorial methodologies

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Development of Timbral Hearing as a Topical Trend in Present-Day Musical Pedagogy

The development of timbral hearing is a subject that has been approached for over a hundred years both by researchers and practitioner-teachers. There is no doubt in anybody's mind about the importance of the receptivity towards the sound palette as an indispensable constituent part of the auditory complex of each musician, moreover, because the domain of timbre is an intensively developing sphere of composers' artistic quests in our time. It is a symptomatic phenomenon that, to take one example, sonoricity has been interpreted by a number of researchers as "the music of timbres" or a special type of harmony and timbre. [1, p. 18] In this connection, it is remarkable that in the programs of professional educational institutions there is an absence of a solfeggio section dealing with timbral hearing. An exception is provided only by the program for higher educational institutions compiled by Professor Marina Karaseva. However, the content of the present section is determined by the author as "the development of skills of adequate perception of the sonorities and the melodic-harmonic progressions in the conditions of various timbres, both natural and electronic." [2, p. 10]

The paradox is that the programs for children's preschool institutions and general education schools include information about the development of timbral hearing as about one of its goals. At the same time, in professional education, there has arisen a certain artificial division between sound and timbre, according to the disciplines of solfeggio and orchestration. The necessity of attention towards the perfection of timbral hearing and the introduction of the corresponding section into the course of solfeggio is obvious. Such a section must be presented in tutorial programs for this discipline on all the various levels of musical education. To include a section devoted to timbre into the programs of the elementary, intermediate and advanced levels, a unified conception of development of timbral hearing is indispensable. For this end, it is important to clarify the content of this concept.

Timbral hearing possesses various interpretations, depending on how one understands timbre and its role in the perception of music. Already in the early 20th century, Samuil Maykapar not only understood timbre as a particular feature of sound, because of which one instrument sounds unlike another, but also included into this conception the peculiarities of the sound of one and the same sonority, depending on the particular nuance, register and articulation. The masters of solfeggio Aron Ostrovsky and Elena Davydova interpreted timbral hearing more narrowly, presuming the capability of discerning timbre as one of the properties of sound.

Our approach is based on Asafiev's concept, according to which timbre is an inseparable quality of intonation and, correspondingly, is connected with its other constituent parts. [3, p. 225] For this reason, Boris Asafiev cautioned against "abstract-timbral" hearing, contrasting the former with "intonational-timbral" hearing. [Ibid., p. 2] Dina Kirnarskaya develops Asafiev's interpretation and brings in the concept of "intonational hearing" as the capability of perceiving sound in the untegrity of all of its features (pitch, timbre, amplitude, and articulation), at the same time, timbral hearing turns out to be a part of intonational hearing. [4, p. 65]

One cannot avoid considering Evgeny Nazaykinsky's conclusion about the hierarchical quality of timbre, the possibility of regarding it as 1) the timbre of sound; 2) instrumental timbre; 3) the overall character of the sound. [5, p. 92] The overall character of the sound is perceived

as the result of the complex interaction between the acoustic peculiarities of the respective instrument, the timbre-generating factors of the musical language (harmony, texture, register, dynamics, etc.) and the extra-musical factors (the spatial, acoustical conditions of the performance, the psycho-emotional condition of the player).

Consequently, the development of timbral hearing must be inseparable from the perfection of intonational hearing, with attention given to the character of sound created by the instrumental timbre in combination with the other means of expressivity. Thereby, timbral hearing may be defined as the capability of perceiving the color of sound, the timbres of the musical instruments and the human voice, the overall character of the sound created by various timbre-generating factors. [6, p. 36] *The development of timbral hearing leads to the inclusion of the entire complex of expressive means, integrality, and systemic quality of perception, the appellation to the intonational form of music into the process of hearing* (see: [7]).[1]

The perception of the interaction between timbre and other elements determines the corresponding varieties of timbral hearing: timbral-instrumental (the feeling of orchestral color), timbral-harmonic, timbral-registral, and timbral-textural.

It is necessary to discern the phonism of the elements of the musical language with the concrete timbral solution in the texture or harmony, their "orchestration." The phonism of texture reflects the peculiarities of the sound of its varieties — the chordal, the polyphonic and the monodic. Hearing the texture in the timbres already presents a feature of the timbral-phonic side of timbral hearing. This position is confirmed by the fact that one and the same type of texture may possess various timbral solutions. Analogous to this is the correlation of "phonic hearing, aimed at modal and harmonic colors" (Nazaykinsky's definition), [5, p. 202] with timbral-harmonic hearing. On each of the levels of instruction and in correspondence with the type of professional activity, a particular side of timbral hearing comes out to the forefront.

The Forms of Development of the Timbral-Hearing Complex at the Various Levels of Musical Education

Undoubtedly, it is necessary to set to work on the development of timbral hearing from the beginning classes of children's music schools. The main task at the elementary stage of instruction is the formation of the need to listen closely to the sounds of the surrounding world, to stimulate the "phonic sensitivity of hearing" (Nazaykinsky's terminology). The objects of study must be found in the basic roles of the main instruments of the symphony orchestra, the auditory mastery of their "sound images" with the attention toward the expressivity of the instrumental timbre, as well as to the applied articulation and registral colors. The typical timbral intonations of the bourdon, the "golden progression"

[1] Vyacheslav Medushevsky relays to the intonational form of music the combined use of all the traits of the musical material (pitch, rhythm, timbre, register, dynamics, articulation), and to the analytical side of music — the pitch and rhythmical aspects of sound. [7, p. 57] He fairly considers the main flaw of the formation of the capability of perception to be "the separation of the analytical side of hearing from the intonational side, the mechanical memorization of intervals, chords and harmonic schemes, devoid of the connections with the intonational form…" [Ibid., p. 193]

of the horns, or the fanfares may be mastered with the illustration of their original sound. On this level of instruction, pupils should discern solo playing from a unison played by several instruments, differentiate with their ears the part of a percussion instrument in an orchestral combined sound. The greatest amount of attention is given to the development of the auditory skills of discerning the timbres of the instruments of the symphony orchestra, as well as to the development of the timbral-registral and timbral-rhythmical sides of timbral hearing.

Upon the memorization of a melody to be performed on "one's own" particular instrument, the difficulties should diminish. For this reason, at the elementary level of the first three grades in school, "vocal" dictations, chiefly in oral form, are recommended. This can be explained by the fact that it is easier for children to repeat a melody sung vocally, rather than one played by an instrument.

The recommended forms of work at the elementary level of instruction are: oral timbral dictations, timbral dictations partially notated, as well as auditory tests. They are presented in detail in Tatiana Litvinova's tutorial manual *Gotovimsya k tembrovomu diktantu* [Getting Ready for Timbre Dictation]. [8] The selfsame manual includes notated and audio materials for oral dictations and those partially written down. The manual is addressed to the development of timbral hearing in children's music schools.

Auditory tests provide an effective form of work making it possible to listen to several examples on a particular theme at a brief period of time, since no notation is assumed. The content of the tests may be comprised of registers, time signatures, the amount of notes in the upbeat, the motion along chords in melodies, the various types of dotted rhythms and trills, strokes and means of sound-generation, as well as types of texture.

Before starting out writing a timbral dictation in its complete form, it is important to master separate elements of the language of music in various timbral manifestations. On the level of the music school, this is possible through the inclusion of the timbral component into the work on scale degrees, melodic and harmonic intervals, types of modes, melodic and rhythmical figures, etc.

Oral dictations or auditory tests may be directed at the definition of intervals, registers, octaves as sounded out by intervals, simple and complex time signatures, various kinds of rhythm, types of texture, etc. Their importance is manifested by the fact that these elements of musical lexis sound in diverse timbres, particularly in real timbres, not in artificially averaged ones.

For the definition of melodic intervals, examples are selected from musical compositions in orchestral sounds, in which the initial, expositional or developing material must be developed by ear.

It is recommended to examine the harmonic intervals in accompaniments (for example, the bourdon perfect fifth) or between the parts of solo instruments. Most often, they involve octave doublings, motions in parallel thirds and sixths. It is absolutely necessary to pay attention to the expressive significance of doubling in one or two octaves (such as the main theme of the primary theme group of Pyotr Tchaikovsky's *First Symphony*).

The mastery of the peculiarities of meter and rhythm in the timbres of separate instruments also presents a separate task.

It is quite appropriate, already at the level of the music school, to present an auditory perception of orchestral texture. When listening to the musical examples, it is necessary to determine the type of orchestral texture according to the number of components (two, three or four), as well as the instruments realizing them. Thus, a two-component type

of texture may be represented by a melody and a chordal accompaniment (such as the theme of Scheherazade from Rimsky-Korsakov's suite with the same title), melody and rhythm (as in the *Ballerina's Dance* from Stravinsky's ballet *Petroushka*), melody and a pedal point (as in Kalender's theme from Rimsky-Korsakov's *Scheherazade*), or melody and figuration (such as the main theme of the primary theme group in the first movement of Tchaikovsky's *First Symphony "Winter Reveries"*).

The "dictations with partial notation" include diverse assignments connected with the development of timbral-rhythmical hearing:

a) to finish writing the notes to a given rhythm;

b) to finish writing the rhythm to a given set of notes;

c) to notate the rhythm of the accompaniment part;

d) to notate the rhythm of a given melody.

At the intermediary level of instruction (colleges), timbre is examined in interaction with other elements of the musical language: texture, harmony and register. The circle of instruments is expanded (the generic varieties are included), the suggestion is made for the identification of particular instrumental timbres in various registers, with diverse articulation, notation of melodies in high and low registers with the transition of one into the other, as well as harmonic analysis of the timbral-textural components of the musical fabric. Alternation of timbres horizontally, as well as their combinations in the vertical aspect are examined.

At the basis of the classification of the material there lies the principle not of the difficulties related to modes, pitch or harmony, but of those dealing with timbre and intonation. The suggested scope reflects the succession of the study of instrumental timbres, as well as their interaction with the other components of the language of music: texture, rhythm and harmony. Each systematic course on the development of timbral hearing must contain its own scale of difficulties at its basis, corresponding to its specificity (this is reflected in Litvinova's tutorial manual[2]: [9]). They are:

1. Solo instrumental timbres in the exposition of a melody.
2. Alternation of timbres horizontally.
3. Combinations of timbres in the exposition of a melody.
4. The registral position of instrumental timbres.
5. Timbral two-voiced and many-voiced polyphony.
6. Timbres of solo instruments in various components of the texture.
7. Chordal and polyphonic texture in orchestral sounding.
8. The combination of difficulties of timbre with those related to meter and rhythm.

At the intermediary level of musical education, the most accentuation must be made on the development of timbral-harmonic hearing. For this, it is necessary to determine by means of hearing separate chords, harmonic turns, harmonic progressions, and the harmonic scheme of an artistic fragment in an ensemble or orchestral sound, to hear the lower voice — the basis of timbral two- and many-voiced polyphony, to trace out the lines of the voices.

[2] Therein, the content of the sections, which may be through for the programs of the various levels of instruction is disclosed.

Timbral Hearing in the Context of the Various Types of Musical Activity

The principle of profilization established in the solfeggio course in music colleges and in higher educational institutions must be considered upon the development of timbral hearing, as well. Timbral hearing has its own characteristic distinctions among musicians of various major trends, which must be taken into account when choosing the forms of work and the utilized musical material.

The priority goals here turn out to be:

– *for pianists*: an auditory distinguishing of instrumental timbres;

– *for orchestral instrumentalists*: the development of the timbral-textural, timbral-rhythmical and timbral-harmonic aspects of hearing;

– *for choral conductors*: a perception of timbres in choral polyphony, their roles in voice leading, hearing of vertical harmony;

– *for vocalists*: the distinction between instrumental timbres by ear, the practice of singing with solo instruments.

Pianists, who are mostly endowed with a rather developed harmonic and textural hearing, usually possess a very narrow range of perception of orchestral instruments. For orchestral musicians especially significant professionally is timbral-textural hearing, i.e., the ability to differentiate the parts of separate instruments, textural components and timbral means that emphasize them. In this regard, the direction of "instrumental (orchestral) solfeggio," developed by Marina Porokhovnichenko, [10] is interesting. In correspondence with the principle of specialization, in this course the involvement of "live" instruments is encouraged. Thereby, "all the forms of intonational-auditory work acquire timbral coloring." [Ibid., pp. 5–6] A proximate approach is recommended in the authorial methodology of Professor Nina Khlebnikova from the Saratov Conservatory, described by Natalia Ivanova. [11] The important issue of the national specific features of the development of timbral hearing among orchestral musicians is touched upon in the work of our Chinese colleague, Hou I. [12]

The prioritized aspects of timbral hearing for choral and orchestral conductors are the timbral-textural and timbral-harmonic types of hearing, as well as a feeling for voice-leading. Recommended forms of work in this direction are — auditory timbral analysis and the notation of artistic examples in choral sounding with various types of texture in the conditions of three and four-voice polyphony.

For the development of harmonic and textural hearing and a feeling of voice-leading, it is beneficial to make use of examples notated in performance on the *organ*. Their specimens are contained in Tatiana Litvinova's and Irina Rozanova's tutorial manual *Solfedzhio na materiale organnoi muzyki* [Solfeggio on the Material of Organ Music]. [13] A lengthy time duration of sound creates the possibility of a continuous and attentive listening to the phonism of chords and sonorities and helps he listeners discern concisely the sustained sounds. The diversity of timbre in the voice parts makes it possible to trace the lines of each of the voices.

The perfection of intonational hearing presumes a constant appellation to sound. At the focus of study, not only the musical score, but the "musical text," i.e., sounding music must be present. In the musical score the acoustical information about the duration, rhythm and dynamics is encrypted, but not information about its timbre. Mark Aranovsky wrote about the necessity of distinction between these two types of texts. [14] Music is the art of sound. It is present not in the note signs on paper, but in the human auditory experience. The sounding text is inseparably connected with the attention to the timbral component.

It is indicative that in tutorial manuals of the present-day level, one can clearly trace the tendency towards the study of particularly this type of text, which is in many ways provided by the presence of the sound applications to them. The opportunity of hearing fragments of music on their genuine sound provides for a complete perception of the character of the music, defined by the timbral peculiarity of the instruments in use, the textural-registral and articulation-dynamic traits.

Thereby, the main general methodological principles that must be considered in the system of development of timbral hearing are:

– attention to timbre as an inseparable component of intonation, "intonational form";

– the necessity of study of both instrumental timbre and its interaction with other musical means, a synthesis of various aspects of timbral hearing;

– providing timbral diversity;

– attention to the specificity of timbral hearing among musicians of different directions.

At the contemporary stage, the logic of the historical evolution of solfeggio is perceived as the motion from vocal exercises devoted to the development of the voice, intoning of the elements of musical speech, to (scales, intervals, chords), to the development of intonational hearing, the perception of sound in the integrity of all of its features.

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