

UDC 78.01+781.8:7.011

DOI <https://doi.org/10.31723/2524-0447-2019-29-2-13>**Viktor Yuriiovych Mishyn**

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“THE PHYSICS” OF MUSIC PERCEPTION IN ANTIQUE PHILOSOPHY AND CARTESIAN MECHANISM

*The purpose of the article is to compare two models of music perception (or rather how such perception was seen in relevant epochs) regarding to main doctrines of the aesthetics of music at the time: ancient Greek doctrine of ethos in music and baroque doctrine of the affections. The doctrine of ethos in music spreads and reaches its apogee in the works of Greek philosophers, so this article is an attempt to build a “physical” model of music perception as it was considered by these philosophers. The analogous model can be obtained from the Descartes’ Passions of the Soul. **Methodology.** Content analysis applied for different philosophical sources in order to create the “physical” models of music perception through the synthesis of this data. Despite the fact that concepts “ethos” and “affect” are pretty close to each other by their nature, there is a quite big difference between these concepts. The Greeks believed that different types of music not only result some affect, but the music itself possesses particular type of ethos and can actually affect the ethos of a person (the purpose of the article is to build the “physical” model of such an influence as it was considered by the Greek philosophers). **Scientific novelty.** The designing of such models, as well as comparing them, has not been undertaken ever before. Mechanistic materialism is only a half part of Cartesian philosophy: as is known, Cartesian world consists of two kinds of substances – res extensa and res cogitans. **Conclusions.** Mechanistic materialism is only a half part of Cartesian philosophy: as is known, Cartesian world consists of two kinds of substances – res extensa and res cogitans. Res extensa (as was just mentioned) represents the physical world, and res cogitans – the mind or soul. In “The Passions of the Soul” Descartes examines an interaction between these two substances from the mechanistic positions and this enables us to look at such interaction with regard to music perception. The doctrine of ethos profoundly influenced the creation of new doctrine of musical aesthetics – baroque doctrine of the affections (so-called theory of the affects). The article highlights the similarity between these two aesthetical doctrines comparing their “physical” models of music perception.*

Key words: musical ethos, doctrine of musical ethos, doctrine of the affections, theory of the affects, music perception.

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«Фізика» музичного сприйняття в античній філософії та картезіанському механіцизмі

Метою статті є порівняння двох моделей музичного сприйняття (або швидше яким його бачили у відповідні епохи) відносно до основних доктрин музичної естетики того часу: давньогрецького вчення про музичний етос і теорії афектів епохи Бароко. Вчення про музичний етос розповсюджується та досягає свого апогею в працях давньогрецьких філософів, тому стаття є спробою побудувати «фізичну» модель музичного сприйняття, виходячи з міркувань античних філософів із цього приводу. Подібна модель може бути отримана з декартівських «Пристрастей душі». **Методологія дослідження** полягає в контент-аналізі, застосованім до ряду філософських джерел із метою створення «фізичних» моделей музичного сприйняття музики за допомогою синтезу цих даних. Незважаючи на те, що поняття «етос» та «афект» за своєю природою досить близькі один до одного, між цими поняттями існує досить велика різниця. Греки вважали, що різні типи музики не тільки викликають певний афект, але й сама музика має певним типом етос і може фактично впливати на етос людини (мета статті – побудувати «фізичну» модель такого впливу, як це вважалося грецькими філософами). **Наукова новизна.** Побудови подібних моделей, як і їх порівняння, раніше не здійснювались. Механістичний матеріалізм – це тільки половина картезіанської філософії: як відомо, картезіанський світ складається з двох видів речовин – *res extensa* й *res cogitans*. *Res extensa* (як тільки що згадувалося) є фізичним світом, а *res cogitans* – розумом або душею. **Висновки.** Механістичний матеріалізм – це лише половина частини декартової філософії: як відомо, декартовий світ складається з двох видів речовин – *res extensa* й *res cogitans*. *Res extensa* (як щойно згадувалося) є фізичним світом, а *res cogitans* – розумом або душею. У «Пристрастях душі» Декарт досліджує взаємодію між цими двома речовинами з механістичних позицій, і це дозволяє нам розглянути таку взаємодію щодо сприйняття музики. Вчення про етос глибоко вплинуло на створення нового вчення музичної естетики – теорії афектів. Стаття викладає подібність між цими двома естетичними доктринами шляхом порівняння їх моделей музичного сприйняття.

Ключові слова: музичний етос, етос в музиці, вчення про музичний етос, теорія афектів, музичне сприйняття.

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Цель статьи – сравнение двух моделей музыкального восприяття (или скорее каким его видели в соответствующие эпохи) относительно основных учений музыкальной эстетики того времени: древнегреческого учения о музыкальном этосе и теории аффектов эпохи Барокко. Учение о му-

зыкальном этосе распространяется и достигает своего апогея в трудах древнегреческих философов, поэтому статья является попыткой построить «физическую» модель музыкального восприятия, исходя из соображений античных философов по этому поводу. Похожая модель может быть получена из декартовских «Страстей души». **Методология** исследования заключается в контент-анализе, примененном к различным философским источникам с целью создать «физические» модели восприятия музыки посредством синтеза этих данных. Несмотря на то, что понятия «этнос» и «аффект» по своей природе довольно близки друг к другу, между этими понятиями существует довольно большое различие. Греки полагали, что различные типы музыки не только вызывают определенный аффект, но и сама музыка обладает определенным типом этноса и может фактически влиять на этнос человека (цель статьи – построить «физическую» модель такого влияния, как это считалось греческими философами). **Научная новизна.** Построения подобных моделей, как и их сравнение, ранее не осуществлялись. Механистический материализм – это только половина картезианской философии: как известно, картезианский мир состоит из двух видов веществ – *res extensa* и *res cogitans*. *Res extensa* (как только что упоминалось) представляет физический мир, а *res cogitans* – разум или душу. **Выводы.** Учение об этносе глубоко повлияло на создание нового учения музыкальной эстетики – теории аффектов. Статья освещает сходство между этими двумя эстетическими доктринами путем сравнения их моделей музыкального восприятия.

Ключевые слова: музыкальный этнос, этнос в музыке, учение о музыкальном этносе, теория аффектов, музыкальное восприятие.

Relevance of the study. In the context of the musical-aesthetical paradigm shift at the late XVI – early XVII centuries rises a number of questions about the perception of music within the doctrine of affections. One of the most relevant problems regarding to the creating the genre of opera (which caused such paradigm shift) would be the problem of the succession of new music to the antique musical-aesthetical principles.

Hence, **the purpose of this paper** is to highlight the similarity between the “physical” models of music perception in ancient Greek doctrine of ethos in music and baroque doctrine of the affections.

Scientific novelty. The designing of such models, as well as comparing them, has not been undertaken ever before. Mechanistic materialism is only a half part of Cartesian philosophy: as is known, Cartesian world consists of two kinds of substances – *res extensa* and *res cogitans*.

The body of the paper. It is not a mere coincidence that Antiquity and Baroque were chosen here: opera was born like a supposed

rebirth of antique drama, and this fact has resulted the similarity between ancient Greek doctrine of ethos in music and baroque affect theory (except for educational component of the first one). Both doctrines states that music somehow affects mental sphere of human being and results a certain ethos or affect.

Despite the fact that concepts “ethos” and “affect” are pretty close to each other by their nature, there is a quite big difference between these concepts. The concept of ethos is more loaded: it means not just emotional reaction, but also behavior, and even moral. In other words, nature of ethos is more permanent. So, the Greeks believed that different types of music not only result some affect, but the music itself possesses particular type of ethos and can actually affect the ethos of a person (the purpose of the article is to build the “physical” model of such an influence as it was considered by the Greek philosophers).

First, let us consider the doctrine of ethos in music. This doctrine has spread because of the activity of Plato and Aristotle, who used it in their works about the perfect polity (resp. “Respublica” et “Politica”). In addition, there is some evidence that this doctrine was partially integrated into state educational system of Athens. In the dialogue “Crito” Plato mentions that according to the Athenian law music and gymnastics were the compulsory disciplines for child’s education (Plat. Crito, 50d-e). Such ideas must be rooted in the Pythagorean tradition, but they have been widely disseminated precisely in Classical Athens in order to translate into reality extremely popular at the time concept of *kalokagathia*, i.e. highest ideal of human being that consider a man as a potential mythical demigod, excellent in every sense.

So, how music could influence ethical sphere according to ancient Greek philosophy? Pseudo-Aristotelian treatise “Problemata” (Προβλήματα), completed by some peripatetic scholar supposedly before the sixth century A.D. [1, p. viii], raises a number of issues related to music in the XIX book. We are interested in following questions: “Why is it that of all things which are perceived by the senses that which is heard alone possesses moral character? For music, even if it is unaccompanied by words, yet has character; whereas a colour and an odour and a savour have not” (Problema 27) and “Why do rhythms and tunes, which after all are only voice, resemble moral characters, whereas savours do not, nor yet colours and odours?” (Problema 29) (Arist. Probl. XIX 27, 29). The answer is: “<...> because that which is heard alone has movement <...>

This movement resembles moral character both in the rhythms and in the melodic disposition of the high and low notes <...> these movements are connected with action, and actions are indicative of moral character” (Probl., 919b30–920a5) [1].

It is clear from the text that sound possesses movement and this movement is able to influence ethos and, therefore, human actions, but still unclear the mechanism of such an influence. To understand this, we must know what the concept “soul” means in antique philosophy. Aristotelis “De Anima” (Περὶ ψυχῆς) gives us a bunch of the most widespread at the time perspectives on the nature of soul. Aristotle concludes that all the philosophers define the soul by three things: motion, perception and incorporeality (Arist. De anima, 405b10) [2, p. 8]. It means that the soul is able to set our body in motion, to perceive, and that it is not a body (let’s compare this to *res extensa et res cogitans* of Descartes). For all the folks and primitive societies, the soul means life – these two concepts are inextricably linked. And life means breath, heartbeat, moving body – i.e. some sort of movement. “The act of breathing, so characteristic of the higher animals during life, and coinciding so closely with life in its departure, has been repeatedly and naturally identified with the life or soul itself” (Tylor, 1920). According to Tylor, in some languages words “breath” and “soul” can even be the same (for example, “anima” or “spiritus” in Latin or “*duch*” in Slavic languages) [9, p. 432–433]. So, it is clear: if the body doesn’t move – the soul is gone and, therefore, the claim that soul causes movement is undeniable not only for ancient Greek world-view, but also for other cultures.

In addition, the soul was often treated like self-moving entity (De anima, 403b30). The last seems contentious for Aristotle, but Plato was so sure about it that tried to prove immortality of the soul proceeding from its self-movementness: whereas something moves itself, it can never desist from motion (Plat. Phaedr 245c) [6, p. 524]. “What is the soul according to Plato? It is only the concept of movement, or rather self-movement. When such a soul incarnates, the body becomes a regularity of one or another corporal movement” (Losev, 2000) [5, p. 344]. Using this generalization, we can imagine the soul as a bearer of certain ethos in accordance with the type of its motion.

Let’s make some interim conclusions:

1) Music can affect the soul due to the fact that it possesses some movement;

2) The soul is a concept of movement – self-moving entity, capable of setting the body in certain type of motion (depending on the type of soul’s movement).

So, movements of music affect movements of soul and they in turn cause certain type of movement in body. But we need to complete the picture. Plato through Pythagorean Timaeus tells us how a sound of music can affect the soul: “<...> sound is the percussion of air by way of the ears upon the brain and the blood and transmitted to the soul, and that hearing is the motion caused by the percussion <...>” (Plat. Tim., 67b) [6, p. 1268].

In summary, from all the evidences obtained from antique sources we can formulate the next “physical” model of music perception, how it was seen in Antiquity:

The movement of sound through blood in the brain affects the movement of soul, and the movement of soul, in turn, causes the movement of body.

So, we obtained a closed loop in which the musical ethos affects the ethos of soul, and vice versa: “And it was a good saying of Damon the Athenian, that songs and dances must inevitably exist where the mind was excited in any manner; and liberal, and gentlemanly, and honourable feelings of the mind produce corresponding kinds of music, and the opposite feelings likewise produce the opposite kinds of music” (Athenaeus XIV, 25; 628c) [3, p. 1002].

Many centuries after, in the Later Renaissance Italy completely new genre of secular music is emerging. Opera was born like a supposed rebirth of antique drama, where vocal music represents human feelings, emotions, i.e. affects. Here we must clarify the importance of the term “representation”. According to Aristotelian aesthetical tradition, which was the dominant in Renaissance, all the arts should represent something in the physical world as a model of beauty, truth and good (such a representation calls mimesis μίμησις – imitation, representation, mimicry). The question is: “What does music represent?” The rise of opera gave a reason to claim that music represents human affects.

Thanks to the work of Descartes “The Passions of the Soul” we can get one more “physical” model of music perception from the point of view of one of the greatest philosophers and scientists ever. Descartes sees human affects from the perspective of mechanistic materialism (mechanical philosophy, mechanical determinism). It was one of the main approaches to understanding the physical world in 17th and even 18th centuries. Such worldview model flows

from rationalism – the way to justify knowledge with ratio, i.e. intellectually and deductively, asking for a reason of every single event in order to discover how the universe works. Therefore, Descartes and other mechanists (Gassendi, Mersenne, Hobbes et al.) saw the physical world (extended thing, *res extensa*) like a huge mechanism (that is why we call it mechanical philosophy, mechanistic materialism or mechanical determinism).

The general model of different types of perception is depicted in the 13th article of this treatise: “<...> sounds, odours, heat, pain, hunger, thirst, and generally all objects, as well of our other exterior senses, as our interior appetites, do also excite some motion in our nerves, which passes by means of them unto the brain; and besides, that these severall motions of the brain create in our soul different resentments <...>” (*Passions*, art. 13) [4, p. 12–13]. Descartes identifies as mediator between body and soul some subtle substance called “animal spirits”. According to Descartes these spirits are responsible for the physical stimulation which causes the body to move and at the same time for any kind of perception: “<...> it is knowne that all these motions of the muscles, as also all the senses depend on the sinews, which are as little strings, or like small tonnells coming all from the braine, and containing as that does a certain aire, or exceeding subtle wind, which is tearmed the Animall spirits” (*Passions*, art. 7) [4, p. 7].

Therefore, in this model *the movement of sound through animal spirits in nerves affects the movement of soul, and the movement of soul, in turn, causes the movement of body the same way through animal spirits in nerves.*

As we can see, the Descartes’ model is not very different from antique one: Descartes only specified the pathway in which the sound can reach the soul. However, even this way was known in the antique world: according to Galen, two different types of nerves governed the two principal functions of the nervous system – sensation and motion (Rousseau, 2004) [7, p. 11].

Furthermore, Descartes identifies the locus of interaction between animal spirits and soul – exact place where soul and body interact. This is pineal gland or so-called third eye. According to Descartes, it’s “a little kernel in the brain <...> whose least motions in it cause the course of the spirits”, and inversely, course of the spirits causes the motion of pineal gland (*Passions*, art. 31) [4, p. 25–26]. And even this Descartes’ “innovation” in perception was well known in Antiquity: in the 8th book of Galen’s “On

the usefulness of the parts of the body” he refutes the widespread belief that the pineal gland regulated the flow of psychic pneuma in the brain.

Conclusions. Mechanistic materialism is only a half part of Cartesian philosophy: as is known, Cartesian world consists of two kinds of substances – res extensa and res cogitans. Res extensa (as was just mentioned) represents the physical world, and res cogitans – the mind or soul. In “The Passions of the Soul” Descartes examines an interaction between these two substances from the mechanistic positions and this enables us to look at such interaction with regard to music perception. Thus, Descartes’ “The Passions of the Soul” provides practically the same “physical” model of music perception as it was hundreds of years ago in antique world. This is the result of the similarity between ancient Greek doctrine of ethos in music and baroque affect theory, more specifically – of the same gnoseological precondition: the position that music through mimesis represents human feelings and emotions in order to affect feelings and emotions of spectators during theater performance or simple listening to music.

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УДК 78.072.2

DOI <https://doi.org/10.31723/2524-0447-2019-29-2-14>

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ФЕНОМЕН «МАЙСТЕР-КЛАС» У МУЗИЧНОМУ МИСТЕЦТВІ: ПРОЛЕГОМЕНИ ДО ПОНЯТТЯ

Мета роботи полягає в історичному огляді феномена «майстер-клас» від його виникнення до сучасності. *Методологія* дослідження спирається на наукові культурологічні, філософсько-естетичні й музикознавчі праці, а також порівняльно-історичний, аналітичний і діахронічний методи. *Наукова новизна* полягає в спробі виявити джерела й шляхи розвитку поняття «майстер-клас», систематизувати в історично-хронологічній послідовності відомості про феномен «майстер-клас» у музичному мистецтві й визначити місце феномена «майстер-клас» у сучасному музичному мистецтві. *Висновки*. Досліджено