Movement in Music
An Enactive Account of the Dynamic Qualities of Music

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ABSTRACT

In this paper I shall attempt to give an enactive account of the dynamic qualities of music. Starting from Krueger's account of musical experience, I will highlight how music's *qualities of movement* are constituted in the horizon of an embodied consciousness – that is, an embodied subject who can virtually or actually bodily entrain with music and then follow the musical profile. I will argue that the common *rythmòs*-structure of both music and movement makes such an enactive constitution possible. In this sense, the perception of music's *rythmòs* – that is, the perception of its *teleological tendency* – will turn out to be the condition of possibility for the enaction of music dynamic qualities. But if so, music's quality of being *teleologically-structured* will remain unexplained by the discussed enactive account and will need another description of how it is constituted in the horizon of consciousness.

1. Introduction

Music *moves* us, both emotionally and physically. We do have affective responses to music, as in cases in which we feel relaxed, excited, or even anxious while listening to musical pieces. Likewise, we are often more or less physically drawn into music, for instance in tapping along with a rhythm or, obviously, in dancing. In moving with music we can come to bodily 'feel' its dynamism and expressive features, often having a more vivid perceptual experience than one we can have when just sitting on a chair. These phenomenological traits make

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the musical experience particularly suitable for analysis in terms of enactive perception. Krueger (2009, 2011b), for instance, enlarged on Noë's perceptual enactivism (Noë, 2004), by moving from the domain of visual perception to that of musical experience. The main idea is that, just as Noë showed the constitutive dependence of visual experience on our embodied nature and practical sensorimotor knowledge, similarly it is possible to maintain that musical experience can be actively constituted in our embodied encounter with music itself (Krueger, 2009, p. 99-100).

In this paper I will present this theoretical position, focusing then on the 'dynamic qualities' of music as enactively constituted in the horizon of an embodied consciousness. Nonetheless, I will stress that such enacted dynamic qualities are constituted on the basis of other qualitative aspects of music that cannot be accounted for in the same enactive model – being, on the contrary, the presupposed condition of possibility for the enactive constitution of music's dynamic qualities themselves. In this sense, the main idea will be that musical content can be enacted but not *all* musical qualities can be said to be enactively constituted.

2. The Enactive Proposal for Music Perception

Introducing his enactive account of musical content and experience, Krueger explicitly refers to Noë's model of visual perception (Kruger, 2009, p. 100-104; Krueger, 2011b, p. 63). According to Noë's enactive proposal, seeing is a way of exploring the world that is mediated by the perceiver's practical abilities. In this sense, «our ability to perceive not only depends on, but is constituted by, our possession of [...] sensorimotor knowledge» (Noë, 2004, p. 2). Noë notoriously defends this thesis by means of some phenomenologically compelling examples. He shows, for instance, that even though our visual experience usually seems to be fully detailed and high-resolution, we are actually able to focus on just a few details at a time. Looking at this written page, for example, we would say that it is fully written and it appears in our visual experience as uniformly detailed but, if we fix our gaze, we can actually read very few words on it. Noë's idea is that we can have the experience of seeing the world in all its details not because the latter are always perceptually focused on but because they are perceptually present in the visual field as *accessible* – that is, as reachable and explorable by looking around, moving our body or simply our eyes (Noë, 2004, p. 55-65). In another example, Noë describes the experience of

seeing an entire three-dimensional object even by just looking at some profiles at a time (Noë, 2004, p. 75-79). The idea is that this is possible because we experience the presence of the hidden profiles as those sides that can become visible if we move in one way or another. Both examples are intended to show that perceiving rests on an implicit understanding of how visual images change according to our bodily movements and what would be accessible if we move in certain ways.

Even though Noë has mainly focused on vision, he recognizes that there are specific sensorimotor contingencies between perception and movement for other sensory modalities too (Noë and O'Regan, 2001; Noë, 2004). Auditory perception, for example, implies specific sensorimotor contingencies: rotations of the head generally change the temporal asymmetry between left and right ear, movements of the head in the direction of the sound source generally affect the amplitude of the sensory input, and so on (Noë and O'Regan, 2001, p. 941). As perceivers, we develop a specific *know-how* of such sensorimotor dependencies, so that, for instance, if we are approaching the source of a heard sound we can ascribe a constant loudness to the sound itself because we have a practical understanding of the fact that loudness is changing because of our approaching. This seems to be the same mechanism that allows a sequence of gradually softer sounds to convey the effect of something moving away. In this sense, we have a practical and implicit understanding of the way auditory perception is affected by our movements.

Moreover, just like vision, auditory perception appears to be egocentrically located. In developing his enactive account, Krueger (2011b) stresses that sounds are connoted as spatialized *around us*, so that our embodied position in space turns out to be a condition of possibility for such a connotation. In other terms, our body proves to be the zero-point of orientation for auditory objects as well as for visual ones. Additionally, location seems to be directly perceivable in sounds. Phenomenologically speaking, we generally perceive sounds *as* located somewhere in relation to us. We do not perceive un-located sounds and then try to make inferences about the direction they come from. Obviously, this can happen sometimes, but it does not seem to be the most frequent case.[1]

However, far from being concerned just with the analysis of auditory experience in general, Krueger is interested in particular in developing an enactive account of *music* perception. Indeed, he has come to maintain that

[1] For a brief outline and some references about the debate on this point see Krueger (2011b).

music perception can be a form of *active* perception – that is, a form of exploration, manipulation and drawing out of specific musical properties via our sensorimotor engagement with music (Krueger, 2009, p. 107). This is what happens, according to the author, in episodes of 'deep listening'.

Deep listening is the experience of listening attentively and selectively to a piece of music. As Krueger says,

> It is an immersive form of listening in which the subject *selectively orients* herself to a piece of music by actively attending to its various sound features and their interrelationships – while simultaneously maintaining a state of affective receptivity, or a readiness-to-be-moved, by what is happening sonically in the music. Deep listening is thus a transactive mode of listening involving 'processes such as *exploring*, *selecting*, *modifying*, and *focusing of attention*' [...] (Krueger, 2011b, p. 71)

In this sense, deep listening is very different from any kind of involuntary or passive modes of hearing, such as being aware of background music without attentively focusing on it.

Now, Krueger's thesis is that in deep listening we engage in an active exploration of the musical piece's *inner space*. Such an inner space is the piece's internal compositional structure – that is, "the systematic way that the elements of a musical piece's syntax hang together (i.e., how components like individual tones and rhythmic progression are arranged in prefigured spatial relations with one another, lending the piece its sonic coherence)" (Krueger, 2009, p. 118). So, the idea is that our perceptual experience is at least partly defined by the way we actively engage with such a musical space.

> When we listen to music, we for the most part automatically perceive the piece's internal spatial configuration. This is what it means to listen to music understandingly, to hear it as music and not as random noise. But deep listening is enacted when the listening self is experienced as coming to *inhabit* this structure. [...] this experiential inhabitation is not simply a perception of form, then, but is additionally an *entering into* the form – a piece's internal space, once again – so that the listener might actively explore its sonic topography (Krueger, 2009, p. 118)

Krueger's main thesis seems to be that in experiences such as listening sensitively to music we can somehow (virtually or actually) *interact* with the musical piece, for instance by entraining with its rhythm or being affectively and bodily moved by its melodic or harmonic contour. By means of this active engagement with the piece, our perceptual experience can be somehow

augmented, since we can come to bodily feel and perceptually focus on many different musical aspects.

In this framework, our body obviously has a fundamental role.

> [...] bodily movements such as gently swaying back and forth, bobbing one's head, tapping fingers and toes, and of course dancing [...] modulate our perception of the spatial content of musical experience by modulating our relation to different features of the music, such as metre and melody. Bodily gestures in response to musical events can act as a kind of attentional focusing: the animate body, by interactively engaging with the piece, becomes a vehicle for voluntarily drawing out certain features of the piece, such as rhythmic beats or the progression of a melodic contour, by foregrounding them in our attentional field. This 'drawing out' is an enactive and exploratory gesture in response to felt affordances within the music. The listener perceives the inner space of the piece as a space that can be entered into, experientially, and by doing just this shapes how the experiential content of the piece-as-given becomes phenomenally manifest. We thus hear what the body feels (Philips-Silver and Trainor, 2007). And what the body feels are sensorimotor contingencies – possibilities for rhythmic interaction and perceptual exploration that determine the character and content of musical experience (Krueger, 2011b, p. 73-74)

In other terms, perceptual experiences such as deep listening are actual episodes of active engagement with music. The different modes of such an active engagement at least partly define the character and content of the musical experience, since bodily entrainment acts as a vehicle to appreciate and pay attention to specific musical *affordances*.

Starting from the Gibsonian notion (Gibson, 1979), Krueger maintains that music offers several *affordances* for movement in particular: indeed, music presents a sonic profile that invites a synchronous and sustained motor engagement. Obviously, such an active engagement can occur in many different degrees. Dance is maybe one of the highest and most complete ways.

> Dancing is a robustly embodied response to musical events. Moreover, it is the enactment of an attentional focusing that shapes how and what we hear. Via dancing, the temporal regularities of melodic and rhythmical patterns within the music are physicalized within an array of bodily movements. And the coordination between sonic pattern and bodily movement – an instance of bodily entrainment – is an enactive gesture, a perceptual exploration of the piece's sonic topography (Krueger, 2011b, p. 75)

The idea is that active engagement with music is both a way of responding to musical affordances and of focusing on certain aspects, thus enhancing one's own experience and somehow shaping it.

Moreover, far from being just a high-level and skillful approach to music, active engagement is a very widespread phenomenon. Very young children seem to perceive music as presenting a well-structured exploratory profile that invites bodily entrainment (Krueger, 2011a, 2013). They do not do so having some conceptual, propositional representations of music affordances, but rather actively engaging and interacting with the sonic world, exploring it and discovering what it allows or not in terms of entrainment and bodily synchronization. Active engagement with music, therefore, seems to be one of the primary ways we perceptually experience music and it turns out to help us extracting the various meanings that music can have for us. Our experience, therefore, can be said to be at least partially defined by the way we can bodily interact with music itself.[2] Of course, this does not mean that this is the only way we can perceptually experience music. We can surely have a more detached approach to it – for instance, when we listen to music inattentively or when we are just theoretically interested in analyzing its compositional structure. But the crucial point here is just that our bodily entrainment with music is a kind of active engagement that *can* have a central role in shaping musical experience and musical content.

3. The Dynamic Qualities of Music

In my view, there is a group of musical qualities that can be fruitfully accounted for in an enactive approach. I will call them 'dynamic qualities', where the adjective 'dynamic' does not strictly refer to the academic notion of 'musical dynamics' – i.e. the indication of the loudness of sounds (*piano, mezzoforte, forte*, etc.) – but more generally to the idea of movement.

In order to better explain what I mean by this term, I will refer to Mark Johnson's analysis of music and musical meanings (Johnson, 2007). In his *The Meaning of the Body* (2007), Johnson stresses that music has a strong embodied nature both because it is often bodily felt much more than just theoretically

[2] There are many other theories today that try to appreciate the role of the acting body in music perception, both from an empirical, psychological point of view and from a philosophical one. See for example Iyer 2004; Molnar-Szakacs and Overy 2006, 2009; Pelinski 2005; Peñalba Acitores 2011.

represented, and because many of its meanings are grounded in our bodily encounter with the world (Johnson, 2007, p. 254). In particular, there is a huge group of musical meanings that find their foundation in our experience of movement and self-motion (Johnson, 2007, p. 243-262). These meanings are the ones that lead us to experience music as if it were *in movement*. To give some examples, Johnson recalls how we often describe music and the way we perceive it. We say that a sequence of sounds *rises* or *falls*, or that one note *jumps* to another. We say that the leading tone displays the tendency to *move towards* the tonic, while the tonic shows no tension and acts as a *resting* point. In the same sense, we say that a cadence is *suspended* when it does not *move* to the tonic. We also talk of *fast* or *slow* tempos and we can define a musical piece as a *dance* or a *gallop* on the basis of its rhythm and metrical structure. In other terms, according to Johnson, «we experience and understand a musical piece as an *extended motion*» (Johnson, 2007, p. 243).

All these musical aspects are at the basis of what I call 'dynamic qualities', which are indeed those *qualities of movement* that music displays.

However, there are a couple of points that need to be considered here for a better understanding. First of all, it could be argued that Johnson has just considered some *metaphorical* ways in which we often *talk* about music, and that this has nothing to do with actual perception. Indeed, there is no *real* movement in music, there is nothing in music experiences that really moves, neither the music itself nor the listener. Moreover, there is no *real* space in which such a movement can take place.

Actually, there is a very interesting debate about such topics in the theoretical literature on music and musical movement. Is musical movement real, fictional or just metaphorical? And, if it is somehow real, *whose* is this movement? How can we define the space where it actually takes place? (Clarke, 2005; Shove and Repp, 1995; Scruton 1997). However, this debate is orthogonal to my analysis and, I would also maintain, to Johnson's. The interesting point for me (and Johnson) is that we generally *experience* – that is, we have a *perceptual sense* of – movement when listening to music, whether such a movement is real or not. In other terms, the idea is that we at least perceive musical flow *as if* it had a particular motion-connotation. This does not even mean that we *always* perceive music this way. It just means that we *can*, and sometimes do.

The other crucial point here is that, *phenomenologically speaking*, this sense of movement is indeed a perceptual sense. It is not just that we theoretically

represent or conceptualize music as 'in movement'. We can actually *experience* musical movement in the act of listening, and it is this experienced sense of motion that makes our linguistic metaphors so strongly evocative and appropriate. Obviously, our very experience of musical motion can be shaped by more sophisticated linguistic metaphors but this does not mean that, therefore, we cannot actually have a perceptual sense of such movement. If this is so, musical dynamic qualities can be experienced in perception itself. As Johnson says talking about the image schemas of movement,

> We do not merely project (imaginatively) these image schemas onto music, any more than we project them onto our ordinarily bodily experience of motion. Rather, such image schemas actually constitute the structure and define the quality of our musical *experience*. They are in and of the music *as experienced*; they *are* the structure of the music. (Johnson, 2007, p. 258) (italics mine)

Now, how are such qualities constituted in the horizon of consciousness? In my view, the enactive account can be a fruitful model to answer this question.[3]

The idea is that dynamic qualities in music emerge as such because they are constituted in the horizon of an embodied consciousness, that is an embodied subject who can virtually or actually bodily entrain and then follow the musical profile. In other terms, as Krueger would say, we can grasp what the sonic profile affords us in terms of movement and then discover how music itself invites us to follow it in its own development. In this sense, we can grasp musical movement and then conceptualize it as such because we are embodied beings who are able to bodily follow that movement. This does not mean that we always have the same motor response to music or that music has such and such dynamic qualities because of the motor response it elicits in us. On the contrary, we can engage with music in a number of different ways (not only we can make different kinds of movement, such as tapping fingers, bouncing, bobbing our heads, but we can also choose, for instance, to move our body every two or three beats, to tap on the upbeat instead of the downbeat, and so on). The interesting point, therefore, is that music has its own movement which emerges as such because, as embodied beings, we *can* follow it in its profile, not because music always makes us move in such and such a way. In this sense musical movement is enacted: it is so because it emerges at the *phenomenological interface* with a subject that can bodily interact with it as something that moves.

[3] It is not possible to discuss here Johnson's own answer. To examine it, see Johnson 2007, 235-262.

As enacted contents, musical movement and dynamic qualities are not merely projected onto music. In the same way as a chair is *to sit-on* not because we project such an affordance on it but because of its structure in relation to us, our body and our motor-practical abilities (Gibson, 1979; Krueger, 2014), so music has dynamic qualities because of its own structure in relation to our bodily ability to entrain with it. We can perceive musical movement because we are embodied subjects who can spatiotemporally track that movement with their own movement, in the same way as we can perceive physical movement because we have a specific embodied and kinesthetic relation to objects in movement in space (Husserl, 1973; Zahavi 1994). The fact that physical movement is constituted in our consciousness thanks to our embodied nature does not mean that it is *projected* onto the external physical reality.

However, there is a further point to face here. If we can say that dynamic musical qualities are enacted by our virtual or actual motor engagement, what is exactly that we track with our movement in music? Which are those music features that afford our movement? It seems that we already need to perceptually recognize a musical structure that allows our bodily entrainment in order for the enactive constitution of dynamic qualities to take place. Music cannot be random or unstructured noise: in my view, its perceptual profile needs to have at least one quality that is the precondition of the enactment of dynamic qualities themselves. But, if so, such a quality will remain unexplained by the present enactive account.

4. *Rythmòs* and the Foundation of the Enactive Account of the Dynamic Qualities of Music[4]

Criticizing theory-theories and simulation-theories as reliable explanations of how we understand others, their actions, and their intentions, Gallagher and Zahavi (2008) refer to Scheler's criticisms against the argument from analogy that tries to explain intersubjectivity (Scheler, 1923). In a nutshell, according to the argument from analogy, the only mind I can have direct access to is my own. Contrariwise, I can have only an indirect access to the minds of others: since I know that in my case such and such experiences occur together with such and such bodily manifestations, then, when I see that others have *similar* bodily manifestations I infer that they might be undergoing experiences similar to my

[4] Materials from this paragraph have been previously published in Forlè and Perani (2013).

own. However, so Scheler's criticism runs, if I need to see a similarity between my laughing and the laughing of somebody else I need to understand the other's bodily gestures as expressive phenomena (for instance, as manifestations of joy) and not simply as physical phenomena. But if this is so, the argument presupposes what it intends to explain, that is, our ability to understand others as minded and expressive beings (Scheler, 1923, p. 225-227; Gallagher and Zahavi, 2008, p. 181-182).

Now, I believe that something similar can be said about the enaction of musical dynamic qualities. In order for us to be able to virtually or actually track musical movement with our own movement we already need to perceive the music profile as *explorable* – that is, as qualified in such a way as to afford bodily tracking. In other terms, as I said, music cannot be random noise or an unstructured juxtaposition of notes: on the contrary, its perceptual profile needs to show at least one qualitative aspect that has to be already perceived in order for us to be able to enact musical content. But, if so, such a qualitative aspect cannot be explained by the same enactive model.

Now, what is this qualitative aspect exactly? Let us start answering this question by considering the phenomenological constitution of a musical percept.

Music is constituted through *time*. Even though many other objects, such as all material things, exist *in* time and *through* time, music seems to show an entirely different relationship with the temporal dimension. As Piana underlines in his *Filosofia della musica* (Piana, 1991), in fact, music appears as a *process* and its duration in time clearly reveals itself in its perceptual appearances: it is not just the case that music and sounds are in time – because all other material things are – but their being in time appears experientially as *passing*.

It is worth noticing that this *passing* appears as the sequence of the phases of *one single* phenomenon. The melody, in fact, is not just the static juxtaposition of sounds but emerges from the perceived *relationships* between the notes. In this way, perceiving a melody means in a certain sense perceiving the sequence of notes as the *transition* from one sound to another.

Now, such a transition of sounds is perceptually organized according to the scheme of *impulse* and *relaxation*, *opening* and *closure*, *protention* and *fulfillment*. This scheme is particularly widespread in music and makes some notes sound as *in tension* to others (Piana, 1991, p. 173).

If this is so, far from being just a sequence of sounds in which there is no actual articulation but a mere juxtaposition of notes that we can arbitrarily

choose to group as we prefer, the musical perceptual course appears on the contrary as an *organized* unity that requires a *closure* when something has been previously perceived as an *opening* (Zhok, 2012, p. 133). As Plessner says in his *Zur Anthropologie der Musik*, in a musical piece sounds appear as *impulses* for what comes next and therefore the peculiar character of having a *direction*, an open connection to something else, is motivated by the sounds themselves (Plessner, 1951, p. 146-150). This peculiarity of sounds and music emerges in particular if we compare the auditory percepts with some *visual* ones, such as figures and colors. Even though presented one after the other in a temporal sequence, the colors that come first do not have a specific *intrinsic tendency* to the ones that come next. This clearly appears, for instance, comparing this case with the tendency of the leading tone to the tonic in a diatonic scale. As Dufrenne would say, colors and figures have a prominent *spatial* character, even though they can obviously be arranged in a temporal sequence[5] (Dufrenne, 1953, p. 331-341). On the contrary, because of its prominent *temporal* character, music is constituted as a sequence of organized unities where what comes first shows a *teleological tendency* towards what comes next.

The appearance of *teleological tendencies* between sounds in music is often based on quantitative relations (e.g. the tendency of a *forte* to a *piano* is based on the quantifiable loudness of sounds) but, as actual *tendency*, this aspect emerges at the phenomenological level as a *qualitative* aspect of music. In order to better understand this quality and to show how pervasive it is not just in music but in many other domains, I will refer to it by means of Zhok's notion of *rythmòs*. In my account, therefore, *rythmòs* has to be considered as a synonym for what I have so far referred to as 'teleological tendency'.

According to Zhok, *rythmòs* refers to the organized structure of perceptual reality which allows us to recognize and anticipate the perceptual diachronic course. A bouncing ball, a musical rhythm, a collapsing scree present typical *rythmòs*-traits that allow us to follow the perceptual course and have motivated expectations about the way such perceptual phenomena will develop. In this sense, *rythmòs* implies regularity, even though in a minimal way: indeed, *rythmòs* emerges when there is the possibility of recognizing even a minimal rule of development, which allows the anticipation of a dynamical style (Zhok, 2012, p. 130).

[5] On the difference between spatial and temporal arts in Mikel Dufrenne, see Dufrenne (1953), p. 331-341.

Rythmòs is a much wider notion than the ordinary (musical) notion of rhythm. While the latter refers to a pattern of temporal intervals with specific and quantifiable relationships between accented and un-accented beats (e.g. binary or ternary rhythms, dotted rhythms, and so on), the former refers to a more general structure with a recognizable and somehow predictable style. Temporal organization is just one of the aspects of *rythmòs*. What actually characterizes *rythmòs* more specifically is the fact that *rythmòs*-occurrences show an internal teleological organization: each *rythmic* percept emerges as an organized unity that requires a closure when something has been previously perceived as an opening. In this sense, a musical piece is characterized by a specific *rythmòs*-style that does not rely just on the piece's rhythm, but depends also on the specific teleological tendencies between intensity differences (e.g. a 'forte'-dynamic which drops to a 'piano'-dynamic) or harmonic relationships (e.g. the leading tone which tends to the tonic in a diatonic scale).

Since *rythmòs* is a general structure of impulse and relaxation, many different phenomena can show *rythmòs*-traits: there are teleological tendencies in a bouncing ball, in a collapsing scree, in the dynamical style of a zig-zag line, and so on. Now, such teleological tendencies contribute to giving phenomena an appearance of vitality, so that according to Zhok any occurrence of *rythmòs* shows an expressive, dynamical dimension (Zhok, 2012, p. 131). Zhok refers here to Köhler's (1929) "tertiary qualities" as those physiognomic, expressive qualities that even inanimate things can have: we can say that the movements of a dancer are graceful or that the walking-style of a person is clumsy, but we can also metaphorically say that the course of a line is elegant or that a musical rhythm is nervous and anxious. The idea is that the 'opening-closure' teleological structure of *rythmòs* is able to confer on phenomena (at least) an appearance of vitality and expressivity: indeed, actual animated phenomena such as human actions or gestures are characterized by expressive teleological directions.

All the mentioned examples of *rythmòs* occurrences concur to highlight another fundamental point. *Rythmòs* can be shared by so many different phenomena because it is a transmodal structure. *Rythmòs* occurrences can be seen, heard, or even bodily exemplified. According to Zhok, this is a particularly interesting feature since it can motivate the constitution of a transmodal perceptual reality. We are able to recognize an object as the same one even though we experience it first only by sight, then only by touch. This seems to be a primary ability of ours. Meltzoff and Borton (1979), for instance, show that

one-month old infants seem to visually recognize a pacifier they previously had just sucked. The hypothesis is that even very young children, as adults, can recognize the same *rythmic* perceptual course by touch and sight: when exploring an object by sight we can apprehend its profile, developing and 'fulfilling' specific expectations about the *rythmic* style of the perceptual course; when exploring the same object by touch we can perceive the same style again, even though through a different modality. In this sense, we can come to the constitution of one single, external, and stable perceptual reality, which can be explored through different sensory modalities (Zhok, 2012, p. 97-129).

Now, this characterization of *rythmòs*, and particularly the last aspect mentioned (i.e. transmodality) is crucial for my analysis. Recall the question we left unanswered. Which aspect of music allows bodily interaction and the enactive constitution of the dynamic qualities of music? In my view, the qualitative dimension of *rythmòs* plays this role, since it is a common phenomenological trait of both music and movement and, when perceived, it makes music something we can entrain with.

Indeed, considering *rythmòs* as a pattern of teleological relationships between impulses and relaxations, openings and closures, it is easy to notice that musical *rythmic* structure has its equivalence in the structure of movement. Like music, in fact, our actions are extended in time and are organized as complex unities: they are not just sequences of unrelated movements, but organized structures in which every single movement develops with a *teleological tendency* towards what comes next. In fact, every present movement is constituted on the basis of what has preceded it and in the light of what it tends towards.

> We could say that human experience and human action are both characterized by a ubiquitous temporality. In this regard, when we look at action we can say that at any one moment the body is in some precise posture – as captured by a snapshot, for example – but that posture is a complete abstraction from the movement since in each case the body is not posturing from moment to moment, but is constantly on the way, in the flow of the movement such that the abstract postural moment only has meaning as part of that process. One could argue that *objectively speaking*, at any moment the body actually is in a specific posture. But if that postural moment is anything, it is the product of an anticipated trajectory, of where the action is heading. Furthermore, we can define that abstract postural moment only when it is already accomplished – but that means, only in retention, and as an end point of what had been a movement characterized primarily by anticipation (Gallagher and Zahavi, 2014, p. 93)

The common phenomenological structure between music and movement allows our (virtual or actual) *bodily interaction* with the musical profile and allows the enaction of music's dynamic qualities. As in the case of expressivity for intersubjective recognition, music needs to be *already perceived* as expressive of teleological tendencies between sounds (i.e. sounds linked together in a temporally-extended coherent percept) in order for the enactive process to take place. In fact, we can only bodily entrain with auditory phenomena that are perceived as temporally extended wholes with a somehow predictable style of development that can be actively engaged with (we do not entrain with random sounds that are not perceived as parts of the same auditory course[6]). But to be perceived as a whole, sounds need to be perceived as related to each other – that is, as linked by teleological tendencies from one to the other. If so, music dynamic qualities can be enacted thanks to the fact that music perceptually appears as *teleologically* structured.

However, if this is the case, music's quality of being teleologically-connoted remains unexplained by the present enactive account. Rather, such a quality turns out to be the presupposed condition of possibility for the enactive constitution of dynamic qualities.[7]

In this sense, a different account of how music's teleological tendencies are constituted in the horizon of consciousness is needed. But that is the topic of another paper.

5. Conclusion

Musical content can be enacted but not all musical qualities can. In this paper I have tried to propose an enactive account of the dynamic qualities of music. Starting from Krueger's account of musical experience I have tried to highlight how music's *qualities of movement* are constituted in the horizon of an embodied consciousness – that is, an embodied subject who can virtually or actually bodily entrain with music and then follow the musical profile. I have argued that this is possible thanks to the common *rythmòs*-structure of both

[6] On this point see Krueger (2011a).

[7] Actually, as I stated at the beginning of this paper, the enactive model I am referring to here is Noë (and Krueger)'s sensorimotor one. Therefore, since there are and can be several other enactive accounts of perception and cognition (e.g., Varela, Thompson, and Rosch 1991; Hutto 2005; De Jeagher and di Paolo 2007) I am not claiming here that music's quality of being teleologically-structured cannot be accounted for by *any* enactive account, but just by Noë's one. I am grateful to one of the editors of this volume for letting me make this point more explicit.

music and movement. Such a structure needs to be perceived in music in order for us to entrain with music and for dynamic qualities to be enacted. Therefore, music's quality of being *teleologically-structured* turns out to be the condition of possibility for the enaction itself. But, if so, this quality remains unexplained by the present enactive account and needs another description of how it is constituted in the horizon of consciousness.

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