

**Language of Emotions, Peacock's Tail  
or Auditory Cheesecake? Musical Meaning:  
Philosophy vs. Evolutionary Psychology**

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Traditional views concerning musical meaning, in the field of philosophy, quite often oscillate around the discussion of whether music can transfer meaning (and if so if it happens by a means similar to language). Philosophers have provided a wide range of views – according to some, music has no meaning whatsoever, or if there is any meaning involved, it is only of a formal/structural significance. According to the opposing views, music can contain meaning in a similar way to language and what is more, sometimes it can be even richer than language, as in music we are – arguably – able to encode “emotional meanings”.

In recent years, several approaches – also speculative – to the old philosophical question have been proposed by evolutionary psychologists, one of the most controversial views being that of Stephen Pinker's famous metaphor for music as “auditory cheesecake”. This anti-adaptationist view has been challenged f. ex. by Geoffrey Miller or Ian Cross.

In this chapter, I enlist some of the main philosophical views on the titular problem and investigate some evolutionary-paradigm-based propositions for its solution, to examine whether – both from explanatory and methodological standpoints – the philosophy of music could gain something from recent developments in evolutionary psychology.

## **The Problem of Musical Meaning in Philosophy**

Let's start with philosophy. Around two and half thousand years ago, according to some accounts, Pythagoras said that when “he encountered some drunken youths trying to break into the home of a virtuous woman, he sang a solemn tune with long spondees and the youths' ‘raging wilfulness’ abated” (Riedweg 2008, 30). This could be seen as one of the earliest anecdotes (at least in Western thinking) stressing the power of musical meaning. Speaking more seriously, Pythagorean views on music were much more metaphysical, however, stretching to the extent of an understanding of music as an abstract, mathematical form of the universe. As it was claimed that Pythagoras discovered the mathematical relationships in musical intervals, such claims, however strange we find them today, might seem justified for one trying to understand and explain the mathematical character of Cosmos. Anyhow, in the Western tradition, the philosophy of music (and its meaning) started with the Pythagoreans who were the first to emphasize the importance of music, both its therapeutic power and its

power to signify something and the debate has lasted until modern times.

In the following centuries, several, quite different and often contradictory, answers were provided to the question of why we listen to music and what might the musical meaning be. Starting from the Sophists, who claimed that we listen to music simply for physical pleasure, in the same way as we eat for the pleasure of eating, and ending with the Formalists, according to whom there is no meaning in music, or, if there is anything we listen to music for, it is its form, i.e. its formal (syntactical) dependencies. Between (or beyond, depending on the type of classification) those two radical views lies a wide spectrum of theories according to which music has or, at least, can have some kind of meaning. How is that meaning defined and – maybe more importantly – how does it function, remains the subject of the main controversy. Therefore, generally, we can speak of two main and basic questions within the musical meaning problem:

- 1) Can a piece of music have a meaning? If yes,
- 2) What is musical meaning?

In other words, as Levinson puts it, we have two main views: the autonomist and the heteronomist:

“The autonomist position is that music has no meaning, or else that it means only itself (thus yielding what is sometimes called ‘intra-musical’ meaning). The heteronomist position is that music has some sort of meaning that is other than the music itself (sometimes denominated ‘extra-musical’ meaning)” (Levinson 1998).

The modern debate is often considered to have started with the famous study by Eduard Hanslick, *On the Musical Beautiful* (1886) in which he expressed a formalistic approach to music, as opposed to the popular, rooted in romanticism, thesis that music can express emotions. According to Hanslick, music does not express (or even worse – contain) emotions. We can speak of music as symbolizing emotional qualities, as tension, surprise or calmness, but it is only an analogy, based on the dynamic elements contained in the music. Music does not have any content, and what is substantial of music is its form only. As Hanslick put it, referring to Gluck’s famous air from *Orfeo ed Euridice*, where Orpheus sings: “I have lost my Euridice, nothing equals my misery!” the line could be substituted equally well by “I have found my Eurydice, nothing equals my happiness!” and the music would suit just as well. Hence, concludes Hanslick, music itself cannot express emotions, that would lead to a contradiction. What is important in

music is the structure and not the “emotional content”, as we cannot even identify the latter. This and similar views on musical meaning, or rather lack of musical meaning is called formalism and is still a popular point of view, at least among philosophers (e.g. Scruton 1999; Zangwill 2004). At the other end of the spectrum, we have the so-called, linguistic paradigm, according to which, roughly speaking, music is to some extent like language, and music possesses meaning as (or similarly too) a language. This concept is rooted in romanticism and a view of music as the “language of emotions”. It was quite popular among composers, but also philosophers. For example, Schopenhauer famously claimed: “[music] does not express this or that individual or particular joy, this or that sorrow or pain or horror or exaltation or cheerfulness or peace of mind, but rather joy, sorrow, pain, horror, exaltation, cheerfulness and peace of mind as such in themselves, abstractly” (Schopenhauer 2011, 289).

One of the most interesting philosophical views on musical meaning can be found in Susanne Langer’s work *Philosophy in the New Key* (1979). In the chapter primarily devoted to music and its meaning, Langer developed a Wittgensteinian (i.e. based on Tractarian theory of meaning, not Wittgenstein’s views on music) concept of musical meaning. In her view music is capable of being symbolic, in the same way that language can be symbolic. The difference is that while linguistic symbols are representational, musical symbols are presentational, not descriptive or discursive. In this way, musical meanings are symbolic in a more imaginary than representative way. Even though the concept of presentational symbols seems to be controversial, Langer’s arguments for the connection of music with language are still disputed up to now and are often mentioned in discussions concerning musical meaning, and not only in philosophy (Koelsch 2012).

If one accepts that music and language are somehow connected, then, by this, one usually means that music expresses something, in a way somehow similar to the way language expresses something. Obviously, the contents of musical expression would not be as easily understood as the content of a linguistic expression. With the statement: “the Laptop is on the table” I can quite easily express my view on the actual state of being, but it would be hard to express the same through music. Musical expressions are often – not only, however – about emotions. Here we meet another dimension of the problem of musical meaning. Having agreed that music has something to do with emotions, we need to know how this connection works. There are several answers to this problem, the main two being: (a) cognitivism and (b) emotivism. According to cognitivism, we mainly recognize and understand musical emotions, and according to emotivism, we

mainly feel the emotions in music. I use the word “mainly” to indicate the point at which the theories are often in opposition; however, it might be that we both feel and understand musical emotional meanings.

Let’s think of the 2nd movement of Bach’s Double Violin Concerto in D-minor. Some people would agree that we can hear some form of sadness there. How is this possible? The possible answers are as follows: (1) Sadness can be found in music, in other words, the music possesses sadness as an emotional quality. This seems to be quite implausible though (at least according to a somewhat naturalistic perspective), given that sadness is a kind of emotion, which is, in turn, a kind of a mental state. Other – non-contradictory – possibilities: (2) The music makes us feel sad and (3) we imagine sadness or understand music as sad. This problem is another of the major controversies in the contemporary philosophy of music.

Summing up this short and selective overview, we can see that philosophers have provided almost all of the possible answers to previously stated questions. Starting from an understanding of music as not having any meaning, through formalism, symbolism, emotivism and ending with cognitivism. The discussion is still lively; however, it seems that little further progress has been made over the last few years on the philosophy of music alone.

Musical research is developing very quickly in what is broadly understood as the cognitive sciences and research into the roots of music, and language in evolutionary psychology seems to provide some particularly interesting points of view, which may be worth looking at (after dealing with some meta-theoretical obstacles), also by philosophers.

## **The Functions of Music as Seen by Evolutionary Psychology**

“As far as biological cause and effect are concerned, music is useless. It shows no sign of design for attaining a goal such as long life, grandchildren, or accurate perception and prediction of the world. Compared with language, vision, social reasoning, and physical know-how, music could vanish from our species and the rest of our lifestyle would be virtually unchanged. Music appears to be a pure pleasure technology, a cocktail of recreational drugs that we ingest through the ear to stimulate a mass of pleasure circuits as once” (Pinker 1997, 528).

“I suspect that music is auditory cheesecake, an exquisite confection

crafted to tickle the sensitive spots of at least six of our mental faculties. A standard piece tickles them all at once, but we can see the ingredients in various kinds of not-quite-music that leave one or more of them out" (Pinker 1997, 534).

These controversial views of Stephen Pinker, one of the most influential cognitive psychologists of the end of XX century caused lively debate – not only in the various fields of psychology (cognitive or evolutionary) but generally among academics concerned with the broad issue of the function of music (be it social, cognitive, para-linguistic or emotional)<sup>1</sup>. Naturally, the meaning of music, from an evolutionary perspective on psychology, will be reduced (if not eliminated) to some sort of a functional explanation of the role that music played in the evolution of the human mind which in turn produced musical behaviour. Still, the question remains linked to the previous philosophical considerations – if music is capable of being meaningful, then there must be some “evolutionary reason” behind that. What type of reason that might be is a different question.

As seen above, it is quite obvious that in the view of Pinker, music is not an adaptation. Such a view stands in opposition to some of the classical positions, the most famous being that of Darwin, according to who musical abilities are the outcomes of sexual selection that signifies the fitness of males (analogously to the song of some species of birds), which also helped the development of what later became human languages:

“... it appears probable that the progenitors of man, either the males or females or both sexes, before acquiring the power of expressing their mutual love in articulate language, endeavored to charm each other with musical notes and rhythm” (Darwin 1871, 880).

The modern version of such a position is offered by Geoffrey Miller in *The Mating Mind: How Sexual Choice Shaped Human Nature* (2000a), where the author states that music is an adaptation, an important adaptation that developed through sexual selection. In Miller's view, music (as well as art, sports, religion, self-consciousness, and moral virtue) evolved rather through sexual selection than the classical natural selection. Miller, while accepting that music is an adaptation, fully rejects the survivalist view according to which the main role in the evolution of all human mental abilities was played by the “survival of the fittest”.

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<sup>1</sup> As such, the problem of musical meaning might be treated as multi- or interdisciplinary, for example, in cognitive neurosciences the functional processing of music is often compared with the function of other cognitive abilities, in order to search for possible links or underlying mechanisms (Koelsh 2012).

In *The Mating Mind* we read that: “Even if the survivalist theory could take us from the world of natural history to our capacities for invention, commerce, and knowledge, it cannot account for the more ornamental and enjoyable aspects of human culture: art, music, sports, drama, comedy, and political ideals” (Miller 2000a, 2).

The survivalist view could be defended by introducing an explanation involving side effects – while the human brain evolved in order to develop human fitness, an accidental outcome of that, together with growth of the brain, some extra, unintentional, ornamental qualities evolved, like music. According to Miller, however, such a defence is unsatisfactory:

“Biologically, it predicts that other big-brained species such as elephants and dolphins should have invented their own versions of human art. Psychologically, it fails to explain why it is so much harder for us to learn mathematics than music, surgery than sports, and rational science than religious myth” (Miller, 2000a, 2).

Music doesn’t (directly) help to get more food, omit sickness or avoid predators. Instead, Miller proposes a view according to which music evolved to function as a courtship display (in a way like Peacock’s tail). Here’s an example how it can work in contemporary human:

“Consider Jimi Hendrix, for example. This rock guitarist extraordinaire died at the age of 27 in 1970, overdosing on the drugs he used to fire his musical imagination. His music output, three studio albums and hundreds of live concerts, did him no survival favours. But he did have sexual liaisons with hundreds of groupies, maintained parallel long-term relationships with at least two women, and fathered at least three children in the U.S., Germany, and Sweden. Under ancestral conditions before birth control, he would have fathered many more. Hendrix’s genes for musical talent probably doubled their frequency in a single generation, through the power of attracting opposite-sex admirers. As Darwin realized, music’s aesthetic and emotional power, far from indicating a transcendental origin, point to a sexual-selection origin, where too much is never enough. Our ancestral hominid-Hendrixes could never say, ‘OK, our music’s good enough, we can stop now’, because they were competing with all the hominid-Eric-Claptons, hominid-Jerry-Garcias, and hominid-John-Lennons. The aesthetic and emotional power of music is exactly what we would expect from sexual selection’s arms race to impress minds like ours.” (Miller 2000b, 331).

In the Millerian sense, music is a set of sexually selected indicators. Those indicators might include: “Dancing reveals aerobic fitness, coordination, strength, and health. Because nervousness interferes with fine motor

control, including voice control, singing in key may reveal self-confidence, status, and extroversion. Rhythm may reveal the brain's capacity for sequencing complex movements reliably, and the efficiency and flexibility of the brain's 'central pattern generators'. Likewise, virtuosic performance of instrumental music may reveal motor coordination, capacity for automating complex learned behaviors, and having the time to practice (which in turn indicates not having heavy parental responsibilities already, and hence sexual availability). Melodic creativity may reveal learning ability to master existing musical styles and social intelligence to go beyond them in producing optimally exciting novelty" (Miller 2000b, 340).

This idea is apparently highly speculative. Even though the concept of music as a set of indicators can explain the evolution of musicality, we are – seemingly – still quite far from the traditional area of musical meaning. By saying that music is an adaptation, we still lack an explanation for where the differences in musical (which is described not only by rhythm and complexity) evaluations come from. We might be interested in why and how a given piece of music is “emotional” or how we sometimes “understand” it. Miller provides an idea to answer such doubts, introducing the concept of music as a set of sexually selected aesthetic displays, which is based on the effect of the Fisherian runaway. In the original formulation by Fisher: “Whenever appreciable differences exist in a species, which are in fact correlated with selective advantage, there will be a tendency to select also those individuals of the opposite sex which most clearly discriminate the difference to be observed, and which most decidedly prefer the more advantageous type. Sexual preference originated in this way may or may not confer any direct advantage upon the individuals selected, and so hasten the effect of the Natural Selection in progress. It may therefore be far more widespread than the occurrence of striking secondary sexual characters” (Fisher 1930).

In other words: if there is a trait T among the males of a given species and some preference towards a perceptual quality Q of T in females along with an initial bias towards the preference P for Q of T, then – by sexual selection – Q and P will evolve, develop and become prevalent in both males and females. There are several examples of such an effect in nature, most famously, the peacock's tail, or generally the clear difference between peacocks and peahens. Miller extrapolates the Fisherian explanation to the human mind and behaviour and also relates it to the function of music, as below:

“Any psychological mechanism used in mate choice is vulnerable to this runaway effect, which makes not only the displays that it favors more ex-

tre, but makes the emotions and cognitions themselves more compelling. Against the claim that evolution could never explain music's power to emotionally move and spiritually inspire, the runaway theory says: any emotional or spiritual preferences that influence mate choice, no matter how extreme or subjectively overwhelming, are possible outcomes of sexual selection. If music that emotionally moves or spiritually inspires tended to sexually attract as well, over ancestral time, then sexual selection can explain music's appeal at every level" (Miller 2000, 340).

If Miller is right (which with current methods and types of evidence is hard to establish scientifically) music and music's capability to communicate might find an explanation within the evolutionary paradigm, which seems to be an enticing solution, especially for naturalistically minded philosophers of music (and mind). On the other hand, there are several alternatives to the Fisherian runaway as explanations, the main alternative being the Handicap Principle proposed by Amotz Zahavi. While trying to answer the question of why some traits, which apparently do not help the fitness of the male, are preferred by females (deer's antlers, peacock's tail), Zahavi writes: "sexual selection is effective because it improves the ability of the selecting sex to detect quality in the selected sex. The selecting sex benefits because it can be assured of the quality of its mate, while the selected sex benefits because it can better advertise its quality and thus probably acquires more or a better mate. But both sexes also lose. Males lose by investing (time, energy, risks, etc.) in advertising. Females may receive less help from their mates and bear sons which are less fit to stand the pressure of natural selection (since they are also of the genotype which invests more in attracting females)" (Zahavi 1975, 207).

One of the ways to present quality – the original idea of Zahavi – is through a handicap system. A male by developing a trait that handicaps in comparison to others shows that it can survive even though it is weaker, or more endangered in the environment. By this, the quality of the genes is presented, and as an outcome, a handicapped male may be found to be attractive by female and preferred over non-handicapped specimens. In effect, the trait becomes more popular and prevalent in the species. While this category was first applied to animal (bird) behaviour, as a general rule could be hypothetically extended on other species, including humans. In this sense, if searching for an evolutionary explanation for the function of music, we could also consider the handicap principle. Applied to human music, it could be assumed that musicality (or, going further, maybe even particular abilities to control musical characteristics, as rhythm, melody or harmonizing) is a handicap. The problem arises, however, that – contro-

versially – sexual dimorphism is not as noticeable in the case of music abilities as it is in the appearance of a peacock. Or maybe it is? Also, it would be necessary to offer an explanation of how musical traits could be related to the ecological problems of the species. Depending on the answers to these questions, which is beyond the scope of this article, one could decide whether it is valid to include sexual selection theory as an explanation for the function of music.

Quite a different approach is taken by Ian Cross in his work concerned with music as a social tool compared to language. In the article “*The Evolutionary Nature of Musical Meaning*” Cross claims that both music and language constitute complementary components of human communication systems. Musical meaning, being different from language, can be categorized according to its two main functions: culturally-enactive and motivational-structural. While culturally-enactive meaning arises from cultural contexts (and may vary among populations), the motivational-structural aspect is rooted in survival-related development and has strong links to evolution. In this way, his point supports an adaptationist view. While we are not interested in the culturally-enactive meaning here, let's have a closer look at motivational-structural meaning. In this sense, it seems that Cross' idea is quite simple. Music as a communicative tool uses natural signals. Why has music evolved? Because it became a stable strategy to make specific sounds. Here is an example:

“Lower frequency sound signals denote larger animals: perceivers (assessors) will be selected to attend focally to the frequencies of sounds in making judgments about threat level; simultaneously, managers (sound producers) will be selected so as to be capable of producing the lowest frequency sounds possible so as to seem to constitute the greatest possible threat” (Cross 2004, 185).

Low-frequency sounds suggest a large animal and thus danger from a predator; high frequency, rapid and intense sounds indicate “intense, terminal, fear and aggression”. As making such sounds has been shown to be useful in survival, it became a popular strategy for humans. Such an approach directly aligns with classical natural selection without much reference to sexual selection, as was, for example, mentioned in Miller's theory. Music directly helped with survival because it was communicative. At this level, however, still only as a sign, not as a symbol.

In another article on music and evolution (Cross 2003), Cross suggests that music might be an exaptation (which could be seen as contradictory to the idea of music as an adaptation). It is claimed that music may have arisen in the course of evolution in part as a result of processes of progres-

sive altricialisation<sup>2</sup>. To put it simply music evolved as a side-effect of the prolonged period of infancy in humans. The argument for such a claim goes as follows:

“It can be hypothesised that this absolutely longer maturational period sustained the persistence of childhood patterns of thought and behaviour into and through adulthood, at least in part because of the increased likelihood that a higher proportion of a population than had previously been the case would have had access to, and would have had to deal with those with access to, such patterns of thought and behaviour. Populations that accommodated their collective behaviours to childhood modes of thought, action and interaction are likely to have had members who were possessed of flexible modes of cognitive operation and were skilled in social interaction, hence affording them an advantage in survival (and reproduction) over populations that had not engaged in such an accommodation.” (Cross 2003, 86–87).

One of those “patterns of thought and behaviour”, claims Cross, is music. In other words, music evolved as we had contact with infants’ “proto-musical behaviour” for a long time (longer than any other primates) and music becomes incorporated into the adult’s cognitive framework, and that was useful.

No doubt, there could be different interpretations of music as an exaptation, but Cross’ speculations show a broad range of the possible ways in which the function(s) of music could be explained and incorporated within an evolutionary framework.

## Summary and Conclusions

As in philosophy the problem of musical meaning seems to have reached an impasse, with the assumption of methodological naturalism and the acceptance of some level of interdisciplinarity, one might try to reach towards the natural sciences to see if there are any developments that would help to provide ideas to be included within the philosophical discourse. Such a project could be seen as methodologically suspicious; hence, it’s worth providing some meta-framework of operation. Seeing the

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<sup>2</sup> Altricialisation defined as: “a lengthening of the pre-reproductive juvenile period” (Cross 2003, 79).

human mind (and its explanations) as a multilevel-mechanism (Bechtel, Abrahamsen 2005) might be one of the most promising approaches. The main controversy about musical meaning in philosophy is whether music is capable of being meaningful and if so if it is by means similar to that of language. Together with the development of the cognitive sciences (particularly cognitive neuroscience), this ancient problem finds some empirical formulations (Szubart 2019). Another prevalent contemporary approach to model and explain musical meaning is evolutionary psychology. It does not seem to be controversial that Pinker's anti-adaptationist view on music is widely rejected.<sup>3</sup> Instead, several evolutionary models of musical meaning have been proposed, including music as an effect of sexual selection, by means of Fisherian runaway, or the handicap principle and music as a direct adaptation or music as exaptation. To decide which one of these ideas suits the evolutionary story best is not a task for the philosopher. It seems important to note, however, that musical meaning problem has its continuation, often based on long-term philosophical considerations, and the concept of music as somehow connected with language has not been lost; on the contrary, it is being developed further.

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<sup>3</sup> And shared the fate with its precursor – Sophists' idea of music as a purely physical pleasure.

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