

THE MYTH OF THE ISOMORPHISM¹

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Abstract — Résumé

The immense influence of Greek musical thought upon Western theory and philosophy of music is well known. We owe to the ancient thinkers our basic aesthetic concepts, such as harmony and beauty, valuable observations concerning the origin and nature of music, its effects and its role in the life of the individual and society. Among the most significant motifs in the writings of Greek theoreticians is the idea of isomorphism between music and human subjectivity that was taken up and developed through centuries by philosophers and aestheticians. Apt examples in the modern philosophy of art are provided by Arthur Schopenhauer's and Susanne K. Langer's conceptions of music.

Though the thesis of isomorphism was applied to different art forms, music remained the paradigm case. To trace its history in the context of musical discourse is a worthwhile enterprise since this thesis is still being adduced for explanation and justification for the variety of effects and functions of music. The problem however is that its validity has yet to be established and its epistemological status clarified. This will be shown by looking at the ancient theory of ethos and at Susanne K. Langer's aesthetic theory.

Key words: *theory of musical ethos; structural analogy between music and subjective reality; aesthetic cognitivism; logical form*

»[M]usic too, in so far as it uses audible sound, was bestowed for the sake of harmony. And harmony, which has motions akin to the revolutions of the Soul within us, was given by Muses to him who makes intelligent use of the Muses, not

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as an aid to irrational pleasure, as is now supposed, but as an auxiliary to the inner revolution of the Soul, when it has lost its harmony, to assist in restoring it to order and concord with itself« (*Timaeus* 47d2-e2).²

This passage from Plato's *Timaeus* contains one of the numerous articulations of the ancient theory of musical ethos, which was initially outlined by the Pythagoreans³ and further developed by Damon and his successors Plato and Aristotle, to name the most prominent. Underlying this theory is the thesis of isomorphism between the movement of the tones of a melody on the one hand and of feelings and affective states of the human soul on the other.

Whereas the belief in the ethical power of music was attacked more than once during Antiquity — for example, by the Sophists and the Hellenistic philosophers Sextus Empiricus and Philodemus — and the theory itself was eventually discarded, its basic principle has been used by thinkers of different epochs and cultural traditions to establish the link between music (and aesthetics in general), on the one hand, and of ethics and other extra-aesthetic domains on the other. In the modern philosophy of music, the most significant examples of application of the principle of isomorphism are provided in the theories of Arthur Schopenhauer and Susanne K. Langer. For Schopenhauer, music had a special status among the arts as the most immediate embodiment of the will itself and not merely its copy. To support this claim he chose a pretty circuitous way. Schopenhauer argued that various aspects of the phenomenal world bear similarity with the formal elements of music that shares its capacity to objectify the will itself with this world.⁴ In other words, music is a unique means of objectification of the will by virtue of structural analogy between the elements of music and those of the world of representations.

Influenced by Schopenhauer's ideas, while distancing herself from their metaphysical underpinnings, Langer developed her symbolic conception of music. It will be discussed in some detail later in this paper.

Formulated initially in view of the specific nature of music, the principle of isomorphism was extended in the 18th century into the philosophy of art. Immanuel Kant's aesthetic theory provides a good example. The German philosopher expressed the ethical relevance of beauty in the formula »beauty is a symbol of morality«.⁵ In terms of Kant's subjectivist aesthetics, this means that in our experience

² PLATO: *in twelve volumes*. Vol. 9: *Timaeus. Critias. Cleitophon. Menexenus. Epistles*. Transl. by R. G. Bury (Cambridge, Mass.: Harvard Univ. Press; L.: Heinemann, 1966).

³ Some scholars point to the Oriental origin of the theory of musical ethos. See, for example, Warren D. ANDERSON, *Ethos and Education in Greek Music. The Evidence of Poetry and Philosophy* (Cambridge, Mass: Harvard Univ. Press, 1966), 42. However, it is pretty sure that the Pythagoreans were originators of this theory in Hellenic tradition.

⁴ Arthur SCHOPENHAUER, *Die Welt als Wille und Vorstellung*. In: *Arthur Schopenhauers Werke: in fünf Bänden / nach den Ausg. letzter Hand hrsg. von Ludger Lütkehaus*. Bd. 1. Neued. der 3., verb. und beträchtl. verm. Aufl. Leipzig 1859, 1-3. Tsd. (Zürich: Haffmans, 1988), § 52.

⁵ Immanuel KANT, *The Critique of Judgement*. Transl. by J. M. Meiklejohn. In: *Great Books of the Western World. The Critique of Pure Reason / Immanuel Kant* (Chicago [a. o]: Encyclopaedia Britannica, 1952), § 59.

with objects of beauty, which for Kant are natural objects in the first place and art works, we feel as if we are free. This is due to analogies between the freedom grounded in the free play of understanding and imagination inherent in aesthetic experience and the freedom of will that is the essence of morality.⁶

There are obvious differences between Kant's theory and the ancient theory of musical ethos. Kant, for example, drew the analogy between various kinds of *experience* whereas the Greeks had in mind the object-subject relationship. And in contrast to them, Kant's concern was not the real effects of art upon the individual. But these and other differences notwithstanding, we see Kant making use of the same principle of structural analogy to demonstrate the connection between Beauty and the Good.

We find more recent evidence in the work of the German philosopher Dieter Henrich, who seeks to explain the »foundations of art and how it resonates with life«. ⁷ Henrich argues that great art assimilates the dynamic patterns of our lives so that we can recognize them in art works and find our way in liberating ourselves.⁸

The above examples offer evidence of the persistence of the principle of isomorphism as an explanatory device of the potency and ethical values of music and art in general. However, in my view, this principle is problematic at least on two counts. First, it has never been established and its epistemological status clarified, and second, it seems not to provide sufficient support for the inferences that are derived from it. In what follows I am going to show this by looking at the ancient theory of musical ethos and at one twentieth century theory, that of Susanne Langer.

The relationship of likeness/unlikeness played a considerable role in the theorising of the Pythagorean school. According to the Pythagoreans, the basic principle of cosmic order and of the human soul is *harmonia*, which is rooted in numbers. Mathematical relations that constitute both the cosmic and the human *harmoniai* are akin to the proportional arrangements characteristic to musical attunement. From this they concluded that music is capable of exercising a moral effect upon the listener. The argument was thus that music influences the soul in a way two things that are alike do. Pythagoras, as reported by Iamblichus, was among those few who heard the music produced by moving heavenly bodies. And he used sounding, mortal music to bring the souls of his less advanced disciples in rhythm and order (XXV).⁹

⁶ Cf.: »We call buildings or trees *majestic* and *stately*, or plains *laughing* and *gay*; even colours are called *innocent*, *modest*, *soft*, because they excite sensations containing something analogous to the consciousness of the state of mind produced by moral judgements«. *Ibid.*

⁷ Dieter HENRICH, *Versuch über Kunst und Leben: Subjektivität — Weltverstehen — Kunst* (München [u. a.], 2001), 9.

⁸ *Ibid.*, 131.

⁹ IAMBlich, *De Vita Pythagorica*. In: *Peri tu Pythagoreiu biu. Pythagoras: Legende, Lehre, Lebensgestaltung* / Jamblich. Eingeleitet, übers. und mit interpretierenden Essays vers. von Michael von Albrecht [u. a.] (Darmstadt: Wiss. Buchges., 2002).

The Pythagorean motif of the isomorphism between the movement of musical tones and the movement of the soul — human and cosmic — was taken up by their successors, who did not see themselves in need to explain and justify it. The Hellenistic philosopher Philodemus, famous for his devastating criticism of the theory of ethos, accused its later advocates who, in his words, merely »give an inventory of what they learned from certain Pythagoreans« (*De Musica*, Anderson, 155). A brief glance at some theories of the post-Pythagorean period can show that Philodemus' judgement is correct, at least as regards the legitimation of the basic principle of the theory of ethos.

The fifth-century theoretician Damon, who set forth a number of significant aspects of the theory of musical ethos, contributed significantly to its development. He explored the impact of different rhythmic and melodic patterns upon the soul, sketched typologies of rhythms and modes, and underscored the political significance of music.¹⁰ Damon saw the educational function of music in its capacity to »instil a character previously absent, in children and in older people too, and draw out a character that lay hidden within« (III 80, 27-29).¹¹ This belief was based upon his conviction that musical movement corresponds to the movement of the soul. In his address to the Athenian Areopagus, which was responsible for supervising public morality, he maintained that »song and dance necessarily arise when the soul is in some way moved« (37B6).

Plato, who borrowed heavily from Damonian ideas, argued that »rhythm and harmony find their way to the inmost soul and take strongest hold upon it, bringing with them an imparting grace, if one is rightly trained, and otherwise the contrary« (*Republic* 401 d-e).¹² He shared with the Pythagoreans the cosmological aspect of the theory of ethos and adopted their justification for the ethical power of music. As Werner Jäger rightly observed, Plato was rather assuming the theory of ethos than establishing it.¹³

Aristotle followed his teacher when he attributed an important role in moral education to music. He similarly postulated the ethical effects of music on the basis of the principle of likeness: »[T]here seems to be in us a sort of affinity to musical modes and rhythms, which makes some philosophers say that the soul is tuning, others, that it possesses tuning« (*Politics* 1340b 17-19).¹⁴

The upshot of the above discussion is that the principle of isomorphism between musical movement and subjective experience was purported to have ex-

¹⁰ »Musical modes are nowhere altered without (changes in) the most important laws of the State« (37 B10).

¹¹ Aristides QUINTILIANES, *De Musica*. In: Andrew Barker (ed.). *Greek Musical Writings*. Vol. II. Harmonic and Acoustic Theory (Cambridge [a. o.]: UP, 1989).

¹² PLATO: *in twelve volumes*. Vol. 5. *The Republic*. In two vol. Vol. I. Books I-V. Transl. by Paul Shorey (Cambridge, Mass.: Harvard Univ. Press; L.: Heinemann, 1963).

¹³ Werner JÄGER, *Paideia. Die Formung des griechischen Menschen*. 2. Bd., (Berlin [u. a.]: de Gruyter 1944), 301.

¹⁴ ARISTOTLE, *Politica*. In: *The Works of Aristotle*. Transl. into English under the editorship of W.D. Ross. Vol. X (Oxford: Clarendon Press, 1952).

planatory power and served as a theoretical basis for the most important Greek conception of music, while the attempt to establish it was never undertaken. The Russian philosopher and musicologist, Alexei Losev, qualified it as the »ancient axiom of musical ethos«. That this »axiom« lacks evidence and is a rather dubious basis to build a hypothesis upon was pointed out by Philodemus, who wrote:

»Even granting that the movement of the sun and moon and the distance between them have analogies with the movement (and spacing) of musical sounds, and that the zodiac (is comparable) to the system of division on the monochord, the fact of relationship is not established, since many factors which bear upon determining the nature of the analogy show the greatest conceivable difference« (*De Musica*, Anderson, 155).

This criticism of Philodemus, which can be extended into the relationship sounding music-human soul, is remarkable in focusing not on the empirical evidence against the theory of ethos but in attacking its underlying principle of isomorphism, namely disputing the very legitimacy of the analogy. At some other point, Philodemus ascribed to Diogenes of Babylon, who is his primary opponent in *De Musica*, a notion of likeness between music and ethical qualities which is *non-imitative* by its nature.¹⁵ This peculiarity of Diogenes' position allowed the assumption that there were at least two competing views about the nature of the isomorphic relationship between music and ethos in Antiquity — one involving mimesis and another free of it, whatever the latter could mean.

It thus appears that the thesis about the likeness between music and ethical qualities remained controversial in the ancient debate on the ethical effects of music, and many questions concerning the nature of this relationship were left open. The fact that the »reincarnation« of the notion of isomorphism in one of the most influential theories of the last century witnesses to its appeal and *prima facie* plausibility. Susanne Langer, who is referred to here, demonstrates a similar overestimation of the explanatory power of this notion. Here is not the place for discussion of Langer's very elaborate philosophy of music, which is an integral part of her general philosophy of symbolic forms. I will touch only upon aspects that bear a direct relevance to the subject of this article.

In her most well-known book, *Philosophy in a New Key* (1942), Langer set out to demonstrate that music, which she conceives as a kind of presentational symbol, has cognitive value. More specifically, she argued that the peculiar value of music lies in its capacity to express the nature of our emotional experience. In her subsequent works, *Feeling and Form* (1953) and *Problems of Art* (1957), she extended her

¹⁵ »For music is not an imitative thing, as some foolishly claim; nor does it, as Diogenes supposes, contain ethical likenesses that are non-imitative while showing in full all such ethical qualities ... (as) magnificence (and) humbleness of spirit, or manliness and its opposite, or orderliness and boldness« (*De Musica*, Anderson, 155).

conception of music into other art forms, but this aspect of her work is beyond the scope of the present article. What is important is that Langer was investigating the specific nature of music in *Philosophy in a New Key*, without proving the validity of her arguments in respect to other art forms.

The quintessence of Langer's account can be summarized as follows: language is a very poor medium for expressing how we feel, but there is a correspondence between the structural form of the feeling and of musical works, and it is exactly because of music's ability to mirror the inner life that it can serve as a medium through which we can envisage and understand the latter. It should be clear, then, that the thesis of isomorphism, which Langer takes as the ground for symbolic relation, has great weight in her theory. Indeed, it stands and falls with it. But what evidence does Langer adduce in support of her claim of isomorphism between music and feeling?

Langer used interchangeably a number of concepts — »resemblance«, »isomorphy«, »analogy«, »projection« — to characterize the relationship between music and human subjectivity. Of these, »isomorphy« is the most exact designation of what she has in mind: music and »sameness of logical form« in some perceptible phenomenon »and the more elusive one it represents«¹⁶. That human feeling and music are connected in that way, that is, »[t]hat musical structures logically resemble certain dynamic patterns of human experience«, is, Langer maintains, »a well established fact«.¹⁷ Consequently, she did not offer arguments of her own but referred to the works which, as she believed, provide confirmation for music-feeling isomorphism. Specifically, Langer relied on the research of Wolfgang Köhler who pointed out that such words as *crescendo*, *diminuendo*, *ritardando*, and *accelerando* can be aptly applied both to dynamics of music and to inner life.¹⁸

In my opinion, this argument is ineffective as an argument in support of the claim that music and human subjectivity share the same logical form. The first objection is that we apply the language of musical dynamics with no less legitimacy to countless other dynamic patterns like setting and rising of the sun or train motion, and actually to all kinds of motion, independently of the specific nature of its bearer. This demonstrates that the similarity between musical movement and dynamics of feeling, given there is one, is not exclusive. We might well wonder why the dynamic patterns of music are claimed to manifest forms of feeling rather than other processes that possess similar dynamic structure.

Let me turn to the second objection. In contrast to feelings, overt motion, say, the train motion, can be directly observed and hence compared with the movement of musical sounds. As a result of this, comparison would presumably emerge

¹⁶ Susanne LANGER, *Mind*. Vol. 1 (Baltimore, Md.: John Hopkins Press, 1967), 76.

¹⁷ S. LANGER, *Philosophy in a New Key. A Study in Symbolism of Reason Rite, and Art*. 3rd ed., 2nd print (Cambridge, Mass.: Harvard Univ. Press, 1960), 226.

¹⁸ *Ibid.*

that the similarity consists in the fact that, for both kinds of movement, tempo/change of the tempo is an essential factor. This is not much. Langer, however, made a much stronger and much more ambitious claim in respect to subjective reality, which is not susceptible to immediate perception: namely, she insisted upon the »sameness of logical form«. Langer borrowed the idea of logical form from Ludwig Wittgenstein's *Tractatus Logico-Philosophicus* where he held that propositions and thoughts are logical pictures of the state of affairs that are comprised of objects; each element of these »pictures« reflects an object in the state of affairs, while the combination of the elements corresponds to the logical structure of the state of affairs. Whereas Wittgenstein excluded feelings and mental states in general from his account, Langer set out to extend it into this sphere. But having chosen the notion of logical form (and not a more weak and vague one like »resemblance« or »likeness«), she was obliged to specify the correspondent elements of musical structures, on the one hand, and forms of feeling on the other, which she never did. Instead, Langer pointed out that music is capable of reflecting and exhibiting only the general structure of emotion, that is, »patterns of motion and rest, of tension and release, of agreement and disagreement, preparation, fulfilment, excitation, sudden change, etc.«.¹⁹ In doing so, she placed special emphasis upon the »tension-release« pattern, which is best exemplified in the resolution of dissonance, as fundamental to music. This seems to reduce the applicability of Langer's isomorphism claim, if tenable at all, to certain kinds of music and, therefore, renders it inappropriate as an explanation of the nature of music *per se*.

Another issue is that, even if Langer had named the elements of the dynamical structures of feeling and music, we were not in a position to verify her hypothesis since, we had no other way in Langer's account to gain access to the forms of feeling, apart from their expression in music.²⁰

So far we have been discussing the legitimacy of the thesis of isomorphism. Further worries can be raised in respect to the consequences that have been derived from this thesis. Namely, it was used to justify very different and even contradictory claims. Let me elucidate. Langer, like the advocates of the Greek theory of musical ethos, stressed the educational power of music and even went so far as to conceive of music education as »education of feeling«. ²¹ She similarly appealed to structural analogy between tonal motion and subjective reality to explain the mechanism of educational and moral improvement through music, but she saw this as working quite differently. The Greek theoreticians, as mentioned above, believed that, by virtue of this analogy, music can *influence* the soul, and this is

¹⁹ *Ibid.*, 228.

²⁰ It should be pointed out that Michael Piechowski believes he has found empirical support for Langer's theory in the experimental research of the psychologist, Manfred Clynes. However, his theory of essentic forms, to which Piechowski refers, has yet to be proven. See: Michael PIECHOWSKI, *The Logical and the Empirical Form of Feeling*, *Journal of Aesthetic Education*, 1981, Vol. 15/1, 31-53.

²¹ S. LANGER, *Problems of Art* (N.Y.: Charles Scribner's Sons, 1957), 74.

exactly what Langer denied. She vehemently repudiated theories that derive music's value and significance from its capacity to evoke emotions in listeners. Langer maintained that music educates, not through direct impact upon the individual but through presenting forms of feeling for contemplation. It transforms our awareness of emotion and feeling, imposing patterns on our experience. Music not only gives us knowledge of familiar emotions but makes us aware of new possibilities for feeling. The composer expresses her/his knowledge about feeling, which may have nothing to do with her/his own emotional experience. And the perception of musical forms in which the composer's knowledge is manifested enables listeners to gain insight into the essential nature of felt life. According to Langer, as regards the emotional response that the composer and the listener share, if there is any, it springs »from the comprehension of an unspoken idea«, »from an intellectual triumph, from overcoming barriers of word-bound thought and achieving insight into really 'unspeakable' realities«.²²

Langer thus assigned music purely intellectual cognitive value on the basis of the logical resemblance between the dynamic patterns of musical forms and formal properties of feeling. This aspect of Langer's account has some implausible and even counter-intuitive consequences. For example, it implies that our interest in music is exclusively cognitive, which runs counter to our experience as listeners, musicians, improvisers, etc. We normally do not attend to music in order to acquire knowledge but find the musical experience *per se* to be rewarding.

Another difficulty is that, if what we seek in music is knowledge about feeling and if all compositions exhibit the same typified patterns thereof, it is not clear why we should want to listen to musical works repeatedly and listen to different works after we have once obtained the knowledge we were looking for.

This article has been largely destructive. Concluding, I wish to suggest that behind the thesis of isomorphism there is a kind of allegedly self-evident idea or intuition, which is deserving of serious study because of its both theoretical and practical importance. The theoretical relevance of the thesis of isomorphism and the pertinence of the examination of its validity and explanatory power is obvious, in view of its persistence through the history of aesthetics. Its practical significance rests in its attractiveness from the educational standpoint. The best evidence is provided by the theory of music education as aesthetic education that is based on Langer's account. It was developed in the 1960s and dominated music education theory and practice over three decades in North America. During that period of time, music educators were supposed to educate the feeling of their students, because the authors of the theory of music education as aesthetic education — Bennett Reimer in the first place — had been convincing them via Langer that music can really do this, by virtue of this notorious isomorphism — and that is something that only music can do.

²² S. LANGER, *Philosophy in a New Key*, 259-260.

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Sažetak

MIT O IZOMORFNOSTI

Ideja o izomorfnosti između glazbe i ljudske duše služila je od antičkih vremena kao sredstvo za objašnjavanje etičkih i spoznajnih vrijednosti i učinaka glazbe. Međutim, njezina je objašnjavajuća moć prilično problematična. Pojam o strukturnoj analogiji između pokreta tonova melodije s jedne strane te osjećaja i afektivnih stanja ljudske duše s druge strane, stoji u pozadini antičke teorije o glazbenom ethosu, što su je prvo zacrtali pitagorejci a potom razradili Damon, Platon, Aristotel i neki mislioci helenizma. Pitagorejski su filozofi pretpostavljali da su matematički odnosi koji tvore i kozmičke i ljudske *harmoniai* srodni proporcionalnim urednostima karakterističnima za glazbeni sklad. Iz toga su zaključivali da je glazba sposobna vršiti moralni učinak na slušatelja. Ovome se zaključku usprotivio Filodem koji je naglašavao nejednakost čimbenika koji određuju analogiju.

Američka filozofkinja 20. stoljeća Susanne K. Langer na sličan se način oslanjala na načelo izomorfnosti. Prema Langerovoj, postoji korespondentnost između strukturne forme osjećaja i glazbenih djela, i upravo zbog svoje sposobnosti da zrcali unutarnji život glazba može služiti kao medij s pomoću kojega možemo razumjeti ovaj potonji. Teorija Langerove višestranost je ranjiva. Prvo, sličnost između glazbenog pokreta i dinamike osjećaja — ako i postoji — nije isključiva. Možemo se pitati zašto se tvrdi da dinamički obrasci glazbe očituju osjećajne forme više nego neke druge procese koji posjeduju sličnu dinamičku strukturu. Drugo, insistirajući na »istovrsnosti logičke forme«, Langerova nije odredila odgovarajuće elemente glazbenih struktura i osjećajnih forma.

Valjanost načela izomorfnosti nadalje ugrožava činjenica da ga se upotrebljavalo za opravdavanje vrlo različitih, pa čak i proturječnih tvrdnji. Langerova je, poput zagovaratelja grčke teorije o glazbenom ethosu, naglašavala odgojnu moć glazbe, pa je otišla tako daleko da je glazbeni odgoj smatrala »odgojem osjećaja«. Na sličan je način pozivala na strukturnu analogiju između tonskog pokreta i subjektivne stvarnosti kako bi objasnila mehanizam odgojnog i moralnog unapređivanja putem glazbe. No, dok su grčki teoretičari vjerovali da uz pomoć te analogije glazba može *utjecati* na dušu, Langerova je to žestoko osporavala. Tvrdila je da glazba ne odgaja putem izravnog utjecaja na pojedinca nego s pomoću predstavljanja osjećajnih forma kontemplaciji. Glazba transformira našu svijest o emocijama i osjećajima, utiskujući obrasce u naše iskustvo.