
A cognitive concept of musical meaning

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Abstract

Almost two centuries after the publication of Hanslick's *On the Musically Beautiful: A Contribution to the Revision of Music Aesthetics* and the consolidation of the formalist current, its principles are still at the core of understanding musical meaning as an emerging property of musical form. The consolidated creative paradigm of a composer "picking up" music from his imagination and then decoding it into a musical notation to produce a music sheet that will stand for *the music itself* to be read by a performer that will, in turn, reconstitute the musical work to its sonic nature still is roughly the norm in the Western world. This paradigm, however, poses several challenges to musical meaning in other musical practices, especially those that mainly employ improvisation. Starting from a different concept of writing, dislodging the musical work from its usual "place" on the music sheet, and going through the notion of experience as the primary human process of knowledge formation, this article proposes a concept of musical meaning as "embodied" in musical experience, determined and conditioned by devices explained by theoretical frameworks from the enactivist cognitive sciences.

Keywords: musical form, musical meaning, music cognition, enactivism, formalism

Um conceito cognitivo de sentido musical

Resumo

Quase dois séculos após a publicação de *On the Musically Beautiful: A Contribution to the Revision of Music Aesthetics*, de Hanslick, e a consolidação da corrente formalista em musicologia, seus princípios ainda estão no cerne da compreensão do sentido musical como uma propriedade emergente da forma musical. O paradigma criativo consolidado de um compositor "colhendo" a música de sua imaginação e depois a decodificando em notação musical para produzir uma partitura que representará a própria ideia musical a ser lida por um intérprete que, por sua vez, restituirá à obra musical a sua natureza sonora ainda é praticamente a norma no Ocidente. Este paradigma, no entanto, coloca vários desafios ao sentido musical em outras práticas musicais, especialmente aquelas que empregam, sobretudo, a improvisação. Partindo de um conceito diferente de escrita, desalojando a obra musical do seu "lugar" habitual na partitura, e passando pela noção de experiência como processo humano primário de formação do conhecimento, este artigo propõe um conceito de sentido musical como "incorporado" na experiência musical, determinado e condicionado por dispositivos explicados por teorias das ciências cognitivas enacionistas.

Palavras-chave: forma musical, sentido musical, cognição musical, enacionismo, formalismo

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Introduction

Musical analysis tradition in Western scholarship, for the most part, has focused on dissecting and explaining music based on its structures—if it is under the formal patterns and paradigms already established, it makes sense. Doing so, it becomes evident a theoretical assumption that the musical meaning is some kind of emergent property of the very internal elements of the music itself: the meaning of the music exists when its form at least resembles the traditional schematic models. However, this model of musical meaning proposes a challenge for all kinds of musical practices that diverge from the Western European musical tradition to any degree. Especially those practices that break out from the *composer* → *music sheet* → *performer* → *listener* paradigm primarily practiced and cherished by this tradition. In musical practices such as *jazz*, for example, in which at least part of the musical work is created at the precise time of its performance employing improvisation, the traditional model of musical meaning emerges from pre-established forms, in which the internal structures of the piece are all arranged in a manner that conforms with the traditional paradigm, would ultimately render the music *meaningless*. Some other theoretical model is necessary to approach different kinds of music¹. Fortunately, according to recent works on music cognition, more specifically those informed by the *embodied* cognitive sciences — *enactivists* — there are other ways of understanding what *meaning* is and, consequently, what would be *musical meaning*.

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First, a very brief presentation of the musical meaning according to the so-called *formalist* tradition is due. Beginning with the historical mark of its inauguration in the 19th century, then proceeding to some of its contemporary supporters will serve to clarify its tenets and point out why they are not best suited to approach jazz improvisation (the object of more extensive research of which this paper is a partial report). Secondly, by expanding the very notion of *writing*, according to Jacques Derrida's concept of *scripture* (Derrida, 1973), it will be possible to assess further the validity of opposition between *written music* and *improvised music* so often discussed in musical scholarship, paving the way for a more specific understanding of the differences between composition, according to the Western European tradition, and jazz improvisation².

¹ It is undeniable that many musical practices that would require other theoretical frames different from the Western European tradition have been largely influenced by it. There is no opposition between traditional or “classical” music and jazz, for example. But an understanding that, because of the very reasons that will be presented later here, it would be at least inefficient to analyze a jazz solo transcription applying the models and theoretical tools of the formalist tradition.

² Although it is, in fact, a crucial point to the research work from which the present one is derived, the discussion of the differences between traditional composition and jazz improvisation processes will not be addressed here for the sake of the main focus of this paper: to present a cognitively informed view of the musical meaning.

In face of the difficulty of adopting the compliance with pre-established musical forms from formalist theories as the meaning of the music in jazz improvisation (or any other improvised musical practice for that matter), especially in light of Derrida's theoretical framework of the transcendence of the notion of writing, I turn to the view of the musical meaning as a process that occurs embedded in the experience of the music itself. However, I will adopt the term *experience* proposed by John Dewey in *Philosophy and Education* (1986) as a starting point in defining musical meaning as an unconscious property of human perception (Larson, 2012).

Finally, based on the models and theoretical frameworks of the embodied cognitive sciences (enactivism), I intend to explain some key features of this theoretical current to present a cognitive model for musical meaning.

The formalist meaning of music

Although terminologically reasonably appropriate to refer to a theoretical current that proposes the musical form as its very meaning, the term *formalist* is often used pejoratively by critics of this "autonomous" view of music—independent of whatever external factors. The historical mark adopted for the consolidation of this theoretical current is the publication of Eduard Hanslick's *On the musically beautiful: A contribution towards the revision of the aesthetics of music* in 1854. In Hanslick's vision, the *beautiful* in the music is an end in itself and may even arouse some emotions in those listening. Still, it is an inevitable particular, although irrelevant, experience of each listener. The music's fundamental relevant aspects of the music, according to Hanslick, are its inner structures and workings. This line of thought may be traced back to musical appropriations of the concept of *form* (through metaphors) from other fields of study, such as psychology, beginning in the 18th century.

In the same way, as we perceive *form* in the physical world as "a configuration that distinguishes an object — or a compound of objects — separating it from an undifferentiated background"³ (Nogueira, 2010, p. 113), we ought to do the same with musical structures that we experience as musical objects on a musical "space." From this analogy of form, a whole tradition of musical analysis came forth, treating the *musical form* and the relationships among its inner elements as all that is about musical meaning. A particular musical work would be granted the status of making sense when its form, a kind of *macro* resultant of the organization of smaller musical *objects*, is organized coherently—with the models and paradigms proposed by the formalist tradition (Kirby, 2017).

³ *uma configuração que distingue um objeto — ou um complexo de objetos — ao separá-lo de um fundo indiferenciado.*

Notwithstanding the above theoretical vision, the formalists include perception in their ideas of how music makes sense. Some famous authors have acknowledged that even the most intricate musical forms should *make sense* when experienced through listening. Arnold Schoenberg pointed out that repetition, reiteration of musical ideas in the course of listening, among other things, are essential to achieve coherence and, therefore, meaning in music (Schoenberg, 1950, p. 147). Leonard B. Meyer believed that some musical structures would create expectations of possible continuations to an ideal listener and that these expectations *are* the actual musical meaning (Meyer, 1956, p. 35). Even feelings and emotions are said to be evoked by these same musical structures (Berry, 1987, p. 4), although, as we've seen before, Hanslick rejected these emotional aspects of music listening. However, listening, even for formalists, with their argumentation in favor of a *music-by-music* understanding, is precisely what seems to be a kind of vehicle that "takes music" to its "decoder," and only then, the musical form comes to be (Cook, 1994, p. 116).

Anyhow, the formalist tradition closes a circle upon itself: it aims to explain, purely by musical elements, structures, and techniques, a type of music called "absolute" — a music made to be strictly musical, with no extra-musical elements or presumptions. And this circle is well-defined in its paradigm of production. We have a composer who writes down the music and then gives it to a performer who will read his instructions to restore the written music to its sonic nature. So, the music "comes" from the composer's imagination and is materialized in the form of the music sheet. In this scenario, there is no music without writing. It is through the music sheet that the composer's imagination reaches the audience through a performer who reads out all the composer's instructions on *how to make a particular musical work come to be in the ears of the listeners*. It is no wonder that writing is often the pointed element of distinction between "classical" music and any other, primarily improvised music.

The *location* of meaning

As we have already seen here, even for the formalists, the musical experience is crucial for any notion of musical meaning to be possible. However, in the formalist's view, what is experienced is a musical meaning inherent to the musical form. The structural configuration of the internal elements of the music *is* the musical meaning, which is what the music means. And suppose the musical form, as a result of the coherence of several more minor musical elements, is the musical meaning. In that case, the form must represent the meaning that presents itself *as* the meaning.

Given the importance of the music sheet in the context of the Western European music tradition as a means of "communicating" the music from the composer's imagination to the performer and finally to the audience, we could presume that the music sheet would stand for an "original musical object," the musical work itself. This type of relationship is similar to a philosophical idea of the secondary nature of writing about speech. The voice is considered the first representative, the closest to the realm of thoughts and ideas, and writing is the next level of representation, referring to the voice (Mota, 1997, p. 293). This metaphysical pair — *speech/writing* — as a pair of opposites in terms of their importance concerning ideal "originals", was the main focus of Jacques Derrida's critique of the *metaphysics of presence* (Derrida, 1973). According to Mota (1997, p. 292), Derrida started, curiously, with one of the great adopters of the metaphysics of presence in linguistics — Ferdinand de Saussure:

For us, it is not to be confused with language; it is only a determined and essential part of it, it is true. It is both a social product of the faculty of language and a set of necessary conventions adopted by the social body to allow the exercise of this faculty in individuals. Taken as a whole, language is multifaceted and heterogeneous; straddling several domains, at the same time physical, physiological, and psychic, it still belongs to the individual domain and to the social domain; it does not allow itself to be classified in any category of human facts, because one does not know how to accurately measure its unity⁴. (Saussure, [1916] 1995, p. 25)

In Saussure's vision, writing and language (or speech) are separate things, in conformity with the opposite pairs in the metaphysics of presence. To Derrida, they are inseparable parts of the same continuum that *appears* to be two things in a dynamic and endless linked chain of representations. Therefore, there are no "originals"; everything is a representation of a representation. Writing *is not* a representation of the speech because the speech is *also a representation*. Derrida referred to this continuing interplay of updates of the representations as the *trail*: "there is no symbol and sign, only a *becoming* of the symbol" (Derrida, 1973, p. 58). Inverting the pair speech/writing, Derrida proposed the understanding of the speech as a kind of writing:

Then one sees that what had been banished, the outlaw wanderer of linguistics, never ceased to pursue language as its first and most intimate possibility. So, something is inscribed in the Saussurean discourse, which has never been said and which is nothing but writing itself as the origin of language⁵. (Derrida, 1973, p. 53)

⁴ *Pour nous elle ne se confond pas avec le langage; elle n'en est qu'une partie déterminée, essentielle, il est vrai. C'est à la fois un produit social de la faculté du langage et un ensemble de conventions nécessaires, adoptées par le corps social pour permettre l'exercice de cette faculté chez les individus. Pris dans son tout, le langage est multiforme et hétéroclite; à cheval sur plusieurs domaines, à la fois physique, physiologique et psychique, il appartient encore au domaine individuel et au domaine social; il ne se laisse classer dans aucune catégorie des faits humains, parce qu'on ne sait comment dégager son unité.*

⁵ *Então percebe-se que o que havia sido desterrado, o errante proscrito da linguística, nunca deixou de perseguir a linguagem como sua primeira e mais íntima possibilidade. Então, algo se inscreve no discurso saussuriano, que nunca foi dito e que não é senão a própria escritura como origem da linguagem.*

To make a differentiation between *writing* in the usual sense and *writing* according to his theory, Derrida refers to the broadening sense of the word as a kind of filter of ideas, the conditioner of thoughts that precedes writing in the original meaning and even makes it possible by using the term *scripture* or *arch-scripture*.

In taking Derrida's theory to the scope of music, the Western musical creative process (*composer*→*music sheet*→*performer*→*audience*) is brought to light to a whole new meaning. If there is no "original" musical work that is represented anywhere, if the composer's inspirations or ideas are not an original musical work to be represented on a music sheet, there is also no place we could pinpoint meaning as traditionally described, neither in musical form nor in any other musical element. So we are left with musical meaning as something beyond localization, transcending musical form or the music sheet. If it cannot be "placed" anywhere, but it is a representation of a representation, as in Derrida's trail, what is the musical meaning? This is a question I think is best addressed through studies in cognitive theories.

Cognitive musical meaning

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When someone says that a piece of music they have just listened to makes sense, unless we are talking about Leonard Meyer's ideal listener, it would hardly be because this person grasped the *inner workings* of the musical form. Instead, we may interpret this statement as evidence that this person has just had a pleasant *experience* listening to a particular music (Kivy, 2007, pp. 144–146). And what about the opposite experience, when someone says that a piece of music makes *no* sense? We could infer that it means this person did not have a pleasant musical experience. Musical meaning is not just a pleasant or unpleasant feeling that comes over us while listening to music. Deeper processes are happening on the human cognitive apparatus that, on a closer look, can provide a more suitable and convincing explanation of musical meaning, or meaning in general for that matter⁶.

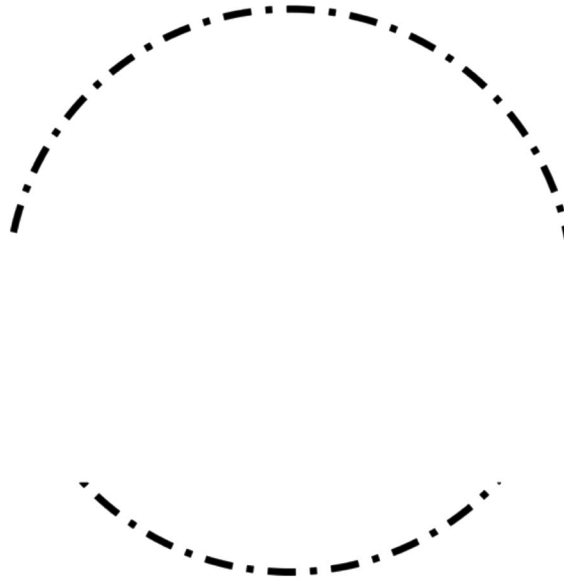
Musical experience, or any other experience, is an interactive process between an agent and his environment that results in mutual influences, the way knowledge is constructed (Dewey, 1986). The previous ones influence these experiences and ultimately change how an individual will undergo others in the future, conjugating objective conditions of the environment with subjective aspects of the individual (Dewey, 1997, pp. 35, 42). When we experience music, there are unconscious and inevitable processes taking place in our brains that are crucial in shaping our experiences. One of the most critical processes is the brain's "impulse" to

⁶ An important reminder here: I'm not talking about linguistic meaning exclusively, that would narrow our subject here and even incur this endeavor of investigating the musical meaning into an equivocated path. (Johnson, 2007).

look for the most straightforward patterns possible (Larson, 2012, p. 33). It is a creative impulse; the brain not only identifies these patterns but infers them where there are none and completes patterns that happen to be incomplete. What is the first thing that comes to mind when you look at Figure 1?

Figure 1

Example of the brain's creativity in completing patterns.



I'm pretty sure you did not think "square" or "microwave oven," but most certainly, you thought "that is a circle," or at least something that resembles a circle. And surely you did not think, "that is an incomplete circle" or even a partial circle with weird intricate lines on the sides under the white stripe — but just a circle. It is possible to "see" a full circle, even though there is a sort of stripe in front of it. Our brain "completes" the pattern, and we infer it is a circle, even if we can't see it. This creative search for patterns is so powerful that even when there is no pattern, our brains create one. For example, people identify shapes and figures in the clouds.

In Larson's conception of meaning, when an individual experiences musical events, they may do so "as reflecting the patterns of our intellectual, emotional, imaginative, and kinesthetic lives... as 'expressive meaning'" (Larson, 2012, p. 36). These reflections are what the enactionist cognitive sciences call *embodied mind*: a model of body and mind as parts of the same whole that, being so, conditions and determines an individual's experiences (Johnson, 2013; Lakoff & Johnson, 1999; Rosch et al., 1993, p. 205). According to this model, all meaning we experience in our interactions with the environment (including music) is based on our bodily interactions, directly or not. When these interactions occur indirectly, our minds import physically

produced meanings to more abstract realms through *metaphorical projections*. Metaphors are in no way a tool for rhetoric or poetics only; they are fundamental to our construction of knowledge. We make sense of abstract experiences through metaphors, unconsciously⁷ importing knowledge through metaphorical projections from our essential corporeal experiences with the environment (Lakoff & Johnson, 2008, pp. 56-57).

For example, the concepts OBJECT, SUBSTANCE, and CONTAINER emerge directly. We experience ourselves as entities, separate from the rest of the world — as containers with an inside and an outside. We also experience things external to us as entities — often also as containers with insides and outsides. We experience ourselves as being made up of substances — e.g., flesh and bone — and external objects as made up of various kinds of substance — wood, stone, metal, etc. We experience many things, through sight and touch, as having distinct boundaries, and, when things have no distinct boundaries, we often project boundaries upon them — conceptualizing them as entities and often as containers (for example, forests, clearings, clouds, etc.) (Lakoff & Johnson, 2008, p.58).

When we speak of *musical meaning*, we refer to a musical experience in which our brain retrieved and processed patterns⁸ from listening. These patterns may make sense for us through metaphorical projections from our bodily experiences of interactions with our environment or by means of cultural conventions we learn throughout our lives⁹.

Music "exists" at the intersection of organized sounds with our sensory-motor apparatus, our bodies, our brains, our cultural values and practices, our musichistorical conventions, our prior experiences, and a host of other social and cultural factors. (Larson, 2012, p. 78)

The process of "making sense" of a music piece, or music meaning formation, is not dissociated from the musical experience. There is no *experience* disconnected from the *understanding* of it. The musical meaning is embedded in the very musical experience. And all the meanings we may experience in music come from metaphorical projections from bodily experiences with the world around us. We talk

⁷ A small portion of our semantic production is actually processed consciously by means of the *working memory* or *short-term memory*. These two terms are often used interchangeably, albeit some authors do make some distinction between them. For those among the scholars who make the distinction, *short-term memory* represents a temporary storage function, and *working memory* is used to refer to a process that temporarily storage information and also process it (Baddeley, 2012, p. 4). Working memory is also defined as human memory's main process of planning, problem solution and reasoning (Baddeley, 2013; Schulze and Koelsch, 2012, p. 229; Reuland, 2010, p. S99).

⁸ It is possible that the brain may be incapable of grasping any pattern at all. Or that the patterns, if they exist, are beyond the brain's capability for processing. In those cases, the music will *not* make sense to the listener. It may very well make sense for an music analyst in possession of the music sheet that visually look over the techniques that may have been deployed in composing the musical work in question. But ultimately, these techniques may be unachievable by human brain's capacities: "the progression of sounds may have a sequential structure in the mind of the composer, that a written score may also show a sequential structure, but that there may be no such coherence in the mind of the listener" (Bregman, 1994, p. 458).

⁹ Bregman describes two types of auditory perception: (1) those inherent to human beings as a species, the way we perceive sounds in the environment independent of cultural factors (primitive stream segregation), and (2) those which we learn through life, our cultures (schema-based stream segregation)(Bregman, 1994, p. 38).

about how melodies go "up" and "down" as if the tones were natural physical objects in an actual physical world where we could define up and down. But the truth is that there is nothing exactly going up or down in music; we transfer these concepts to discourse about music because they are an essential part of our existence on Earth, where we are subjected to its gravity pull on us that defines our biology and gives us the experience of falling — moving from a higher place to a lower one, thus giving us the very notion of up and down. We also talk about "tension" and "relief," tones and chords that "need" or "want relief." Where this comes from, if not from our experience with our body muscles that, when tensed, at some point must have to relax, generating a feeling of relief that is always proportional to how long the muscles were contracted.

We are always talking in metaphors when the subject is music; metaphors are there because we experience the world in terms of concrete and abstract matters. There is only "being" because we experience objects that "are." The meaning we experience with concrete things is real because the experience is corporal. So, everything that is abstract must be understood from the concrete. Music is abstract, and we deal with it as an object; therefore, we must transfer the meanings we have already produced with the concrete dimension of our bodily experiences to understand music and make sense of it. This is a metaphorical projection ruled by schemas shared by the experience of something concrete and the musical experience. Thus, coherence in music and its meaning can be understood as an experience that originates in metaphorical projections arising from the interaction between the listener and music. This explosion of "form" in music indicates the manifestation of the mental ordering of the musical flow in patterns. And so we attribute meanings to this experience coherent with those previously constituted in our sensorimotor experiences.

Final considerations

My objective here is not to point to the formalist definition of meaning presented as an emergent musical form property as wrong or outdated. Even though, in some cases, it may not be reachable by our brain's capacities through listening, and it may be necessary to have access to a music sheet to see the musical form written to understand it, that doesn't mean the formalist tradition should be disposed of or dismissed as equivocated. Especially in pedagogical environments of composition teaching or even to develop a better insight into a repertoire for performers, knowing musical forms, their inner elements, and their workings can be highly beneficial. However, I aim to understand musical meaning in tandem with perception. As described previously, there are limits to the brain's capacities for grasping meaning through

perception, and there is a specific way in which the brain does perceive meaning. According to embodied cognitive science scholars, how we produce knowledge through bodily interactions with our environments and the metaphorical projections we employ to make sense of more abstract experiences are fundamental to all our mental processes, including meaning formation. As abstract as music is, there is no other way to understand it than through metaphorical projections. This explains why we talk about music the way we do and always use metaphors to refer to it — we are importing meaning from concrete experiences into the abstractions of music. Therefore, in terms of perception, musical meaning is an experience. According to Derrida, it takes place during the musical experience itself and is conditioned by our *scripturability*. Everything that we are, all our previous experiences, our cultures, all of these conditions define future experiences and, therefore, our processes of meaning formation.

So, what is the musical cognitive meaning proposed here? It is the result of our encounter with music through listening, generating a musical experience in which our brain decodes what we are hearing into processable patterns — and we simultaneously and unconsciously conceptualize it in terms of metaphors drawn from previous bodily experiences with the world.

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