

but also informing the multiple changes of perspective in the film's lengthy voice-overs. The music is further framed by the sharp contrast of several non-period or un-authentic musical works including Bach's *St Matthew Passion*. In *Casino*, Scorsese uses popular music, and its ›other‹, to not only document and narrate but to create a uniquely fluid and expanded sense of cinematic space.

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New Music and Ear Training

Groping for Way In – Widening Way Out

So called New Music, namely, music of the 20th century is now wide-spread in the concert practice all over the world. However, it is known how difficult it is, so far, to learn modern music in ear training courses at universities because of the necessity to deal with modal scales, free tonal melodic patterns, chords, lacking thirds, etc. There are two main causes explaining this situation. The first of them is quantitative: usually, not enough time is scheduled for studying modern music extensively. The second cause may be called qualitative – it consists of emotional difficulty of the aural perception of 20th-century music which remains one of the most significant aesthetic obstacles even at the beginning of the 21st century. It is a fact that only few elements of contemporary music, with its dissonances and vague tonal basis, have been practiced in the ear-training part of a student's academic curricula. Thus it would be a one-sided decision to explain such a situation only through the rigid structure of the educational system. It is known that music may be considered as a psychological projection of a human state of mind. Therefore, in order to address the problem of the listener's aversion, it is necessary to apply not only musicological, but also psychological methodology.

The aim of this paper is to deliver an integrated, practically-oriented interdisciplinary approach to 20th-century music perception. A principal element of the author's methodology is the interdisciplinary investigation in the fields of cognitive psychology and ear training. Such an approach is based on the contemporary achievements in music theory and pedagogy, music cognition and practical psychology.¹ In Russia there is deep and multi-faceted experience in the discipline of ear training, concerning not only classical but also contemporary music. According to Russian curricula, students learn *solfeggio* for about 15 years – from the very early childhood up to the graduation level. Therefore, there is a

¹ Such an approach has been delivered in my book on music psychotechnique. See Marina Karaseva, *Sovremennoe solfedz'bio* (Course of Modern Solfege), 3 vols., Moscow 1996.

highly hierarchical system of musician skills development in Russian methodology. It provides both a rich practical material and a well adjusted methodological base for the study of practical music cognition.

On this base, the main aim of my methodology of contemporary ear training within the *Course of Modern Solfege*² was to try to combine the main achievements of the Russian academic school in the field of ear training with the newest foreign achievements in the field of modern psychotechnologies, especially neuro-linguistic programming (NLP)³.

This paper aims to consider some of the most influential music patterns of the contemporary musical language. It tries to present how we can use the synesthetical components in music listening in order to be able not only to hear music sounds but also to associate them with something seen, smelled, touched in one's individual imagination. A special table of audible, visual and kinesthetical submodalities will be presented. The theory of the sensory submodalities extraction which is used in neuro-linguistic programming – as a part modern practical psychology – has been chosen as a scientific base of our experiments.

Let us begin with the term of synesthesia. Synesthesia is interpreted as »the condition in which a sensory experience normally associated with one modality occurs when another modality is stimulated«⁴. This phenomenon has been an object of numerous investigations in the field of visual arts. In the field of music the main accent has traditionally been made on colored hearing as the experiencing of color with auditory stimuli. The starting point of our methodology is the conviction, that the synesthesia is not something unusual; this may become evident through the series of special ear training exercises. The directed experiments on synesthetical hearing have been conducted by the author since the 1990s. Participants have included students of different departments at Moscow State Conservatory (musicologists, choral conductors, etc.) including foreign students of Moscow Conservatory.⁵

Now we present some distinctive samples of the main components of musical language. The samples which are typical to the 20th-century music will be compared with classical ones. The examined components are the following: chords, tonal functions, melodic lines, rhythmic patterns.

I. Chords

Numerous experiments have shown that certain types of chords are invariably perceived in a certain color (or in a sector of the color spectrum), geometrical figures, clearness, volume, contrast, density, temperature, taste, smell and so on. In such a way we can stimulate students to discover new interesting sensory properties of these non-romantic chords in order to become familiar with them. A special study table of auditory, visual and kinesthetic sensory submodalities has been created to make a process of the sound effect extraction easier.

2 See *ibid.*

3 One of the first musicians who applied the NLP-methodology was Joseph O'Connor. See for example Joseph O'Connor and John Seymour, *Introducing Neuro-Linguistic Programming*, London 1995.

4 Arthur Reber, *The Penguin Dictionary of Psychology*, London and New York 1995, p. 779.

5 The same experiments have been also made with non-musicians of different ages and social level.

Table 1: Submodalities of Sensory Perception

VISUAL how we see	AUDITORY how we hear	KINESTHETIC how we move and feel
Color (kind or spectrum, warm/cold shade)	Pitch (high, middle, low)	Movement and its direction (ascending, descending, horizontal)
Brightness (bright, pale, fade, dark)	Timbre	Weight (light, heavy)
Shape (round, angular)	Tempo (fast, slow)	Texture (smooth, rough, sticky, elastic, foamy)
Distance (near, far)	Mono/Stereo	Temperature (hot, mild, chilly)
Contrast degree (high/low contrast)	Duration (prolonged, discrete)	Muscle feelings (strained, relaxed, torpid)
Size of mental >picture< (large, small)	Dynamics (loud, soft/quiet)	Pain feelings (acute, aching, dull)
Clearness degree (clear, slurred)	Resonance (sonorous, dull)	Smell (fragrant, perfumed, floral, fresh, pungent, strong, acrid, smoky, chemical, poison)
Movement in your >film< (static or not)	Distance from the sound source (near, remote)	Pressure (knocked down, floating, fluttering)
Framing (with frame or panoramic)	Articulation (conjunctive, disjunctive)	Taste (sweet, bitter, sour, salty, insipid, spicy, hot)

For the comparison, imagine two different chords: one from the classical style, such as *d-f-a-c* and another from modern music so called Webern-style chords, such as *g-e flat-f sharp* or *e-g-e flat*. In the process of experiments within ear training classes with students evoking associations, we got the possibility to select and classify their expressive properties. It is important to say that all the student's associations were nearly the same in their emotional spectrum, slightly differing in concrete details.

For instance, the Webern-chord was permanently associated with cold shimmering colors, crystal in texture, chemical smell and pain feelings. As we know, all of these components may influence the decrease of blood pressure and pulse. On the contrary, chords with pentatonic base (for example *d-f-a-c* or *f-b flat-d-g-c*) were usually linked in perception with somewhat natural, warm, sweet/fresh, relaxing, etc. In the opposite, chords in Spanish style (like *d-a-f sharp-c-e flat-f*) were perceived in red spectrum as aggressive, spicy and hot ones. These types of imagination may conduct the increase of blood pressure and pulse.

All these tests show the frequency of the perception of the general metaphor – pleasant (in case of a classic chord) and unpleasant (in case of a Webern-chord) in the human mind. Therefore, music teachers must first remove or weaken the core of the negative part of personal student's associations and then transfer them to a desired cognitive channel – in other words, make students become interested in this sound.

II. Functions

The synesthetical approach to music understanding may also be applied to experiments on tonal function recognition. The perception of functional connections in music is directly connected with human feeling of gravitation as well as their temporal and spatial orientation. We all need to have a sense of stability while interacting with these two coordinates. The lack of this feeling will cause our psychological frustration.

In this connection, it is quite clear that a highly hierarchical tonal tension (S-D-T) in the classic tonal system promotes the psychological effect of the time and space management, whereas the weakness and uncoordinated tonal relations in contemporary music may produce feelings of chaos and confusion, and then some trance effect. There is only one way to avoid such feelings – to study new tonality's functions methodically and all types of their concatenation of the tonal center.

III. Melody

The same is true for the melodic design in modern music. Its most typical feature one may mark as spasmodic leaps associated in the human mind with the effect of visual glimpses. From the scientific field of video-ecology, devoted to visual problems of cognition, we know that our eyes soon become fatigued if we look at periodical glimpses of lines and images. Just as our ear – because while we are listening to the zigzag melody our vocal chords make a lot of synkinetic movements and without having a possibility to gather tones in the whole form, soon become tired. It speaks for necessity of studying the main melodic models (as interval combinations) in new, tonally free music.

IV. Rhythm

In the realm of rhythm the listener's emotional reaction also corresponds to his physiological reactions. It is well known that certain time durations are associated with some types of biological rhythms. For instance, crotchet duration is associated with pacing (MM = 120), quavers are associated with running, and half duration is associated with breathing. In the case of irregular rhythmic patterns in modern music, inconsistency of perceptible music with one's cardiac and kinetic, muscular rhythms may occur in the human mind. All these means of modern music are able to make a considerable discomfort of the human state.

To get the ability for rhythmic control in ear training methodology a complex of exercises must be applied in order to make it easier to count the smallest rhythmic beats within one bar.

Returning to the academic problems, we ask particularly this question: why is modern music so insufficiently promoted in academic courses of ear training? Where are special courses of modern ear training? The most of music educational institutions in Europe and America, including the higher level of education, have focused on classical 18th and 19th-century solfège. Well, it is much easier, of course, to deal with well known old classic material. Nobody is afraid to hear it. However, we must also remember a simple psychological

rule: if someone has a fear of something, the best way to remove it is to begin sensory investigation of this object. The same happens with the 20th-century music chords, melodic and rhythmic-patterns assimilation through the special course of ear training exercises.

Such a proposed method has been scientifically proved in the author's tree volume *Course of Modern Solfege* as well as in her monograph (as a Post-Doctorate dissertation) *Solfeggio – Psychotechnique of Ear Training*⁶. The *Course of Modern Solfege* is devoted to students of middle and high level of music education. This course contains a classification of all the basic, frequently used models of contemporary music language as well as methodological and practical ways of overcoming them. In the first volume there are instructive exercises, the second contains extracts from 20th-century music compositions and the third one is devoted especially to harmonic solfeggio. This course has been practically approved (and is nowadays always in process of further improvement) in the author's pedagogical two-decade experience in the Moscow Conservatory and also in various workshops at other music colleges in Russia and abroad. The proposed psychologically-oriented ear training methodology, being rather easy to apply, may contribute to a creative increase not only cultivating specific skills for intoning and playing new music but also producing a real aesthetic pleasure from such a training.

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Becoming Musical: Creative Emergence, Cultural Identity and Learning

Introduction

In recent years music education philosophers have debated the virtues of the praxial approach to music learning. Theorists such as David James Elliott (1995), Thomas Regelski (1998) and others¹ have shifted away from what has been known as ›aesthetic education‹, preferring to situate music learning as ›action‹, or more specifically ›right action‹. In this paradigm of thought, learning is considered as process, as a series of unfolding moments where teachers and learners critically consider the ethical dimensions of experiences as they are disclosed. The situated nature of learning as praxis is also consciously affirmed, that

6 Marina Karaseva, *Solfeggio: Psychotechnique of Ear Training*, Moscow 1999.

1 See for example Thomas Regelski, »The Aristotelian Basis of Praxis for Music and Music Education as Praxis«, in: *Philosophy of Music Education Review* 6/1 (1998), p. 22–59; and David J. Elliott, *Music Matters*, New York 1995.