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Embodiment and Musical Experience

[Ramón Pelinski](#)

"Ask not what's inside your head, but what your head's inside of."
W. M. Mace (1977)

"There is more sagacity in thy body than in thy best wisdom."
(F. Nietzsche: Thus spake Zarathustra)

*"...music heard so deeply
That it is not heard at all,
But you are the music
While the music lasts."*
(T. S. Elliot "Dry Salvages" Four Quartets)

"You are nothing but a pack of neurons."
(F. Crick 1994:2)

Abstract

The main goal of this essay is to show how the human condition of embodiment is implicated in our current musical practices and discourses, informed by the pre-conceptual and pre-rational basis of habits, bodily schemata, auditory images, metaphors, etc., which in turn rely on perception as a primarily brain-body-involving neural process.

I also intend to show that embodiment plays a decisive role in the production of musical meanings. Although experienced and constituted primarily through the subjective act of intentional perception, these meanings are open to the social and natural environment with which they are actively connected.

Resumen

El objetivo de este ensayo es mostrar cómo nuestra condición humana de seres

corporalizados está imbricada en nuestra práctica musical corriente y en nuestros discursos musicales. Aunque la percepción sea principalmente un proceso cerebro-corporal, sus rasgos de preconceptualidad y prerracionalidad se extienden sobre nuestras prácticas musicales a través de hábitos motores, esquemas corporales de acción, imágenes auditivas, metáforas, etc., que no dependen de una racionalidad deliberada. La corporeidad desempeña, a su vez, un papel decisivo en la producción de significados musicales que, aunque primordialmente vividos en la experiencia musical subjetiva, están abiertos al entorno social y natural e informados por él.

Keywords:

musical embodiment, corporeality, perception, experience, linguisticity, cognitive semantics and tango, neuro-phenomenology.

1. A body turn

Until the last decades of the 20th Century talking about embodiment was an impertinence in musicology: music was mainly an act of creation, structure or aesthetic reception, in the service of such noble causes as its signification in social, political and cultural contexts.^[1] Dominant musical discourses ignored or excluded, denied or repressed manifestations of embodiment inherent in current musical practices: ‘musicking’ (Small) or listening to music were seen as disembodied activities obviously controlled by such superior instances as spirit, soul, or (if possible) pure reason.

However, cognitive processes in which corporeal capacities are constitutively implicated play a fundamental role in musical practices. Thus, learning to play a musical instrument cannot be accomplished by studying brainy theoretical treatises; rather, it is based upon developing musical (i.e. motor, aesthetic, social) abilities departing from models proposed by a teacher, and maintained by habitual practices of specific social groups. In a similar way, training allows the dancer to acquire bodily postures, steps and figures through immediate reference to the model of an instructor, of the practice of a social group, or simply of a video guide. The ability embodied in this way allows the learner to display with fluid elegance a disciplined body. Furthermore, it is thinkable that pre-rational intuition underlies the processes of improvisation and composition in actual or by writing deferred concretization. In the end, for many people life wouldn’t have much sense if they couldn’t listen to music regularly. This experience usually involves emotional states that affect the body in many different ways: from the apparent ‘absence’ of emotion in a state of ‘pure

contemplation' to its unavoidable presence when a musical emotion physically overcomes the listener.

It goes without saying that these perspectives on embodiment in musical practices are ingenuously obvious. Indeed, the neuro-physiological nature of human beings has been recognized as a possible condition of musical practices in specific ways through approaches such as phenomenology, neuro-phenomenology, neo-cognitivism, critical theory, constructionism, etc. which have left their marks on current musicology. The prominence of the body as a focus of attention in the theoretical debates of recent decades has transformed it into "one of the principal battle fields to forge an adequate critical perspective to the changing traits of contemporaneous social, political and cultural reality" (T. Turner, 1994: 31). Among these changes is the contemporary rebuff of intellectualistic paradigms, models and structures of thought, dominant in human sciences before the post-modern whirl. As a result, the emphasis of reflection has been brought back to the experiential contexts of quotidian practices in which embodiment is co-implicated.

Writing an account of this 'body turn' would require a separate enquiry. Here I will confine myself to pointing out that between the poles of rationalist dualism (Descartes, Kant) and materialist reductionism of neuroscientists like Crick (1994) or Bickle (1998, 2003) there is a vast domain of different theoretical perspectives. Thus, be it as a material object or a discursive category, the body has lent itself to contemporary theoretic reflection as, among others,

- A living platform for the acquisition of 'techniques', abilities and habits (Mauss 1936; Bourdieu 1980; Dreyfus 1996; Lloyd, 1996; Crossley 2001a);
- A docile object configured by the power of discipline (Foucault 1976);
- Endowed with senses designed to specific cultural uses (Howes 1991);
- A bearer of symbolisms and inscription site of cultural memory (Blacking 1977; Jackson 1989; Crapanzano 1996);
- The physical ground of cognitive semantics (Johnson 1987; Lakoff and Johnson 1980, 1999);
- A product of a discursive construction (Butler 1993; Pandolfi 1996);
- The site of specific domains of cultural activity and ethnography (Csordas 1994a, 1994b, 1999; De Nora, 2000; Crossley 2001b, 2002; Katz and Csordas, 2003);
- An object of cosmetic surgery (Davis 1997), of trans-generic

changes (Foucault 1985), or of electronic empowerment through implantation of chips directly connected to a computer (Warwick 2005a, 2005b), etc.^[2]

The omnipresence of the body in recent theory and in contemporary social life has also had a repercussion in recent musical research.² The neurosciences (neuro-anatomy, neurophysiology, neuro-psychology, etc.) and the cognitive sciences have contributed significantly to the knowledge of the relationship between music and brain functions (McAdams and Deliège 1989; Cross 1999; Peretz, 2001, 2002; Clarke 2002). On the other hand, some musicological discourses rooted in sociological, post-Marxist and feminist perspectives have criticized traditional musicology's silence about the embodiment of musical practices because a presumed independence of rational control was suspected, or it was considered as a simple material vehicle (if not a necessary evil) for the higher goals of musical creation and aesthetic contemplation (Shepherd and Wicke 1997; McClary 1991; McClary and Walser 1994; Solie 1993). The traditional musicological view contrasts with the shifting of contemporary thought towards a paradigm in which embodiment and its connection with the natural and social environment in the 'real world' of quotidian life – with its ambiguities, indeterminacies, emotional intensities, corporeal impulses and contingency enigmas play a decisive role in cognitive experience (Maturana and Varela 1990; Varela, Thompson and Rosch 1992; Varela 1996, 1997, 1998, 1999; Núñez and Freeman 1999). From this point of view, what we believed to be 'pure' reason is probably "modelled and modulated by corporeal signals, even when it performs the most sublime distinctions and acts consequently" (Damasio 1996: 189).

2. Objectives

The general objective of this essay is to show how our human condition of embodied beings is interwoven with diverse aspects of our current practice and conceptualization of music. In particular, I intend to point out how, with perception being a primarily body-brain process, the shadows of its pre-conceptuality and pre-rationality extend into our musical practices in the shape of motor habits, bodily action schemata, auditory images, etc., which do not depend on a deliberate rationality.

A good part of this text is based upon the principle that conscience is not originally a question of 'I think' but rather one of 'I can' (Merleau-Ponty 1945:160). A corporeal perspective on our capacity to comprehend and to act

deactivates the direct control of rational representations of thought in favour of stressing the perceptual-motor capacities of the body. Hence, it is particularly appropriate to the enquiry of musical practices such as learning and performing processes.

The exploration of these objectives is closely related to a fundamental question: the [existential] meanings of musical experience. My working hypothesis in this regard is that many musical practices have primary significations without any need for the linguistic vehicle of rational thought.

These meanings are 'always-already' an actualization of musical experiences of daily life and are, hence, invested with ontic and epistemic primacy over the production of theoretic (musicological, scientific, semiotic, culturalist, sociological, etc.) discourses which aspire to exhibit authenticity, concretion and immediacy.

Although these experiences take place in the conscience on a subjective level, they imply transcendence towards the social and natural world.

In other words, embodiment plays a decisive role in the production of musical meanings primordially lived in the subjective experience in a pre-conceptual and ante-predicative way, at the same time open to the social and natural environment and informed by it.

The role of embodiment in musical experience, and particularly in the constitution of primarily musical meanings, doesn't deny the evident existence of the rationalization and socialization processes of the musical material, that have been permanently present in the development of Western music (Weber 1992). Nobody would assume that the Ars Nova could have been the exclusive product of pre-logical cognitive processes, or that Bach's counterpoint had disdained an 'occult arithmetic exercise of a mind [even if it was] unconscious that it was calculating."¹³ Neither could we think that the structural conception of musical substance, which has dominated the compositional poetics of the 20th Century (Dahlhaus 1997:96) and reached its summit in the utopia of integral serialism could have been motivated by an irrational chance; or, perhaps, as Lévi-Strauss insinuates, because their authors are victims of a naive empiricism:

"As the human sciences have discovered formal structures behind the works of art, one hastens to fabricate works of art taking as a point of departure formal structures. But it isn't sure at all that these conscious and artificially construed structures, in which one finds inspiration, belong to the same order as those [structures] one discovers subsequently to have operated in the spirit of the creator, most frequently without him being aware of it" (Lévi-Strauss

1971:573)

On the other hand, the exacerbation of structural rationality in dodecaphonism and serialism has coincided with the raise of expert 'structural hearing', consciously and analytically appropriate to the work (Adorno 1962: 16-17; Szendy 2001). Briefly, the agency manifest of the "Reason in the History" (Hegel) of Western music doesn't preclude the exploration of perceptual experiences which reveal pre-conceptual and pre-logic aspects of the musical practice. Co-implicated in these aspects are sensibility and signification (meaning), experience and representation, and action and knowledge, in the same way as subject and object, perceiver and perceived are tied together (Maturana and Varela 1990). On a more general level, one could say that rationality can't function without being coordinated with the 'lower' levels of perception, emotion and "all that weak, fleshy stuff" (Damasio 1994: 128). Indeed, emotions and feelings are "enmeshed" in the networks of reason, "for worse *and* for better". Indeed, "certain aspects of the process of emotion and feeling are indispensable for rationality" (Damasio 1994: xii-xiii).

For pragmatic reasons, however, I will dispense with extended considerations of the consequences of this connection for a better understanding of the emotional experience of music. Although a primordial phenomenon, which precedes conceptual cognition, musical emotion is a field as vast as it is relatively unexplored (Meyer 1956; Juslin and Sloboda 2001; Becker 2001; Damasio 1996, 1999; de Sousa 2003; Finnegan 2003: 181-192). Its study requires team efforts that can't be substituted by peripheral statements. Neither will I take into consideration those aspects of musical experience that are constrained by corporeality as an innate neuro-physiological constitution of the human being. As many researchers have shown, these aspects are probably universal (Wallin 1991; Wallin, Merker and Brown 2000; Meyer 2001; Peretz 2001, 2002; Cross 2003). Without disputing Wallin's statement that 'Music is primarily a matter of biology' (1991: 5), I prefer to share Damasio's idea, according to which

[A]lthough culture and civilization arise from the behavior of biological individuals, the behavior was generated in collectives of individuals interacting in specific environments. Culture and civilization could not have arisen from single individuals and thus cannot be reduced to biological mechanisms and, even less, can they be reduced to a subset of genetic specifications. Their comprehension demands not just general biology and neurobiology but the methodologies of the social sciences as well. (Damasio 1994: 124).

Conversely, it also seems reasonable to think that the 'purely musical' isn't clearly dissociated from the 'purely biological' (Cross 2003).^[4] In phenomenological terms, due to the ambiguous interweaving of interior and

exterior, of subject and object, of percipient and perceived, the unity of body is always “implicit and confused” to the point that “the embodied conscience is the central phenomenon of which mind and body are abstract moments” (Merleau-Ponty 1945: 231-236).

The discussion of the basic problems involved in the reciprocal relations between embodiment and musical experience will be undertaken in the following way: Before dealing with questions of embodiment in learning, playing and listening to music, it seems useful to specify the meaning of the central concepts around which these fragmentary reflections will be articulated. These concepts are corporeality, embodiment, perception, experience and linguisticity.

Thus, the present text appears as a prolegomenon to the analysis of embodiment as a perceptual source of musical, pre-conceptual and pre-linguistic contents of musical experience. Observations will be made about music learning processes through the appropriation of embodied abilities for musical performance, embodied effects of musical listening and the possibilities of dealing with musical experiences whose distinctive trait seems to be mainly pre-linguistic, pre-conceptual, and pre-logic. *Tempore opportuno* should be a follow-up, in which the subjective musical experience will be examined from the perspective of its potential for projection into the intersubjective realm of human communication and into the ‘affordances’ (Gibson) of the natural environment.

3. Mechanisms and words

As a first step towards the above-mentioned objectives, I have chosen to begin exploring the phenomenon of perception. In general terms, my approach is indebted to (mainly Merleau-Pontian) phenomenology while taking into account the empirical results provided by the neurosciences. As the origin of musical experiences, the pre-linguistic and non-conceptual nature of the content of musical perception plays a structuring role in the configuration of musical practices (habits, abilities, techniques) and of its subjective, social and environmental meanings.

If the only important thing were the neuronal mechanisms, a phenomenological description would be a vain word game. Speaking about the meanings people assign to their musical experiences, the contents of these experiences and the conditions for their comprehension, the intentional mode of the existence of musical objects, what it means to be human through

music, the description –free of scientific presuppositions– of the pre-rational and ante-predicative content of our musical perceptions and their culturally situated interpretation...all these questions would be simply a chapter more of what M. Harris scornfully calls the “antiscientific obscurantism of phenomenology” (Harris 1977).^[5] Neither would it make sense to deal with the relevance of perceptual pre-conceptual processes in the musical experiences of everyday life. The neuro-scientific reductionism would simply eliminate these questions as irrelevant to a systematic explanation of the neuronal mechanisms. Indeed, from the point of view of eliminativist reductionism, “what’s important is the mechanism; the rest is only word games.” (F. Crick 2005). In spite of this categorical statement, the questions formulated above don’t lose their relevance: from the neuro-phenomenological perspective assumed in this essay, they continue being fundamental for understanding the meanings of our intimate frequentation with music.

One of the ways to look for an answer to these questions is the use of qualitative methods of enquiry, in particular, phenomenological description. It is not my intention to discuss here the features of this mode of enquiry. This has already been done by E. Husserl and his followers, Merleau-Ponty (1945), Schütz (1974, 1976), Ingarden (1986) and others (A. Pike 1970, F. J. Smith 1979, D. Ihde 1976, Th. Clifton 1983, etc.), to mention only those who had a particular interest in music. Suffice it to say here that for phenomenology

- the basis of knowledge is the irreducible nature of conscious, lived experience, as the condition of possibility of any predication;
- perception is always perception of an object whose intentional existence is a function of its relation with the perceiving subject;
- the first step to accessing lived experience is to suspend the attitude of thought naturally inclined towards its contents, in order to reorient it towards the origin and structure of the states of conscience. Through this phenomenological reduction (*epoché*) we can apprehend the experience in the immediacy of its subjective intuitions;
- the description of our conscious experiences of the ‘life-world’ epistemologically precedes the explanations, the constructions and the abstract and derivative constitutions of scientific thought.

Although the phenomenon of intentional perception takes place in the solitude of the individual conscience, its subjectivity is capable of opening itself to evidence that can be shared with other consciences. The opening of the I towards inter-subjectivity is endorsed in Husserlian phenomenology by the capability of *Einfühlung* (empathy) or by coexistence as comprehension of the

Other: there is a relationship of reciprocity in which the transcendental subject comprehends himself as the Other as far as he is an Other for the Other (Husserl 1952, 1973; Aguirre 1982: 39-46; Lyotard 1992: 47).^[6]

If, indeed, the personal lived experience is founded upon the total and unavoidable participation of the subject in the life-world which opens the subjectivity towards the socio-cultural and natural world of the perceiving subject, the well-worn distinction between emic and etic knowledge would be neutralised. Both subjectivities –the researcher’s and that of his alocultural collaborator– are connected by the shared existential condition of ‘being in the world’: “There is no interior person; the person is in the world; it is in the world that it comes to know herself” (Merleau-Ponty 1945 : v).

At the same time, quotidian and subjective musical experiences are a social reality –the «supreme reality» upon which intersubjective meaning structures are lived. According to A. Schütz, the public of a concert «mutually tunes» its social relationships as a community of listeners, which, through music, pre-linguistically and pre-conceptually creates a « We » (Schütz 1976).^[7]

These ideas of phenomenology converge with the neurophysiologic presupposition according to which possible intersubjective experiences are based upon structural principles common to all human beings:

“We share our image-based concept of the world with other humans, and even with some animals; there is a remarkable consistency in the constructions different individuals make of essential aspects of the environment (textures, sounds, shapes, colours, space). If our organisms were designed differently, the constructions we make of the world around us would be different as well. We do not know, and it is improbable that we will ever know, what “absolute” reality is like.” (Damasio 1994: 97).

Thus, for instance, the human capacity for empathy (*Einfühlung*) is substantiated by the presence in the brain or ‘mirror-neurons’ whose function is to let us feel, want, and act with the Other, challenging in this way the phenomenological theory of intersubjectivity (Lohmar 2005: 163-165).^[8]

The fact that there is a reciprocity of the existence and transmission of bio-genetic mechanisms with the norms and conventions of a society (Damasio 1994:123-126) can be expressed in the general premise that sociality is based upon the comprehension between human beings through the coexistence of the I and of the Other in a intersubjective world (Merleau-Ponty 1945: 415; Lyotard 1992:78-80) bio-genetically founded. The first consequence of this premise for the ethnomusicological practice is that it legitimises the use of methods of enquiry in first and third person. Thus, the phenomenological

descriptions in first person of musical experiences, despite their purely subjective appearance, are 'always-already' spatio-temporally situated and immersed in a "living sociality" (Husserl), inherent to all human experience in spite of its intimate and subjective appearance. On the other hand, the primordial opening of the subjective conscious experience to the intersubjective world justifies the use of third person methods, because the descriptions generated by external observers belonging to the same (or similar) socio-cultural sector cannot be of an essentially different nature from the evidences (testimonies) than the testimonies of experiences given in first person (van Gulick 2004).

In general terms, the premise of all human science is an original sociality which expresses itself in a mutual comprehension among human beings made possible by the coexistence of myself and the Other in a world of intersubjectivity (Merleau-Ponty 1945: 415; Lyotard 1992: 78-80). However, in ethnographic practice this premise, more than an actual reality, shows itself as a dialogic horizon of mutual comprehension towards which the researcher as well as her alocultural collaborators are oriented, in spite of the cultural barriers that separate them. This ideal is being achieved through the sharing of experiences, dense descriptions and meaningful interpretations that are confirmed by the negotiated consensus of the native collaborators.

The ethnographic sources used in this text stem from interviews and observations made among Inuit, tango musicians and Valencian peasants. Furthermore, I have made enquiries in urban settings such as concerts, in learning sessions, and with university students. In some cases I have solicited personal answers to written questionnaires. This was the case at the International tango festival of Granada (1993), at '*milongas*' (i.e. tango dancing clubs) in Oxford and London (1997-1998) as well as among students of the University of Girona (2005).^[9]

The general perspective unifying these ethnographic inquiries is the search for an understanding of how conscious musical perceptions of people learning, performing or listening to music are the basis for experiences able to confer meaning and empowerment to people in their daily lives. I ascribe ontological and epistemological priority to these conscious musical experiences in relationship to the subsequent intellectual interpretations, be they in the form of aesthetic, musicological, sociological, or critical, etc. elaborations. From the ontological perspective, a sound object is constituted as a musical object in the process of intentional perception. From the epistemological perspective, the immediate experience of music in the first person is the origin and genesis of musical knowledge. This premise doesn't exclude the possibility that "music" may also be seen from other perspectives: as therapy, as

entertainment, as emotional expression, as a referential symbol, as a text for interpretation, as social behaviour, as a site for social construction, as merchandise, as well as many other things (Rice 2004). However, none of these metaphors of music could be thought of or exist if they weren't based upon sounds and silences becoming music through the subjective experience of a perceiver. Consequently, far from being 'purely' musical, this experience is the condition of possibility for the existence of "social relations, cultural expressions and political formations" configured by the experience of music."^[10]

As will be shown, the relevance of musical experience as an unavoidable object of a reflection on embodiment is based upon its intrinsic connection with perception.

4. Corporeality, embodiment, music

Phenomenology has generalized the distinction between lived body – *Leib* (Husserl), *corps vécu* or *corps propre* (Merleau-Ponty) – on the one hand, and biological, physical body (*Körper*, *corps*), the object of the natural sciences, on the other.

Our biological body is a physical structure, analyzed and explained by the empirical sciences (neurobiology, neurophysiology, neuropsychology, neuroscience, etc). As a product of evolution, the biological body is the origin of the biopsychic, innate and universal restrictions of the human being, and, at the same time, the material basis upon which the social diversity and historic variability of its manifestations is construed (Wallin 1991; Wallin, Merker and Brown 2000; Meyer 2001; Cross 1999, 2003; Peretz, 2001, 2002). The centre of the body operations is the brain, whose functioning is the object of cellular and molecular neuroscience (Damasio 1996).^[11] The human condition of possessing a physical and biological body guided by the brain's neuronal nets is the material condition that enables us to have emotions, to act, to think, to speak and to establish connections with other persons and with the environment.

Although all human beings possess a body, not all live in it in the same way. Indeed, the lived body is an experiential phenomenic structure that operates as our subjective conscience, submerged in a world differentiated by historic, socio-cultural and environmental contexts. The lived body is the subject of habitual actions that can be performed without the illuminative and explicative intervention of the mind. The lived body is not inscribed in the physical,

objective, domain of empiric science, or in the purely ideal domain of mental representations (Merleau-Ponty 1945: 160); it is neither mental nor material. Its mode of existence is that of an intentional object, lived phenomenally as an embodied perception that prevails over abstract conceptualization: before being a thought, idea or concept, the lived body is the experience of our sensible, perceptive, and, hence, pre-rational, ante-predicative, prelogic capacities. Far from being a purely mental reality, my own body is intentional consciousness lived through the physical body: embodied, incarnated thought not inscribed in the circle of my intellectual representations (Welton 1998: 184; Crossley 2001a: 101). The lived body is the organ of perception and, at the same time, its object; without embodiment there is neither perception (Husserl, 1952: 5-7) nor reason, both founded upon the pre-rational, pre-reflective, pre-objective lived body.^[12] The lived body is interwoven with the mind and the physical body to such an extent that “the world is not what I think, but what I live” (Merleau-Ponty 1945:xii).^[13]

Corporeality and embodiment are two different but interrelated aspects of our condition of incarnate beings: corporeality is the material condition possibility of embodiment. Between the two there is a ‘circulation’ (Varela 1992: 18) – the source of the ambiguity that blurs the rational dualism (Descartes, Kant) between mind and body, subject and object, perceiver and perceived, culture and biology, lived experience and objective knowledge. These dichotomies would be resolved (*aufgehoben*) in the embodied, pre-reflexive and ambiguous experience of the lived world (*Lebenswelt*) in a body that fuses and confuses nature and culture. Merleau-Ponty describes these processes with the image of circularity: “There isn’t anymore the original and the derived; there is a thought which moves itself in a circle where the condition and the conditioned, the reflection and the reflected, find themselves in a relation of reciprocity, and where the end is the beginning as the beginning is the end (1968:VI, 35).

This view has been corroborated by contemporary neurophysiology:

Nature appears to have built the apparatus of rationality not just on the top of the apparatus of biological regulation, but as *from* it and *with* it. The mechanisms for behavior beyond drives and instincts use, I believe, both the upstairs and the downstairs: the neocortex becomes engaged *along with* the older brain core, and rationality results from their concerted activity. (Damasio 1994: 128).

The double aspect of the body as a physical corporeality and lived embodiment is the point of departure for different perspectives in the study of perceptual conscience. Among them phenomenology and neuro-scientific

reductionism stand out as opposed poles. Between them there are mediations with different epistemological orientations: the cognitive (and neo-cognitive) sciences, particularly neuro-phenomenology which looks to build 'a passable bridge' (Varela) between (Husserlian) phenomenology and neuroscience.

Phenomenology sees in the embodiment the subjective and intersubjective source of our conscious, lived experiences, whose primary structures it investigates through first person descriptions of intentional perceptions. The opposition between corporeality and mind is resolved in the phenomenon of embodiment as our existential mode of being-in-the-world (*Dasein*). (Physical) body and (ideal) mind are intermingled in the phenomenon of intentional embodiment. Embodiment depends on corporeality to exist and perceive through the senses objects that are "simply there in the world for me" (Husserl 1913: 51) as correlates of my perception.

On the other hand, the neurosciences (neuro-anatomy, -biology, -physiology, -psychology, etc) look to unravel the functioning norms of many thousand millions of neurons and those of at least ten billion synapses and their relation to the phenomena of conscience. Whereas phenomenology is interested in understanding the 'how' of lived experience, the neurosciences try to explain the 'why' of this 'how'. Classic phenomenology ends where neurons appear and neuroscience begins. However, the gap between the two orientations isn't as wide as it seems to be: despite its initial position, contemporary phenomenology doesn't generally reject the results of neuroscience, while the more harmonistically oriented neurosciences are conscious that "[t]o understand in a satisfactory manner the brain that fabricates human mind and human behaviour, it is necessary to take into account its social and cultural context. And that makes the endeavour truly daunting." (Damasio 1994: 260; see also van Gelder 1996; Baumgartner 1996; Bayne 2004). Between phenomenology and the more reductionism tendencies of neuroscience (Krick, Koch, Bickle, etc.) are the (neo)cognitive sciences that aspire to systematically connect neuroscientific results with the intuitions and methods of Husserlian phenomenology.

A central idea of phenomenology, particularly in its Merleau-Pontian trend, is that the relation of the body with the world is not imagined and abstract, but real and situated:

We don't say that the notion of the world is inseparable from the notion of a subject, that the subject thinks of himself as inseparable from the idea of the body and of the world, because if it was only a question of a thought relation, this relationship would let the absolute independence of the subject as a thinker subsist and the subject would therefore not be situated. [...] [M]y existence as a

subjectivity is one with my body and with the world; and, finally, the body that I am, taken concretely, is inseparable from this body and this world. The ontological world and the body that we find in the heart of the subject are neither the world as an idea, nor the body as an idea; it is the world itself condensed in a global take, it is the body itself as a knowing body. (Merleau-Ponty 1945: 467).^[14]

Hyperbolically transferred into a musical perspective, we could state that the “only” way of knowing music is to live it, to become one with music in the process of musical experience. As a musical experience, musicology could be better understood not as a reflex of a pre-existing truth, but rather as a primordial realization of a truth.^[15] The immediacy, the phenomenal reality and the spatiotemporal situatedness of embodied perception are traits of a musical experience whose privilege it is to precede and found a musical knowledge in its rationality as well as in its functionality. For instance, if in a Spanish rural village, the public, generally ritual performance of ‘its dance’ is able to create an intersubjective feeling of common identity, it happens because the direct experience of such a performance has the power to condense, generally in a tacit, pre-linguistic and pre-conceptual way, an identitarian experience which agglutinates villagers and dancers in a “com-unity.” The production of this feeling is particularly reinforced among those audio-spectators who, in their younger years, have been dancers: during the performance they revive specularly, i.e. as “feeble fantasy” (Husserl 1973, Lohmar 2005), the specific corporal motricity demanded by the dance post at which they used to dance. This experiential way of situating the signification of a feeling of communitarian identity in its embodied immediacy is opposed to a functionalist way of assigning socio-cultural significations rationally mediated by a musicological operation which places them in an ideal, abstract, derivative domain, well protected from living immediacy.

One more observation can be made to point out the difference between corporeality and embodiment of musical experience. Corporeality is the basis of the acoustic universals of the physical world and of the innate biopsychic constraints which can be processed by human beings. As such, it can condition their musical practices. Among the biopsychic universals are the neurocognitive restrictions such as the limitation of auditory discrimination to recognize intervallic distances, the cognitive overload as a function of the quantity and the speed of the informational input, or else the cognitive need for classification, structural hierarchisation, information and redundancy, etc. (Meyer 2001:233-259). Other aspects of musical experience which pertain to the domain of corporeality are those sound phenomena which, determined by the biological conditions of the human body, can serve as conscious or unconscious stimuli for musical organization. Such are the bodily rhythms of

the vegetative system: the heard beasts and the respiratory cadence. As Lévi–Strauss puts it, “each counterpoint disposes for the cardiac and respiratory rhythms a mute part. [...] [M]usic exploits the organic rhythms, and makes pertinent the discontinuities that otherwise would stay in a latent state, and as drowned by the duration.” (1968: 24).

The interface between corporeality and embodiment being a fragile and permeable one, it is possible that the same phenomena could belong to both domains: the physical corporeality and the lived embodiment; it depends on the perspective we assume in the act of perception. If I work in a factory and listen from Monday to Friday to the more or less strident noises produced by the machines, I can – apart from closing my ears – assume at least two attitudes: a natural one, in which I hear the more or less unpredictable and annoying succession of noises; or an aesthetic one, in which I listen to the noises as a sequence of sounds with a beginning, middle and end (although not always in the same order!), structured in some way according to frequencies, textures, colours, rhythms, etc. In the first attitude, the noises belong to the real, objective world; in the second, they enter into the phenomenal realm of intentional perception in which I transform them into an aesthetic event, as an organized totality, different from their natural materiality. As objects of aesthetic perception, the noises no longer pertain to either the physical world or an ideal world in which they would assume the noble status of platonic ideas. Their existence is intentional: they only exist in that I perceive them as objects of aesthetic contemplation or pleasure.

Another example stems from an ethnographic situation of intercultural musical reciprocity, which took place during my fieldwork in the village of Rankin Inlet (Canadian Central Arctic) in the summer of 1975. After recording Tautungi’s *pisirks* (personal songs), I asked her if she would mind listening to some music ‘from the South.’ She agreed to and I began to play a recording of Beethoven’s 9th Symphony. After a short while, she didn’t hesitate to qualify this music simply as ‘noise’. The same evening I saw her dancing to one of her songs sung by a choir of old women during a ritual drum dance. Tautungi was living the experience, at that moment and according to the local tradition, of the drum dance to her personal song as her soul and her name. The public performance of her personal song did not symbolize her name and her soul; rather the performance was the direct experience of her personal identity in the presence of the community; her soul and her name manifested themselves as sound and dance (see Friedson 1996 passim). Moreover, the short melodic motif binding the *tagnirk* (strophe) with the *kimmik* (ritornello) of her song didn’t signify her extended family, but it was at the precise moment of its performance the perceptually lived sonorous realization of her extended family (Pelinski 1981:31-48). While Beethoven’s music had been simply noise

to her, the drum dancing of her personal song was at that moment the personally lived experience of her personal identity.

These reflections lead us to explore the relationship between embodiment, perception and musical experience more thoroughly.

5. Perception: I live, thus I think

In order to better understand the role of embodiment in the process of musical cognition, it is necessary to specify the connections between sensation, perception (or perceptual experience) and conceptualization. Through our body and our senses we obtain sensorial data under the form of 'neural representations' that differ according to which sense has provided them. The task of perception is to interpret or transform this information into 'perceptual images' (auditory, visual, tactile, etc.) which aren't stored in the brain as such but as latent 'dispositions' or 'potentialities' to reconstruct those images. The intervention of the mind consists of manipulating those images by representing them internally in order to organize them as concepts and arrange them into categories in the process of thought (Damasio 1996: 92-105).^[16] Thus, participation consists of subjective experiences and perceptual, pre-conceptual syntheses which cognitively precede the rational processes of reflection, representation, inference, etc. whose pre-theoretical and pre-logic basis they constitute.^[17]

From the phenomenological point of view, all perception, while it is taking place, is an absolute datum (Husserl 1982: 40). Thus, the music which at this moment we are listening to is here, as "something which is in itself what it is." During perception we are living in the perceived music, without conceptual or rational mediation that separates the subject from its object, the perceiver from the perceived. If embodied perception is fundamental and decisive in our cognitive processes, musical knowledge as the logical derivation of a perceptual, intuitive, lived experience is secondary knowledge (Husserl 1982:50). Music is not what I think, but what I live.^[18]

This statement can be clarified if we take into account that the relationship between concept and perceptual experience doesn't exhaust itself in the intentionality of perceptual experience: if the object of perception pertains to the material order, it can be described with conceptual, assertive, language; if, however, it belongs to the phenomenal, pre-conceptual order of artistic or imaginative expression, its description favours concepts formulated as metaphors (Scruton 1997: 92). Scruton illustrates this distinction with a

musical example: while sounds as physical entities belong to the material domain, their description as music cannot be separated from the metaphor, because it is the pertinent linguistic means to define the intentional object of musical experience. In physical reality sound neither rises nor falls, although that is how we hear it (Scruton 1997:93). Sounds belong to the order of material corporeality; music, to the order of phenomenal embodiment.^[19]

In the following, I will illustrate some traits of musical experience that were originally connected to different modalities of perceptually lived embodiment.^[20]

5.1. Temporality

The present of musical perception takes shape on an intentional horizon of retention and 'protension' (Husserl 1959; Merleau-Ponty 1945: 476). Musical attention focused consciously on a now, always evanescent, rests on an intentional background of past and future. It wouldn't exist without them. Reduced to an infinitesimal now, to a 'perpetual present', musical perception wouldn't be able to apprehend either a sound or a sense. Indeed, the perception of a musical piece calls to memory previous moments and the expectation of future ones. These 'retentions' and 'protensions' are made possible by the "dispositions" or "latent neural potentialities" located among the sectors of the brain;^[21] they conserve in the mind, during a certain period of time, remembered musical images, whether they belong to an immediate past or to an expected, possible future (Damasio 1996: 84, 98-99, 105). In terms of phenomenology, auditory perception "intentionally retains, in the new now of each case, what is already past, and manages to be certain of a lapse of past in the mode of an evident datum." (Husserl 1982: 80) Besides this past lapse, listening to a present sound contains an expectation of future. The fact that the being of music rests on a horizon of 'not-being' – the past and the future – contradicts the linear representation of time as a *continuum* of points.^[22] If musical perception is organized linearly in time, it is probably the one which articulates the listening of tonal music (Kramer 1988, 1996). However, in musical forms like sonata, linearity is dialectical, or more precisely, has a spiral form: not only does time return on itself at a higher level (for instance in the reexposition), it musically progresses and goes back according to the motif development of the composition. Seen in this way, musical time is interior, subjective: its sense is constituted by the intentional perception of a subject that exists in time, in the same way the world has meaning for us because our presence in it is secured by our embodiment.

From the compositional point of view, however, there are known testimonies by composers capable of condensed listening which, in one instant, holds the

totality of a specific composition. Thus, Mozart would have expressed to J. F. Rochlitz in 1879 that, once a composition was organized in his “skull”, he was able to “seize it in a single look, as if it was a painting or a sculpture. In my imagination I do not listen to the work in its development, as it should be, but I see it in a block, to say it so. [...] When I see the whole together, it is the best moment!.” (J. and B. Massin 1970: 627). Beethoven, too, was able to condense the flux of musical time into a single instant. Speaking about the development of the underlying idea (*zugrunde liegende Idee*) of a composition, Beethoven expressed to L. Schläsler that he, by listening, used to see in front of him the image of the composition in its totality, incorporated into his mind as a mould (Hürlimann 1944:200).^[23]

Furthermore, in situations of deep listening there are perceptual states

‘as if’ the space and the physical body would ‘disappear’ (in an absent state of proprio- and interoception) and the time stream stops. It is known, however, that such phenomena of body and time abstraction, even if characteristic of musical rapture, aren’t exclusive to musical perception.

5.2. Perspectivism

Our body is our perspective on the world (Merleau-Ponty 1945: 85); it perceives only frontal profiles of objects outlined in space against the background of the environment. In an analogous way, the tendency of partiality points to a perspectivism on musical listening: we tend to focus our attention on determined musical aspects, such as sound qualities (colour, duration, texture, pitch, etc.), formal procedures, or on perspectives that, without being ‘purely’ musical, are, nevertheless, able to generate meaning for and provide emotion to the perceptual process. There is no absolute perspective on listening to a piece of music; neither is there an absolute interpretation that would define its musical identity forever (Ingarden 1986). Listener typologies (Adorno 1962: 13-31; Lindenberger 1998: 270-282; Szendy 2001: *passim*) confirm this trait of listening to music.^[24]

Composers and interpreters, too, distinguish between levels of sound or elements of compositional structure that have to be listened to and other elements that accomplish a simple filling function, but whose absence would be noticed. Guided by precision and the desire to make the communication with the listener more fluid, the composer can indicate in the score which parts of instruments have to be listened to on a first level. This is particularly the case when, due to the complexity of the musical structure, the perceptual distinction between surface and background becomes blurred – as it used to be the case in avant-garde music of the 20th Century. Schönberg used the

sign H (from *Hauptsimme*, principal voice) and an inverted capital L to indicate the beginning and end of a principal part.^[25] Messiaen didn't hesitate to point out in his scores which parts or instruments should "dominate the entire orchestra", or which ones are its "principal elements."^[26] And Boulez has stated that

Perception is a double phenomenon: it recognizes different elements thanks to the fact that they take the place corresponding them and find themselves in a 'development' that they strengthen. At the same time, perception feels deceived, for it doesn't know when to wait exactly for the appearance of this recognizable element. I believe it is more surprising to unfold simultaneously on two levels: the one on which we feel sure and the other one on which we are exposed to doubt. This dialectic of certainty and doubt is, I believe, one of the more interesting elements of musical perception. (2003:132)

Compositional procedures of simultaneity of the musically non-simultaneous can be a challenge to musical perception. We find a paradigmatic example of this in the opera *Die Soldaten* (1958-1964). Here the composer, B. A. Zimmermann, superposes in certain moments three different instrumental and vocal levels corresponding to his own version of respectively different musical epochs and styles; simultaneously each one of these levels disposes of its own scenarios and theatrical actions^[27]. A well-known example of superposition of different musical styles is the masked ball scene in Mozart's *Don Giovanni* (I-XX, m. 406-468): three orchestras – each one playing in a different meter and style, and musically representing different social sectors – and a vocal quintet with its parts musically well differentiated, all accompanied by a violoncello and a double bass, are playing simultaneously. Which perceptual perspective should the audio-spectator assume? From a 'purely musical' point of view, the possibilities are manifold: they can go from a sort of post-modern zapping of the different elements to a global listening, which in the normal case of an opera fan is probably the more pertinent one (Szendy 2001: passim).

5.3. Intentionality

The abovementioned perceptual traits are linked together by an essential property of perception: intentionality. As phenomenology has shown, all perception is perception of something. By nature, conscience is characterised by 'aboutness': it is always directed towards an object, set in relation with a sensation, an image, a representation, an intuition, a fantasy, in other words, set in relation with the world. Thus, intentionality is the correlation of a perception and an object, which can be interior or exterior to the conscience.

What are the intentional objects of a musical perception? They are the sounds, the silences, the melodies, the rhythms, the timbres, the harmonies, the musical forms; briefly, all kinds of sound material and its silences musically organized, together with the emotions, the proprioceptive impulses associated with composing, 'musicking' and listening, and all the feelings of identity, belonging, solidarity, etc. lived in the subjective experience of musical perception. All these contents and objects of intentional perception are perceived in the form of images that can be eventually conceptualized in the form of thoughts.

Intentionality is fundamental for a musical aesthetics conceived from a phenomenological perspective: a piece of music doesn't concretize its potentialities as a meaningful musical event if it doesn't become the object of an intentional perception. Thus, music is immanent to conscience as far as it is an object constituted as a correlate of an intentional perception, i.e. of actual, full and direct personal experience, in which senses, emotion, and mind participate together. Although music -as an acoustic event exists outside our conscience, we can only affirm its existence as far as we have experience of it. Music and conscience are given to us simultaneously: by essence exterior to conscience, music is relative to it (Sartre 1947: 32).

The phenomenal existence of music rests upon the evidence of an immediate, ante-predicative and pre-rational experience, in which conscience and music are bound together by a primordial accord. In order to understand the significance of this experience, we have to reflect upon it prior to any anterior state of scientific rationalization.

If intentionality is a primordial trait of conscious perception, the modality of the existence of music is neither physical nor ideal. Music, whose exterior and objective existence I don't doubt, exists in my conscience only as a correlate (or a content) of my intentional perception. Consequently, instead of an opposition between subject and object, there is a relation of reciprocity between them that binds them inexorably in the act of perception.

A corollary of the principle of intentionality is the suspension of the distinction between exteriority and interiority. Intentionality means to be interwoven with music to such a point that an opposition between conscience and music is no longer thinkable: one is not conceivable without the other; both define themselves reciprocally. The I is immersed in music and music is a sonorous environment perceived by the listener – or given by him.

The reciprocity lived between perceiver and perceived, between conscience and its content liberates musical reflection from positivism as well as from

idealism. It is liberated from positivism because the experience given by the senses is the only source of truth: ethnomusicology, if it pretends to enjoy the predicament of science, must limit explanations to practices susceptible of empirical verification (or falsification) by the senses, i.e. to collect, to classify, to transcribe, to analyze, to edit and to publish musical objects. And it is liberated from idealism, whose belief in the primacy of mind, ideas, reflection, language and of text over materiality and direct experience of reality leads to the invention of abstract discourses; they let the functions of representation and symbolization rest upon themselves, they disconnect them from the existential order which they pretend to understand (s. Merleau-Ponty 1945: 145).

For existential phenomenology, intentional perception is pre-linguistic, pre-conceptual and ante-predicative. Our experience is the foundation of knowledge and signification: we live as real what we experience in it. This means that conscience in its lived correlation with its intentional object is the source of all meaning. However, although we experience the meaning of music in the act of intentional perception, this doesn't happen unless music proposes it to us (Merleau-Ponty 1945: 490, 513). Music does it through its socio-cultural genesis and through its historical location in which there is always a latent cultural codification. Nevertheless, all posterior intellectual attribution of meaning, inferred from the original musical perception, appears as abstract, secondary and derivative in relation to the lived significations. Thus, there is no question of assigning signification detached from the immediately lived musical experiences, because we are only living signification what when we are having a musical experience.

At this point, it is opportune to specify what we mean by musical experience.

6. Experience: I exist, thus I can

Perception and experience are correlative concepts. Perception, conscious or unconscious, conceptual or non-conceptual, produces the contents of experience. Although we could speak about an experience generated by a particular perception, its possibility and quality are pre-designed by the history of our preceding perceptions. According to a neuro-physiological hypothesis, perceptions provide us with sensible, concrete, corporeal phenomena, whose repetition stratify them in the form of “dispositions”^[28] linked with specific “neural patterns” operating in the memory. These “dispositions” do not shelter perceptual images (sonorous, tactile, visual, etc.) as such, but rather the means to reconstruct them (Damasio 1966:104, 108). The repetition of these

images produces a sedimentation process which results in our experiences. That is why we can speak about musical experiences as historic sedimentation of our successive musical perceptions.

Musical experiences possess innumerable forms, according to the different musical cultures and styles, the personal sensibility of the musician or perceiver, his age, social condition, etc; they can range from the ecstasy of personal deep listening to the euphoric chanting en masse in a football stadium. All these experiences are connected to particular modulations of embodiment. The experiences I intend to discuss here are related to learning and to instrumental performance: through corporeal schemata, they implicate the embodiment as action, or to put it in a more philosophical way, as “structurant structured structures” (Bourdieu 1980:87-109). Then I will examine a case of musical emotion at an early age, whose corporeally lived intensity marks the life-story of the subject of this experience. Thus, I will begin by describing and analysing the typical ritual of the first violoncello classes of a beginner.

After the de rigueur greetings,^[29] the teacher takes the instrument, sits down in front of the student in a performance posture, and begins to show him the correct body positions required by the nature of the instrument: how to sit down, how to hold the instrument and the bow, how to move the right arm, how to position the left hand and fingers on the strings, how to tune the instrument, etc. During the learning of the pieces, the teacher corrects the body positions as well as the musical aspects: the right tuning, rhythm, articulations, dynamics, etc. He does it less with verbal explanations than with corporeal demonstrations, whether by playing (the) musical examples, or by humming or gesticulating. The student tries to imitate the models: he seeks the convergence of the habitual movements of his bodily schema with an (at least) acceptable level of performance demanded by the piece he is practicing. Through the teacher’s correction, the student learns to listen to his own playing; then, by eventually playing a duo with him, the teacher also teaches the student to listen to the others in ensemble playing. The teacher accepts the piece as (sufficiently) well played when the student has understood and integrated the piece into the reserve of his motor dispositions in the form of a performance *habitus* (Bourdieu 1980: 87-109). The *habitus* works then as a “transposable disposition” to other pieces of the instrument’s repertoire. At the end of the lesson, the teacher indicates the pieces that will be the teaching object of the next encounter.

We can now ask how embodiment is implicated in this typical situation of musical learning. This happens on at least three levels: as an innate bodily schema, as a site for developing habits and motor abilities, and as a site of

musical emotion.

The innate body schema enables the student to accomplish actions which are susceptible to being used for musical goals. A body schema is the way of expressing how the body is in the world and allows for the realization of movements proper of the species: sitting down on a chair, holding an instrument in a way suitable to the structure of the body, etc. To move the body towards objects or in relation to them is to let the body respond pre-conceptually to their solicitations (Merleau-Ponty 1945: 161; Gibson 1979: chapter 8). On the other hand, the instrument is construed and conceived as complementary to the corporeal aspects mentioned: it is suitable to the innate structure of the body, to the possibility that the student will develop his technical abilities, his capacity for aesthetic appreciation and that he will acquire a new relationship with the objects of his cultural environment. The musical instrument offers itself to the student who perceives it (unconsciously) as an “affordance” of the cultural environment (Gibson 1966, 1979), in this case in the service of music. Thus, there is a correlation between embodiment and the musical instrument in the same way there is a correlation between percipient subject and perceived object in intentional perception.^[30]

The learner develops somatic-motor habits which allow him to unveil the possibilities of the instrument. These habits and abilities sediment themselves through practice as “durable –but not static– dispositions” whose plasticity makes them transposable to similar musical situations; they are a sort of generative grammar which allow the learner-musician to produce similar acts in an inventive and, at the same time, predictable way. Musical performance habits transform and enrich the body schema. Thanks to them, the musical instrument integrates itself into the performer’s body as an extension of it: the learner-musician ‘incorporates’ the instrument into his body schema as a ‘natural’ extension of his body. Performer and instrument can fuse and confuse themselves to the point that, paradoxically, the performer, in the euphoria of performance, feels his body without listening to himself (see Rosen 2005:15-44). Musical performance habits operate on a subconscious level: after a certain level of competence, the musician knows how to play his instrument without being conscious of how he does it: to play a difficult passage without knowing how he moved his fingers, without being able to say exactly where on the instrument the played notes are located. They are ‘in reach of the hand’. The music performer has learned a passage when his body has understood it, i.e. when he has ‘incorporated’ it into his world. Learning is achieved not by thinking but by doing. Knowledge and comprehension are primordially action. The body knows without thinking; it is “reason disguised as nature” (Merleau-Ponty 1945: 148, 160-171).^[31]

Finally, the body is the site of musical emotions, although it doesn't seem that that these have a different corporeal profile than the profile of other, non-musical emotions. It is true, however, that emotions involve more corporeal manifestations than other conscious states (Damasio 1994; de Sousa 2003). Thus, it is understandable that the aim of raising emotions among audio-spectators is an aspiration of all good interpreters.

Once the motor habits (the 'technique' of the instrument) have been developed to a level that allows the instrument to be played without the supervision – real or virtual – of the teacher, the student/musician is prepared to express himself creatively and to fulfill the last objective of his efforts: "to illuminate the music from his own interiority."^[32] The corporeal schemes and the technical abilities

are no longer the central preoccupation on the performer's mind: due to their embodied origin and to the training process, from now on they function as a code system whose meaning doesn't need to be represented conceptually by the performer to accomplish a musically satisfying performance. Motricity ceases to be the "servant of the conscience" (Merleau-Ponty 1945: 161). Rather, both motricity and conscience now fuse themselves in the form of sound, somatic-sensory and visual images which, without excluding a conceptual organization, serve to generate new motor responses from the habit as a point of departure.^[33]

Thus, the apprenticeship process is practical and consists basically in an aural, visual and motor mimesis of the teacher's model. This trait of a "practical mimesis" (Jackson 1989: 134-135) is operative in all day-to-day activities, particularly in societies based upon oral knowledge transmission. Practical mimesis is, however, also present in literate and technologically advanced societies: most apprenticeship processes, among them the musical ones, normally require the guidance of an instructor or teacher.

The actualization of corporeal schematism with its neuro-motor capacities of performing habits during the apprenticeship demonstrates its full functioning in the profession of the performer. An example of how a musician can accomplish efficaciously habitual musical actions in different situations is that of an organist who has to play a recital on a different instrument than the one he is used to playing on (Merleau-Ponty 1945: 169-171). Thanks to the habitual nature of his experience, he doesn't need more than an hour to familiarize himself with the dispositions of the registers and the new dimensions of the instrument. It's clear that in such a short lapse he can neither acquire new reflexes nor design an analytical-rational plan to control the new instrument. His quick accommodation to the new instrument is

possible because habit doesn't reside either in the rational thought or in the objective body but in aptitudes acquired through practice which sediments experiences and develops motor schemes in a pre-conceptually lived body. When the music finally resounds, the body of the organist and the instrument are the "passage place of a music that exists by itself and it is through it that all the rest exists." Thus, the organist's knowledge is rooted in a habit that manifests itself as effective musical action. His knowledge is action and his action is knowledge. His knowledge is setting in action, *mise en action*, "enaction" or "embodied cognition" as Varela would put it (Varela 1992: 174-247). His musical behaviour is not originally an "I think" but an "I can" (Merleau-Ponty, 1945: 160). The preparations of the organist, because of their habitual character, are similar to the preconscious and non-conceptual experiences that constitute the basis of around 90% of our pre-reflective quotidian behaviour (Varela 1998: 109-112).^[34]

This would be a fitting moment to initiate an analysis of the gestures with which the performer underlines his musical performances. They constitute a domain of musical embodiment whose exploration could reveal fundamental traits of the relationship between music and embodiment. Motion and emotion, music and visuality are intimately connected. Darwin pointed out the relevance of movement in the human and animal expression of emotions (Darwin [1872] 1965). And Ch. Rosen notes with his habitual keenness that "...the music is corporal gesture besides sound" (Rosen 2005:24). In contemporary theory, gesture and movement are generally re-interrogated from the theoretical interests of various disciplines (Hatten 2004; Sheets-Johnstone 1999: 259-277; McNeill 1992).^[35] Here, from the counterpoint of phenomena with neurons which underlies the present text, I would limit myself to pointing out some aspects of gestuality which concern music:

- the gestures which accompany a performer's performances do not remit semiotically to an emotion, but are in themselves the actualization of the(ir) emotion. The meaning of the gesture is not "behind the gesture", but rather "superposed" on the gesture and identical with it (compare with Merleau-Ponty 1945: 217);
- a relationship of reciprocity establishes itself between a performer's gestures and those of the audio-spectator: as the meaning of the gestures is not "given" by the performer but emerges from the intentional perception in which the gestures are "understood" by the audio-spectator, it could be stated that gestures design an intentional object whose comprehension by the audio-spectator (can) inhabit(s) in turn the performer's body (compare with Merleau-Ponty 1945: 215);

- when the performer (singer, instrumentalist, dancer) feels an emotion, the neural connections between his brain and his body induce “dispositional responses” directed to his body that usually externalize themselves as gestures or movements specific to the owner of the body;
- the specificity of the neural machinery which is behind the currently felt and conscious emotions may allow the brain to “bypass” the neural processes connecting the brain to the body, in such a way that the performer can realize gestures “as if” he felt a specific musical emotion; the performer can only “portray” emotion bodily rather than “feeling” it (Damasio 1994: 149);
- the possibilities of emotional response of the audio-spectator before the gestures (and the music!) of the performer are presumably endorsed by the activity of the mirror-neurons, whose function is to let us feel, want and act according to the feelings, volitions and actions of the Other (Lohmar 2005).

We can summarize the preceding observations with Rosen’s words: “the body imitates the music [...]. The gestures of the pianist are inevitably a visual translation of the musical meaning.” (2005:41).

Beyond the domain of musical performance, gestuality may assume other expressions in music. In the music of oral tradition the various musical styles are characterised by a specific repertory of instrumental, vocal and choreographic gestures; in musical composition gestuality plays a role as a stylistic procedure and compositional strategy of semiotic relevance (Hatten 2004) as well as material for composition (Berio, Ligeti, Kagel, etc.); in orchestral conducting gestuality postulates “a correspondence between what one knows about the score, that which one wants to hear and the gesture which has to induce this phenomenon” (Boulez 2003:146-147). However, it has to be pointed out that the meaning of the various types of gestuality is intentionally constituted in our musical perception and enriched by our preceding musical as well as worldly experiences.

Contrary to the habituality of the professional interpreter, the intrinsically musical listening experience is usually a conscious one, although its contents can’t be identified conceptually,^[36] unless we refer to them with metaphors. We can’t identify them conceptually, especially when we can’t link them to any exterior signification of narrative, rationally formulable, content (Scruton 1997: 95).^[37] This trait is particularly obvious in the musical experiences made special by their intensity: in such cases we don’t possess the required

concepts to specify how music is represented in the emotional whirl that characterizes such experiences.^[38] An interview with C.T. can illustrate this instance. The encounter took place in Barcelona in December 2002. Here is a partial transcription of the narrative:

“I came from a village where there wasn’t much music: only what the old women sometimes sang...some songs learnt at the local school, or the music played for dancing at village celebrations – *jotas*, waltzes, *pasodobles*, such things. Only some neighbours used to have radio. My father had bought one to listen to the news about the progress of the Civil War; but listening to it was difficult: I had to get his permission! I also remember what we used to sing in the church, when we went to the Sunday mass or to some funeral...and this scent of burning incense and candles! As I seemed to be quite pious and was good at school, my parents decided to send me to a Catholic boarding school to continue studying. This happened in the autumn of 1945. I remember that some months previously World War II had finished. At the boarding school I sang ‘classical music’ for the first time in a rehearsal of the boys’ choir. One day, by surprise, the music teacher played the beginning of *St. Mathew Passion* [by Bach]. It was as if lightening had struck me! I got goose bumps and began to cry. The music teacher asked me what was wrong. As I was unable to speak, I pointed with my finger to the old *Victrola* from where the music had come. He answered that I should begin learning to play the piano. [...] From then on, I have been obsessed by music. At night, on the bedspread, I spent a long time practicing the Hannon exercises and also the first piece I was suppose to learn and whose name I forget now; it was a little piece for four hands by Diabelli [...].

In another part of the interview, C.T. says that there are moments of this Bach choral piece that especially move him, as if they could “transport him to another world”; these moments are the entrance of the choir [meas. 17], and the different phrases of the piece sung by children’s voices. He adds, finally, that the first listening of this Bach choral piece produced in him such a deep emotion, that through it he believed to have discovered *the* music.^[39] Moreover, he decided at that moment that, one way or another, he would devote his whole life to music.”

I would like to emphasize three aspects of this narration:

- the musical emotion has manifested itself in a particularly intense and visible way (tears, effects on the skin, inability to speak). Even today, after many decades, C.T. prefers not to talk too much about what “has happened to him”. Thus we seem to be faced with an emotional response to music, extremely intense, which took place in C.T.’s childhood (he was then 11 years old) which we can qualify as privileged; it is located among what psychologists call “strong

musical emotions” or “peak experiences” (Gabrielsson and Lindström 1995; Gabrielsson 2001);

- C.T.’s experience emerges from his first contacts with “classical music”: the music teacher, without any introduction, wanted to give the choir boys a surprise by confronting them with music which they probably had never heard. Given that in C.T.’s house nobody used to listen to “classical music”, when he arrived at boarding school, he was a musical tabula rasa regarding erudite musical experience. He didn’t know German either, which means that he couldn’t have been impressed by the meaning of the literary text of the choral piece (*Kommt, ihr Töchter, helft mir klagen...*);
- the “strong musical emotion” generated by listening to Bach’s choir had an existential consequence: during the days following this musical experience, C.T. decided to dedicate his life to music – a commitment to music which he has certainly been practicing as a music teacher, performer and composer until now.

It therefore seems obvious that this old experience did not exhaust itself in a merely conceptual representation: its existential meaning did not emerge from a reflection on the nature of that experience, but has condensed itself in the profoundly emotional encounter between C.T.’s conscience and Bach’s choral piece. Given these conditions, it is problematic to speak, in this case, of a “cultural construction of emotion” (Becker 2001), as is fashionable in certain academic writings on music. It is true that Bach’s music belongs to the canon of Western musical culture, and that without the existence of this culture C.T.’s experience wouldn’t have taken place. It is also true that it is more probable that Bach’s music will emotionally affect a member of Western culture than a member of Inuit culture.^[40] However, a child who comes from a Spanish rural setting in the thirties and forties would know nothing either about Bach or about erudite Western musical canon. Thus, it is improbable that C.T. could construct his musical emotions from pre-existing socio-cultural musical realities. Consequently, we have to answer the following question: on the basis of which logical presupposition can we interpret the case of this subjective experience in such a way that it leaves the limbo of ‘private language’ to integrate itself into the intersubjectively shared domain of what intense musical experiences can represent? One answer is that, according to the ‘symmetry principle’ (G. Evans 1982: 230), the musical experience of a person is constitutively articulated with his experience of what happens in other subjects which are also language users. The Other is able to understand my experience because I am able to understand his experience. This presupposition is reasonable if we accept the hypothesis of *Einfühlung*

(empathy) based upon the operations of the above-mentioned mirror-neurons. Another possible answer is that, in terms of genetic phenomenology, regressing to the origins of an experience, such as the one we are discussing, takes us back to pre-objective sensations of sounds, melodies, and musical textures that in an undifferentiated moment of C.T.'s life began to take shape irrationally, in order to differentiate themselves from colours, tastes, etc. In this original process, sensorial differentiations as well as the intensity of the alluded emotional perception are left unmotivated and can only be understood as a pre-donation, as the pre-reflective and pre-linguistic power of the person to give himself things (emotions, experiences, intuitions, etc.), thereby interrupting the ad infinitum regression unable to make sense (Husserl 1970: 1548-166; Aguirre 1968: 196-199).^[41]

In both cases, however, the question of the relationship between musical experience and language remains unresolved: the conscious musical experiences whose contents are non-conceptual enjoy a status of somatic plenitude that can never be restlessly absorbed by reflective language and, in particular, by scientific objectivation, which appear as derivative and secondary in the face of embodied perception (Husserl 1982). So, how can we conceive of the relationship between language and musical experience?

7. Language: I speak, thus I think

It is well known that conceptual experiences are bound to the emergence of language, which, in turn, is related to the appearance (between fifty and a hundred thousand years ago) of the capacity for self-reflection. Existential phenomenology has observed, however, that the analysis of language and perception in terms of (linguistic) representations has limits,

“since much of what is important in the phenomenology of these acts occurs at a pre-linguistic level. [...] The mistake of the representational account is to define intentionality as a phenomenon that inheres only in the sentences of a language, and not also, and more fundamentally, in the pre-linguistic intentional behaviour like skillful coping that come before them. In divorcing assertion from the pre-linguistic intentional structures that make it possible, the representational account addresses only the most derivative aspect of the phenomenology of language, and it addresses even that most derivative aspect in a way that is misleading at best.” ([Wrathall and Kelly](#) 1996, 4: [28]).

It isn't surprising, then, that by using conceptual language to analyse complex musical experiences, we leave important aspects of them unconceptualised:

the quality of emotion, the inner gestures that mirror the gestures of the interpreter, the ineffable finesses of performance, that imponderable rubato which transports us beyond space and time, without mentioning those old songs that impregnate memories of places lived in childhood with sadness. When I focus my attention on those experiences, I recognize the inadequacy of rational language to represent in all freshness and immediacy their inexpressible nuances – unless I turn to the language of metaphors (see 8). Perceptual experiences of non-conceptual content, corporeally vinculated to action and emotion, are finer, more detailed and more complex than the linguistic possibilities of expressing and justifying them as conceptual contents (Evans 1982; Peacocke 1992; Bermúdez and Macpherson 1998).

The distinction between conceptual and non-conceptual experiential content can be illustrated through the existing difference between the fine continuity of an analogical musical recording with the discrete perfection of a digital one. It can also be visualised through the difference between the functioning of digital and analogical watches, or with our way of calculating distances when we don't dispose of instruments specifically designed to measure them. These examples show that the relationship between the subject of perception and the non-conceptual content of its experience is capable of providing immediate information about the environment without needing to appeal to propositional knowledge (Bateson 2000 [1972] 372-4; Peacocke 1983; Bermúdez and Macpherson 1998; Pitarch 2003).

Although reflective capacity is indissolubly tied to language (Varela 1998), it doesn't imply that the content of musical experiences, whose nature is different to those of the semantic contents of natural language, can also be fully apprehended in its lived immediacy through linguistic reflection.

In contrast to the tendencies that subsume the nature of 'musical thought' under a linguistic model, I support the venerable, although thousand times attacked, thesis that music in the everyday meaning of the term used commonly in the Western tradition, is primordially asemantic, non-representational, because it intrinsically lacks narrative content: its meaning is not given by convention, but by intentional perception (see Scruton 1997: 138-140, 210, 223-225, 344-345).

However, nothing prevents an inexhaustible variety of conventional significations (political, social, cultural, philosophical, etc.) from being assigned to music from outside, through otherwise socio-culturally very relevant discourses. However, these discourses pertain to a domain of conceptualization generally posterior and exterior, subsidiary and peripheral to musically lived experience. The verisimilitude of this statement is based upon

habits of listening that through different paths (association, life history, social engagement, etc.) locate musical meaning outside of intentional perception; although stimulated by music, they are not 'musical experiences. Such is the case of the ethnomusicological discourses on political, cultural and social functions, to whose configuration music can contribute, among other human activities, as sonorous mediation. Such is also the case of the significations structuralist 'musical semiology' has been attributing to music through intellectual representations.^[42]

True, these functions and significations are as important as the more 'reasonable' way of attributing a socio-cultural predicament to music. Indeed, they construct music as a worthy human activity by means of situating it among the institutionalised discourses. In the face of these socially constructed and academically accepted discourses, however, a phenomenon that is the foundation of the 'ontological dignity of music' (Aguirre) emerges: the musical experience, lived and vivid, of which musicological discourses – the present one included – are pale reflexes. In short, the content of musical perception is simultaneous and identical with its meaning. As an intentional object of perceptual experience, music doesn't symbolize; it doesn't reflect reality: it is reality.

Having arrived at this point, the perspicacious reader can ask, in what consists, then, the 'musicality' of the perceptual contents often mentioned but not yet specified in this text? And what is the relationship of these contents with the linguistic character of human thought?

The musical contents of perceptual experiences are all possible sound objects, framed by their respective silences (or, if you prefer, all possible silences framed by their respective sounds) that my intersensory perception transforms into intentional objects. Among these phenomena are those privileged ones that in Western culture are conventionally called 'music' understood in a broad sense: from the noise of water in the garden fountain to the beginning of the St. Mathew Passion, without excluding *Mo-No. Musik zum Lesen* by D. Schnebel, or any silent or sonorous phenomenon which we decide to perceive intentionally as a musical object. Their musical contents are sound and silence organized in the perception as intentional objects according to the current parameters –pitch, duration, dynamics, articulation, timbre, texture, form, etc.–, the stylistic traits of musical styles, the qualities of performance, and all kinds of musical qualities that we are able to perceive in the sounds and silences of our cultural and physical environment.

In that they pertain to the intentional world of imagination, the 'musical' contents of our perceptual experiences are pre-conceptual and pre-linguistic,

i.e., they are 'ineffable': they are not said but lived. This thesis carries with it theoretical implications concerning the relationship between language and music. Indeed, our everyday experience witnesses how we often speak about music and how we situate ourselves in the domain of conceptual rationality in order to be able to write likely and, if possible, inter-subjectively comprehensible texts. In order to resolve this apparent contradiction, we face two alternatives: to appeal to "non-linguistic thought", or to use a language based upon conceptual metaphors.

The notion of "non-linguistic thought" implies that our nature as embodied beings allows us to behave non-conceptually in perceptual non-propositional terms. These, however, are well-structured and are able to represent the surrounding world in a well determined way, and to seize it adequately. The possibility and the existence of "non-linguistic thought" has been extensively argued by Bermúdez (2003a, 2003b). Obviously his arguments contradict the usual conception of the nature of thought sustained by Frege, Wittgenstein and the linguistic and hermeneutic turns of contemporary theories; for these theories, the notion of thought without language is 'unthinkable'. *Wovon man nicht sprechen kann, darüber muss man schweigen*, sentenced Wittgenstein (1964). In the context of our discourse, it is possible to interpret the gestures of an interpreter and of an orchestra conductor.

As a sort of non-linguistic thought which can be inter-subjectively understood (McNeill 1992), these gestures are also revealing of the meaning which musical listening has for the listener and for the community to which he belongs. These gestures are culturally configured: smooth turns of the head from right to left and vice versa, which in Western culture mean a negation, are signs of positive musical emotion for a Hindu listening to a raga.

Nevertheless, our current way of articulating discourses on music is using natural language based upon conceptual metaphors: like synesthesia, metaphor is, according to cognitive linguistics, a resource of the thought for understanding one domain of experience in terms of another (Lakoff and Johnson, 1980; Johnson, 1987; Lakoff 1993). Beyond being a poetic figure, metaphor is above all a cognitive mechanism (Núñez 1999:45). It's cognitive use is legitimated because of its nature as a projection of our corporeal and embodied, biologically predetermined, experience, over our perceptual experiences and over our thoughts (Johnson 1987; Lakoff and Johnson 1999). Metaphor has the capacity to show the connections of our rational logical thought backwards with the 'lifeworld' as the point of departure, support and motive of all theories (Husserl 1976; Villacañas and Oncina 1997: 15). Through its capacity to establish connections between different worlds, – the material and the intentional, the acoustic and the musical – the metaphor is

the most adequate linguistic resource for speaking about musical contents, and, if possible, for understanding them (Scruton 1997: 80-96).^[43] Intentional musical phenomena, such as density, movement, colour, strength, texture, etc. can be understood in terms of the corporeal and embodied experience that generates these concepts (see 8).

Let's go back to the relationship of language and musical experience. If, as Gadamerian hermeneutics postulates, linguisticity is previous to the experience of the world, and, as such, the condition of possibility of thinking about the world, it would seem that the pre-linguistic and pre-reflective musical experiences would be unthinkable, which means, non-existent. Indeed, for Gadamer "Thought lives in language", and "The linguistic is the fundamental constitution of language" (Gadamer 1997: 115). Language would be the condition of all comprehension which is the way of being of the existence itself (Dasein). "Language [...] is the first global interpretation of the world; that's why it can't be substituted by any other thing. For all critical thought with philosophical level, the world is always interpreted by language (Villacañas and Oncina 1997: 18). In phenomenological-hermeneutic view, the concepts would establish the horizon of possible experience as well as the limits of a 'thinkable' theory.

In spite of this thesis that language is the condition of possibility and mediation of our experience of the world, it is surprising that Gadamer also admits that our experience of the world "is never only a linguistic process and it doesn't exhaust itself in the language" (Koselleck and Gadamer 1997: 89). Thus, there would be realms of human experience that escape from the rigors of logical reason. Now, in the case of musical experience, there are indeed 'extralogical', embodied processes that don't fall under the possibilities of conceptualization: they are based on the imagination, on the emotion, and on the infinite nuances of human sensibility and are not fully transparent to the conscience. In the same way that being exceeds conscience and meaning (Kant), the being of language exceeds its discursive applications (Gadamer), and the semantic situation of a speech-act surpasses the meaning of the used words (Austin, Searle, and the second Wittgenstein). Being co-implicated in embodied perception, the space of musical experience exceeds the possibilities of its conceptualization. To situate music on the horizon of a linguistic genesis only accounts for its possible *mise en discours* that cannot exhaust the horizon of all possible musical experiences. As the meaning of musical experience more than the act of listening, it is also "always more than the said [about it] and diverse from it" (see Koselleck 1997: 41). The excess of musical experience may be only expressed in terms of conceptual metaphors irreducible to pure logical reason.

In short, there is a primordial asymmetry between musically lived experience and attempts at its totalising conceptualisation which returns the institutionalised musical discourses to their proper place: that of derived and complementary sources of musical knowledge. In the same way that history, “although made possible and mediated linguistically goes beyond what is attainable by language” (Koselleck 1997: 879 and 93), all models of linguistic-semiotic processing of music suffer an “unattainable pretension of meaning” due to the fundamentally asemantic nature of music and to the condition of pre-linguistic embodiment that exceeds all effort at total rationalization (see also Jackson 1989:122). A pre-conceptual content of musical experience can only be channelled into the frame of rational consideration through an additional process of metaphoric translation. So we can have a glimpse of the limits of pre-rationality, although without being able to seize it in its totality.^[44] Paraphrasing Husserl: the less possible is understanding, the more possible is pure intuition! The language of music gives the word purely to the listening ear and disconnects the thought, which, interwoven with the listening, transcends, i. e. reifies, musical experience. (Johnson 1987; Lakoff and Johnson 1999). In the following section I will detail this relation.^[45]

8. Cognitive semantics: metaphors and tango

As has already been pointed out, musical perception is closely connected to the space as lived action, orientation and movement in its original corporeal character. This connection goes back to the corporeal schemes that underlie our way of being in the everyday world and of connecting ourselves with the environment (Johnson 1987; Lakoff and Johnson 1999; Núñez 1999:41-60). Furthermore, musical perceptions generated by our embodiment condition are usually expressed linguistically through metaphoric intersensory transferences. The use of metaphor in musical discourses leads us to explore more closely embodiment from the point of view of the cognitive semantic theory developed by Lakoff and Johnson (1980, 1999; and Johnson, 1987).

Our habits of rational linguistic behaviour tend to hide the emergence of signifying structures in the depth of our embodied experience. However, embodiment is implicated in the human mind through the strong dependency concepts and reason maintained with the body (Lakoff and Johnson 1999:19-20). The specificity of the human body, particularly of the neural brain structure, is at the origin of the sensitive-motoric experiences of our everyday life. The conceptual structures emerge from these experiences mediated by the schemes of the motor-body system and of the imagination. The condition of possibly having signifying concepts is intrinsically related to the embodied

condition of our experience. Conceptualization, categorization and inference emerge to a great extent from our embodiment: from our motor schemes, from our capacity for gestalt perception, and from the scheme formations of our imagination.

To linguistically express this projection of our sensory-motor apparatus onto our subjective experiences and our judgements, we use conceptual metaphors without recurring directly to a discursive reason (Lakoff and Johnson 1999:7, 13). The metaphors serve to formulate abstract concepts based on the inferential patterns used in the sensory-motor processes directly emerging from our body. The fundamental role of metaphor is, indeed, to project inferences from one realm (the sensory-motor) to another one (the mental). That is why most of our reasoning is metaphoric (Lakoff and Johnson 1999: 4, 7, 45, 78, 127-129, 134; Núñez 1999: 41-60). The body is metaphorically in our in our mind, as the mind is metaphorically in the body. Body and mind are an indivisible unity.

Conceptual metaphor and pre-linguistic musical experience meet on the same basis: embodiment. For this reason, it isn't surprising that our musical – everyday as well as academic – discourses abound and, as a matter of fact, use metaphors to establish a linguistic communication about music.

In order for my discourse to keep its feet on the ground, I will use as an example the Argentinean tango. Thus, I will present a semantic-cognitive analysis of the structure and content of current concepts in the linguistic uses of musicians, poets, and dancers who practice Argentinean tango. In this way, I hope to show how the 'tangueros' conceptualize their tango experience through conceptual metaphors originating in embodiment. Let's listen first to some bandoneon players:

"The bandoneon is for me the prolongation of my body. I have incorporated the instrument into my life (...). The bandoneon has a very sensual sound." [\[46\]](#)

"For the bandoneon player the instrument becomes oneself, one's wife in some ways. Furthermore, there is a homosexual element in it. One feels possessed and possesses it, one caresses it, hates it, penetrates it, needs it..."[\[47\]](#)

"The bandoneon is a part of my body. It is the prolongation of my hands, it is my soul, my heart, with 'him' I feel as comfortable as I feel with my best friend; that's the way I feel when I am alone with the bandoneon."[\[48\]](#)

"The bandoneon is the prolongation of my hands (...). I think, I walk, I reason in tango (...). I'll always think and feel in tango."[\[49\]](#)



Arturo Penón, 1982 (Foto Mazous)

These statements remind us of Thomas Bernhard's *Der Untergeher*. The protagonist attributes to Glenn Gould the burning desire to identify himself with his instrument to the point at which he would melt himself with it: "The ideal would be *that I became the Steinway, that I wouldn't need Glenn Gould*, said, that he could be the Steinway and Glenn Gould in one, make Gould totally superfluous [...] To wake up one day and *to be Steinway and Glenn in one*, said, thought, *Glenn Steinway, Steinway Glenn, only for Bach.*" (1997: 87).

There are also corporeal associations with the tango style, at least for those tango players that find that "it allows you more freedom, sensuality and colourfulness in its performance." In general, the stylistic features which seduce musicians are those inscribed directly in the experience of sound.

These are

- the discontinuity and contrasts in rhythms, dynamics, agogics, texture, timbre, etc.,
- the irrational phrasing of the rubato, be it as 'individual discrepancy', or as 'collective discrepancy' (Keil and Feld 1994: 119-21) in relation to a steady pulse;
- finally, the particular pulsation or 'groove', which gives tango its specific mood. Some musicians define it as 'the heart beat which gives life to tango'. Acoustically present or implied, this fluid pulsation may underlie most of the duration of a piece, and is perceived as a slightly 'laid back' rhythmic

realization. It acts as the metric reference point on which the melodic instruments create the rubati tensions (Keil and Feld 1994: 59-72).

The present enumeration would be a futile musicological exercise if we weren't able to bodily experience what each one of these features musically 'means' – a pleasure for those initiated into the style, able to 'understand with the body', i. e. to replicate with inner corporeal movements the subtleties of a good tango performance.

No less meaningful for bodily rooted tango experiences are the metaphors of tango lyrics when they address the bandoneon; they tend to create anthropomorphosing metaphors that mirror the player's body: the bandoneon growls a tango,^[50] knows my pain,^[51] cries a tango,^[52] has grief and blood,^[53] dreams^[54], curses, speaks and, of course, is always right,^[55] etc.

Thus, a good part of the musical and lyrical meaning of tango emerges from metaphors which transfer instances of embodiment into musical and literary language. If we analyse these metaphors, we observe that their basic structure and contents are based upon the concepts of prolongation and identification: the body extends itself to the point of identifying itself with the instrument; the instrument assumes the musical functions of the body. These testimonies show that the concept of the musical instrument is inferred from the human body and its functions. The metaphors of prolongation and identification, spontaneously used by the performer, emerge from the cognitive unconscious of the performer and lyricist. Beyond informing about the way they conceptualise the relation between body and instrument, they express their way of experiencing music spontaneously perceiving the culturally informed donations offered by the potential of the tango style: the sad timbre of the bandoneon, its capacity for sharp rhythmic marking to the tango rhythm, the disposition of the guitar chords which correspond to the position of the performer's left hand, etc. In other words, the metaphor of prolongation indicates that the experience obtained by the musical performance depends on our corporeal scheme, the domain of its origin. The metaphor projects the corporeal realm upon the instrumental-musical one making the content of musical experience comprehensible^[56].



Astor Piazzolla, Montreal 1984
(Foto P. Guzmán)

In order to give meaning to his musical experience, the performer uses image schemata (instrument, bandoneon) as well as metaphors (the bandoneon as a prolongation of the body). Both resorts or means are founded on the pre-conceptual structures of experience: for the meaning of the scheme as well as the elaboration of the metaphor depend, in the first place, on our corporeal experience which makes the analogy instrument-bandoneon-prolongation of the body-erotic object immediately comprehensible, without resorting to the rational and propositional understanding.

If we focus our attention on the dancers' perceptions of Argentinean tango, we can also observe that they are formulated in metaphoric expressions implicating the embodiment of their musical comprehension. Here are some testimonies offered by audio-spectators at the Tango Festival of Granada. To the question "What do you think about tango?", some people conspicuously answered: "I don't think about tango, I feel it". However, the most frequent answers were:

"I don't think about tango; I feel it."

"Tango provokes a heartbreaking feeling."

"It is emotive, sensual, passionate, visceral, expressive, charming, strong."

"It is a music which is born in the heart."

The following testimonies reveal experiences of British tango dancers:

"[At tango dancing] my body transforms itself by the extension of sentiments and experiences. If one lives passionately and emotionally, than one can feel the tango, and perhaps tango wakes sometimes our ability to live in that way."
(Londoner, woman, 43 years old)

"Tango is expressive and passionate. It is a liberation of emotions, of physical

emotions.” (Man from Surrey, 53 year old)

“The tango lets me feel my body smarter than it really is.” (Oxonian woman, 44 years old)

[When dancing tango], “...it is essential to listen to your own body.” (Oxonian woman, 36 years old)

“Tango lets feel my body more sensually. It connects my body with my mind.” (Oxonian woman, 53 years old)^[57]

Although not because they may seem conventional and topical, these metaphors are cognitively less significant. They refer to the body as spontaneous expressions of the cognitive unconscious that informs of the conceptualisation of the relationship between tango and body. Without the primordially corporeal and pre-logical experience that configures the emotion generated by the tango dance they would be incomprehensible.

In short, for tango musicians, poets and dancers, the lived tango seems associated with strong emotions founded on a primordially corporeal and pre-logical experience. This experience is verbalized by metaphoric expressions that help to comprehend one domain of experience - the musical - in terms of another one - the corporeal (Johnson 1987: 15). Images, schemes and metaphors are used to express the founding pre-conceptual structures of embodied perception to make sense of the tango experience. They seem to confirm the hypothesis of cognitive semantics according to which the meaning of an image and the elaboration of a metaphor depend, in the first place, on our bodily experience: it makes immediately comprehensible the analogy instrument-bandoneon-extension of the body, without needing to appeal to logic and abstract propositions for comprehension.

In other words, embodied habits and imaginative schemes confirm the view of cognitive science according to which our fundamental mode of comprehending the world is through basic concepts able to generalize our experiences relative to the functioning of our body in its environment. These embodied perceptions, experiences, habits and metaphors are the fundament upon which rests the conceptual system that allows us to talk about music as a rational and symbolic system.

9. Neurons and Phenomena

In a previous section of the present text (4) I have mentioned attempts at epistemological mediation between corporeality and embodiment – an opposition that still echoes the old distinctions between nomothetic and

ideographic (*Windelband*), causal explanation and the comprehension of meaning. These dichotomies, disguised under neurons and phenomena, neuroscience and phenomenology, still underlie our discussion.

From a purist position, a fruitful dialog between phenomenology as a 'rigorous science' (Husserl) and the neurosciences – particularly in their more reductionist version (Churchland 1987; Churchland and Sejnowski 1992; Crick 1994; Koch; Bickle 1998, 2003) seems impossible. For the phenomenologist who believes in the link between the hand and the word, or who still uses his old Remington (or his inspired Parker) and still doesn't have a web connection, neurons appear as the devil incarnate. He would say pensively: "Phenomenology ends when the neurons begin"^[58], supported by Husserl who expressively fought "the naturalization of consciousness." (Husserl 1911)^[59].

However, beyond these two solitudes, there are attempts to create epistemologically 'meaningful bridges' (Varela 1996; Bayne 2004: line 69) between phenomenology and neuroscience. These attempts are led by orthodox phenomenology as well as by the various tendencies in the cognitive sciences, particularly by neuro-phenomenology (Petitot et al. 1999).

From the point of view of phenomenology, its founder himself admits the possibility of making his project compatible with a scientific, realist and causal theory (Roy et al. 1999: 61-78). Merleau-Ponty endeavoured "to follow the causal explanation in its scientific development, in order to specify its meaning and to put it in its true place in the ensemble of truth. For this reason there is no refutation here, only an effort to understand the difficulties proper to causal thinking." (1945: 13, note 1).

More recently, the phenomenologist Dieter Lohmar (2005) has considered the appropriation of the results of the natural sciences as a reasonable extension of phenomenology. Lohmar asks what sense it would make if phenomenology presented itself as the foundation of science and if, after all, it wouldn't be able to take advantage of the sciences for its own research interests. Such is, for instance, the case of the 'mirror-neurons' of the cortical brain (Rizzolatti, G., Fadiga, L, Gallese, V. and Fogassi, L. 1996; Rizzolatti, G., Fogassi, L. and Gallese, V. 1997); they oblige us to rethink phenomenologically how we can 'feel with' and 'live with' ourselves the movements, corporeal actions, sentiments and volitions of other persons. According to neuro-physiology, the 'mirror-neurons' secure the empathetic opening of the individually lived experience towards the lived experiences of the other (Lohmar 2005: 163-165). If these neurons effectively produce the behaviour that neuro-physiology attributes to them, we would understand – in the register of the 'as if' – the image (or fantasy) that in our conscience is produced by the gestures of the

performer and the finesses of his musical interpretations; moreover, we would also be able to understand why such affections take place. We could make two observations regarding this hypothesis. First, even if the co-feeling is already a feeling that 'mirrors' the feeling of the interpreter, we would never know if the image of our auto-affection is as intense as the real or as the produced 'as if' feeling. Second, the knowledge of the why we are neurobiologically able to co-feel the musical rendition of the performer never substitutes the comprehension of the how, or of the quality of our auto-affection.

On the other hand, among the attempts to reconcile neuroscience with phenomenology is the neuro-phenomenology proposed by Varela (see Varela et al., 1991; Varela 1996, 1997, 1998, 1999) and the researchers associated with this project (Petitot et al., 1999). Neuro-phenomenology is situated at the crossroad between neuro-reductionism (Churchland, Sejnowski, Crick, Koch, Bickle), which eliminates the conscience, and the dualist rationalism that maintains the irreducibility of the gap between cognition and experience (Chalmers 1996). Neurophenomenology aims to create a link between lived experience and the silent and unconscious operations of the neurons. For that purpose it combines the explaining strategies of neuroscience with the qualitative and comprehensive descriptions of phenomenology (Varela 1996). The result is a systematic attempt to naturalize phenomenology according to its perspectives with those of contemporary cognitive science (Petitot et al., 1999).

In an homage to brevity and the (already im)patient reader, I will dispense with critically examining the reception of the phenomenologic-hermeneutic thesis underlying the present text; they reappear with new resonances in the writings by Varela, who openly recognizes his intellectual debt to Husserl, Merleau-Ponty, Heidegger and Gadamer. An example of it might be the concept of enaction as embodied cognition (Varela et al., 1991). According to Varela, cognition is enaction, i.e. action guided by the sensory-motor resources of our neural systems in our corporeal couplings with our natural and cultural environment from which a world of signification emerges. To enact (*hervorbringen*) is to let a meaning emerge from a background of comprehension which depends on our being in the world. This *Dasein* is inseparable from our biological corporeality resulting from evolution as a natural derivative, and, at the same time, as culturally lived. Thus, enactive cognition is opposed to scientific cognition as an 'objective' representation of a pre-given, ante-predicative and pre-reflective world, independent of the knower.

The hermeneutic-phenomenologic implications of the concept of enaction

—such as the intentionality, the negation of an objective, pre-existing world, independently of perception, the overcoming of the subjective-objective dualism, all this on the basis of our epistemologically and ontologically founding condition of Being-in-the-world (*Dasein*), the priority of knowledge as action – are obvious. Nevertheless, the new moment, which takes us back to Varela's background in biological sciences, is the importance given to the neural system, and, thus, the need to produce models to couple phenomenology with neuroscience. From here comes the enactive perspective: it presupposes “to determine common principles of legal bonding between the sensorial and motor systems that can explain how action can be perceptively guided in a world which is dependent on the perceiver. (Varela 1991).

To fill the gap that separates neurology and phenomenologic states, neuro-phenomenology aims to produce an acceptable demonstration of the equivalence, isomorphy, analogy of identity between the way we live phenomonic embodiment and its neurologic correlate. To solve this problem, Varela's main working hypothesis is to generate

“phenomenological accounts of the structure of experience and their counter parts in cognitive science relate to each other through reciprocal constraints. The key point here is that by emphasizing a co-determination of both accounts one can explore the bridges, challenges, insights and contradictions between them. This means that both domains of phenomena have equal status in demanding a full attention and respect for their specificity.” (Varela 1996: 343).

This scientific project is, in the end, a vast attempt to naturalise phenomenology with the scientific objectives of the cognitive sciences, i. e. to set into a relationship of systematic coherence the insights of phenomenology with the scientific objectives of the cognitive sciences (Varela in Varela et al., 1992; Baumgartner 1996; Varela 1996, 1999; Petitot et al. 1999; Lutz, 2002; Lutz, A., Lachaux, J.-P., Martinerie, J. and Varela, F. 2002, y, en particular, Roy et al. 1999; Lutz, A. and Thompson, E., 2003; Noë, A. and Thompson, E. 2004).

The project to update phenomenology with the incorporation of the results of the natural sciences, especially of neuroscience, didn't remain unanswered from the side of some cognitivists. One of the more sagacious criticisms has been articulated by Tim Bayne (2004). Regarding the neuro-phenomenology goal of closing up the gap between conscious experience and neuronal activity through a formal mathematical model or generative passage (Varela 1997; Lutz 2002; Roy et al. 1999: 1-80), Bayne doubts that neurophenomenologists have the recipe for closing the explanatory gap

between phenomenal events and neural events. Indeed, Bayne objects that even if

[w]e might be able to predict phenomenal states on the basis of neural data, [...] the explanatory itch would remain. We would still need to explain why some neural states have a phenomenology, and why particular neural states have the particular phenomenology that they do. Even with a complete formal model of both the biological mind and the phenomenal mind, it seems to me that the relations between the two would remain as mysterious as ever. The reason for this, I think, is that formal models can only capture the structure of a domain; they cannot capture its intrinsic nature. Those who think that the hard problem is hard do so because they think that phenomenal character – the “what it’s like” of experience – cannot be fully captured by structural descriptions. [...] To the extent that one is at all gripped by the explanatory gap, one will be inclined to doubt that it could be bridged by mathematical models. There is certain irony in the fact that neurophenomenologists seem to be assuming a functionalist account of phenomenology very much like the ones they frequently disparage (Bayne 2004, lines 486-504).

Translated into musical terms: the neuronal state that accompanies (is, founds, supports) the experience of a dodecaphonic chord doesn’t need to be isomorphic to the pitch structure of that chord. Conversely, the phenomenical properties of a musical experience don’t need to be translated isomorphically to the natural properties of the neuronal states that accompany this musical experience. On the level of musical performance, the use of the motor abilities aren’t predetermined by the knowledge of their concomitant neurological processes. The hypothesis of isomorphism between acoustic data and musical perception is tempting, because, taking as a point of departure the musical experience, it could open the way to explain research. However, between both processes there aren’t categorical mediations that put into question the viability of such a project: for instance, the listening habits configured by the cultural environment. Beyond the meanders of neuroscience and the subtleties of phenomenology, a lived experience doesn’t seem to be either isomorphic or analog and even less identical to the concomitant neuronal processes. On the other hand, eliminating conscious experiences – which are our lived way of experiencing music – doesn’t solve the problem. We don’t go to the opera to experience the excitation of the oxytocin neurons which seemingly have unleashed the fatal love of Tristan and Isolde; we go to the opera to enjoy the ineffable aesthetic pleasure which listening to and seeing one of the most beautiful and moving love histories created by Wagner’s genius gives us (see Damasio 1994: 121-122). As opposed to reductionist materialism, it seems reasonable to think that subjectively lived musical experiences possess ‘rests’ which don’t fit into the objective truths produced by the experiments with the brain imagery of neuronal processes

shown through magnetic resonance (IRM). In their eagerness to give rational explanations, the neurosciences tend to overlook the complexity of phenomena that characterise the lifeworld of our musical experiences.

Without undervaluing the relevance of the often fascinating contributions of the neuro- and cognitive sciences to musical knowledge, the scientific-cognitive explanation, although adequate to its own nomotetic aims, is, from the phenomenological perspective of the lived musical experience, an intellectual abstraction. The causal explanation of neuro-physiological states shows the possible material conditions of musical experiential embodiment; as such, its nature is radically different from the phenomenological descriptions – focused on the comprehension of non-conceptual perceptions, motivations, meanings and directly lived significations.

True, the neuro-phenomenologic project of bridging the gap between conscience phenomena (perception, experience, emotion, volition, desires, etc.) and their neuronal correlates (CNC) offers neuro-scientific explanations able to increase knowledge about the unity (or connection) of mind and body. Nevertheless, the question still remains: what can a composer-performer-listener or a musicologist do with these data? He can, of course, satisfy a scientific motivation: these data are candidates for explaining which material (i.e. corporeal) conditions of possibility are required by the correlated lived musical experience. However, as far as the results of the neuro-scientific research still dwell in the limbo of hypotheses, they usually don't become a main concern for musicians. Before becoming interested in knowing which processes take place in the brain as specific neuronal correlates of particular musical experiences (and why it happens), an alert musician prefers to understand how he lives that whose cause the scientists seek to explain.

“The research of the causal why doesn't substitute the description of the experiential how” (Clarke 2002: 283). Indeed, both – explanation and description, science and experience, the why and the how – are distinct aspects of the same reality. Even if in the present state of neuro-phenomenologic research their gap seems insurmountable, the attempt to integrate them is a productive option that deserves to be explored.^[60]

10. Conclusion

The foregoing reflections mainly attempt to show how our condition of embodied beings is constitutively involved in our current musical practices and discourses. In the course of the text I have used arguments inspired in

phenomenology, in neurophysiology and the combination of both, neuro-phenomenology. My working hypothesis has been that the embodiment inherent to our musical perceptions, due to its double character of pre-conceptual intentionality and pre-reflective motricity, is a relevant factor for musical practices and for the constitution of a musical object and its meanings lived in the immediacy of musical experience. We have seen that musical meanings are not assigned rationally from the exterior of musical experience: they are 'always-already' our experiences themselves lived in the plenitude of our perceptual interaction with music. These meanings are primordial and enjoy priority over the secondary and derived significations produced by inferences of the abstract rationality that characterize a good deal of musicological discourses.

I have also tried to show that the state of solitude in which the listener intentionally constitutes an aesthetic musical object can offer specific, inherently musical meanings. Its intersubjective projection is possible because musical objects carry in themselves their own socio-cultural genealogy that enters into the act of intentional perception; and, even if listening to music is, as an intentional perception, a subjective act, it is nevertheless phenomenologically and neuro-physiologically bound to the potentiality of sharing subjectivity with a musical community.

It would be a mistake to interpret the insistence on the embodiment of our musical experiences as a naïve attempt to substitute reason with the body, or intersubjective rationality with subjective experience. Neither is the body in the mind nor is the mind in the body: both phenomena are imbricated in musical experience to such an extent that it seems meaningless – and unnecessary – to create 'clear and distinct' representations of one or the other. As Damasio puts it, "Rationality is probably shaped and modulated by body signals, even as it performs the most sublime distinctions and acts accordingly." (1994: 200). Due to their co-implication, a 'pure body' is as unthinkable as 'pure reason'.

In a reflective return, I recognize the limitations of an essay that ends at the point where it should have begun: showing with dense descriptions the plentifulness of pre-conceptual embodiment which appears in the conscience of somebody who plays, sings, dances, improvises, composes or listens to music. This absence is the reason for the often too abstract character and for its meagre empirical basis. This lack is evident in the absence of intercultural descriptions of musical experiences. It is known, for instance, that different senses promote different uses and produce different meanings among people of other cultures. Furthermore, embodiment is implicated in musical practices and discourses that have specific meanings in their own cultural context.

Despite these and other (probably unconscious) limitations, I hope to have been able to contribute with this essay to reconceptualizing an aspect of (Western) musical theory up to now rarely frequented in Hispano-American musicology.

Finally, once more the ritornello: the embodiment of musical experience as lived meaning is what really counts. Beyond being a word game, perhaps the (only) merit of this essay on the relationship of music and embodiment is that of having searched the words to say (something about) it.

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Notes

- [1] A similar situation dominated up to recent times relative to the research on consciousness, which prompted F. Varela to ask “*Why this current outburst after all the years of silence, when consciousness was an impolite topic even within cognitive science?*” (Varela 1996).
- [2] See also Varela, Thompson and Rosch 1992; B. S. Turner 1991; Csordas 1990, 1994b, 1999; Welton 1998; Weiss and Fern Haber 1999, etc.
- [3] The idea is of Gottfried Leibniz, quoted in the *Musikalische Bibliothek* by Lorenz Mizler.
- [4] See also [Jack Reynolds, <iep.utm.edu/>](http://iep.utm.edu/)© 2001. *The Internet Encyclopedia of Philosophy*.
- [5] Marvin Harris seems to have made a peculiar reading of Husserl when he assimilates phenomenology to Kantian idealism and considers it as a component “...of astrology, witchcraft, messianism, hippiedom, fundamentalism, cults of personality, nationalism, ethnocentrism, and a hundred other contemporary modes of thought that exalt knowledge gained by inspiration, revelation, intuition, faith, or incantation as against knowledge obtained in conformity with scientific

research principles. Philosophers and social scientists are implicated both as leaders and as followers in the popular success of these celebrations of nonscientific knowledge, and in the strong antiscientific components they contain.” (Harris 1979: 315-324).

- [6] Heidegger, for his part, proposes an opening towards intersubjectivity based on the ontic condition of *Dasein*, of the being thrown in the world (Heidegger 2003), who lives in the context of his historic tradition (Gadamer 1975).
- [7] The work of the sociologist, phenomenologist and pianist A. Schütz is situated in the origins of ethnomethodology, of the symbolic interactionism and of the constructivism, in vogue in social theory and in (ethno)musicology of the last decades. See f.i. P. L. Berger and Th. Luckmann (1968), P. Atkinson (1990), J. Bruner (1991), Th. A. Schwandt (1998).
- [8] My thanks to Prof. Antonio Aguirre for bringing to my attention the text by D. Lohmar (2005), director of the Husserl Archive at the University of Köln (Germany).
- [9] I obtained these interviews thanks to the gracious collaboration of John Hounam, an impenitent tango dancer, violinist and leader of the Argentinian tango club at Oxford and of the ensemble *Pasión Canyengue* in London.
- [10] Compare this sentence with J. Guilbault's (2005) statement: "So, far from being 'merely' musical, audible entanglements through competitions also assemble social relations, cultural expressions, and political formations."
- [11] In the materialist perspective of neuro-reductionism, the mental processes of the human being are identified in the end with the cellular and molecular functioning of the brain (Bickle 1998, 2003).
- [12] Some cultural anthropologists propose an abstract and constructivist conception of embodiment when they distinguish between the body [i.e. corporeality] as "a nongendered, prediscursive phenomenon that plays a central role in perception, cognition, action and nature" and embodiment as "a way of living or inhabiting the world through one's acculturated body." (Weiss and Haber 1999: xiv)
- [13] *Le monde est non pas ce que je pense, mais ce que je vis* (Merleau-Ponty 1945: xii).
- [14] *"Nous ne disons pas que la notion du monde est inséparable de celle du sujet, que le sujet se pense inséparable de l'idée du corps, et de l'idée du monde, car s'il ne s'agissait que d'une relation pensée, de ce fait même elle laisserait subsister l'indépendance absolue du sujet comme penseur et le sujet ne serait pas situé. Si, réfléchissant sur l'essence de la subjectivité, je la trouve liée à celle du corps et à celle du monde, c'est que mon existence comme subjectivité ne fait qu'un avec mon existence comme corps, et à celle du monde, et que finalement le sujet que je suis, concrètement pris, est inséparable de ce corps-ci et de ce monde-ci. Le monde et le corps ontologiques que nous retrouvons au coeur du sujet ne sont pas le monde en idée ou le corps en idée,*

c'est le monde lui-même contracté dans une prise globale, c'est le corps lui-même comme corps connaissant (Merleau-Ponty 1945: 467)

- [15] Paraphrase of Merleau-Ponty: *"la philosophie n'est pas le reflet d'une vérité préalable, mais comme l'art la réalisation d'une vérité."* (1945: xv).
- [16] Kant saw it in a different way: "Without intuition there is for us no given object; and without understanding no object can be thought. Thoughts without content are empty, intuitions without concepts are blind." In the original: *"Ohne Sinnlichkeit würde uns kein Gegenstand gegeben, und ohne Verstand keiner gedacht werden. Gedanken ohne Inhalt sind leer, Anschauungen ohne Begriffe sind blind"* (Kant, 1781. *Kritik der reinen Vernunft I/2.: Die transzendente Logik*). More recently, Hayden White, paraphrasing Kant, wrote that historical narrations without analysis are empty, and the historical analyses without narrative are blind (White 1992: 21)
- [17] McAdams' and Bigand's (2004: 1-9) proposal for the systematic exploration of the cognitive, expressed in the research project of high level processes (mental representations, decision taking, inference, interpretation) of musical audition tends to overlook the traits of embodiment and the capacity of pre-conceptual synthesis of aural perception.
- [18] Paraphrase of *"Le monde est non pas ce que je pense, mais ce que je vis, je suis ouvert au monde, je communique indubitablement avec lui, mais je ne le possède pas, il est inépuisable."* (Merleau-Ponty: 1945: xii).
- [19] For a cognitivist perspective of musical perception, see A. O. McAdams and Deliège (eds.) 1988 and Deliège, 2002.
- [20] On phenomenology and modes of perception, see Lewin, 1986.
- [21] In terms of cognitive neuroscience, remembrances and expectations are based upon a "dispositional representation" [i.e.] "a dormant firing potentiality which comes to life when neurons fire, with a particular pattern, at certain rates, for a certain amount of time, and toward a particular target which happens to be another ensemble of neurons." (Damasio 1994: 103-104). For a neuropsychological study of auditive agnosia, see I. Peretz, 2004: 215-248.
- [22] Th. Porcello analyses the temporal stream in musical perception on the hand of the pre-and post-echoes produced by the print-through existing in the old analogical recordings made on magnetic tape. In that these phenomena obstruct the internal time continuity of a musical work or question the perpetual present of ethnographic writing, print-through is "a metaphor for cumulative listening experiences engendered in the mediated social spaces of musical encounter, whether such encounters consist of listening, performing or ethnographic research" (Porcello 1998:486). For other recent applications of phenomenological insights into the study of music, see Harris M. Berger (1999) and Grag Downey (2002).
- [23] According to musicologist Jan Steszewski (to whom I am indebted for this information), Witold Lutoslawski, too, possessed the capacity of perceiving, condensed in one instant, the totality of a particular one of his works.

- [24] For the dualistic rationalism things were simpler. Thus, Rameau wrote: “*Pour jouir pleinement des effets de la musique, il faut être dans un pur abandon de soi-même, et pour en juger, c’est au principe par lequel on est affecté qu’il faut s’en rapporter*” (1754: 3:259).
- [25] See, for instance, his *Fünf Orchesterstücke* op. 16 (1909), or A. Berg’s *Lyrische Suite* in the version for string orchestra (1928).
- [26] See, for instance, his *Oiseaux exotiques* (UE13154).
- [27] Convinced that pitch is a dimension of timbre, Schönberg writes at the end of his *Harmonielehre* (1922) about inventing melodies based on timbre. He himself realised this idea in *Farben*, the third of his *Fünf Orchesterstücke* op. 16.
- [28] I have kept Damasio’s expression “dispositional representations”; however, I indicate in parentheses the rational-linguistic connotation of the term “representation” (Damasio 1994: 100-108).
- [29] My thanks to violoncellist Pau Ferrer, director of Girona’s Municipal Music School, who kindly allowed me to observe some of his cello lessons.
- [30] The theory of the “affordances” has some common points with phenomenology, probably mediated through the Gestaltists, disciples of Husserl, who were Gibson’s colleagues in London (see Sanders 1993, 1996). Concerning a possible relation with Heidegger’s theory of artefacts, see Heidegger 1977, paragraphs 15 and 16, and other texts on *Technik*.
- [31] This description of musical habits is directly inspired in the concepts of habit (or *habitude*) by Merleau-Ponty (1945: 164-172) and of *habitus* (Bourdieu 1980: Chapter 3). For a critical discussion of the relationship between both concepts, see Crosley (2001a). See also Wacquant’s (2004) and Lehman’s (2002) use of the concept of habitus as related to the influence of the social heritage in the education of the musicians of a symphonic orchestra. For empirical methods in the study of performance, see E. Clarke 2004: 77-102
- [32] This fortunate expression has been used by Argentinian pianist Bruno L. Gelber in one of his master lessons presented in the European Mezzo TV station.
- [33] On the neuro-physiologic functioning sound-, somato-sensorial- and visual images in the production of new motor responses, see Damasio 1994: 87-92, 96-108, 232-234.
- [34] Besides these kinds of experiences, based on the *habitus*, there are conscious experiences that have conceptual contents, i.e., that answer to propositional attitudes constitutively vinculated to the human linguistic capacity of formulating statements that specify what one believes, desires, is scared of, etc. (Bermúdez and Macpherson 1998; C. O. Evans 2000; Bermúdez 2003). The conceptual experiences are related to the emergence of the capacity of reflection, “incarnate in a complex cognitive universe”, in whose interior exists the capacity of reflection (Varela 1998: 109-112).
- [35] On the various types of gestures related to music there are ongoing research projects, among which the one undertaken by the University of Oslo

deserves special attention.

See <http://hf.uio.no/imv/forskning/forskningsprosjekter/musicalgestures/>

- [36] On the distinction between conceptual and non-conceptual contents of experience, see Christopher Peacocke (1993).
- [37] R. Scruton calls attention to the relationship between the Kantian forms of sensibility (space and time) and the pre-conceptuality of our experiences. Indeed, according to Kant (1787) experience includes a synthesis of intuition (the sensorial component) and concept (perceptions); this is the reason why perceptions are also representations. However, intuition is also the pre-conceptual order of space and time (“[die] zwei Formen sinnlicher Anschauung als Prinzipien der Erkenntnis a priori”) that aren’t concepts but forms of the intuition which pre-conceptually organise the experience (Scruton 1997: 91-92).
- [38] On the possibility of “thought without language”, see Bermúdez and Macpherson 1998; Evans 2000.
- [39] C. T. lives in Barcelona now, as a retired music teacher.
- [40] The reference to Inuit music culture isn’t arbitrary: in the 1940s a group of missionaries introduced Bach chorals in some Inuit villages of the West Coast of the Hudson Bay. These chorals seemingly used to be sung on evangelical texts translated into Inuktitut in some villages of the West Coast of the Hudson Bay (Rankin Inlet, Eskimo Point). The missionaries recorded these chorals in Los Angeles; however, I wasn’t able to verify if the singers on this occasion were Inuit or missionaries. Whatever the case, this repertoire didn’t become current in the religious evangelical celebrations of the above-mentioned villages.
- [41] My thanks to Prof. Aguirre for giving me the references on Husserl and his own reflections of the problem of the return to an atemporal and undifferentiated beginning.
- [42] This trait of semiology goes back to a ‘visualist bias’ that implies a spatialisation of the conscience in which the knower and the known are separated from each other and considered as essentially different: the one as an impartial observer, and the other as an object of observation (Jackson 1989: 6. See also Fabian 1983: 108).
- [43] Which wouldn’t dispense the author of justifying the ontologic and epistemologic problems implied in the “naturalisation of phenomenology” (Petitot J., F. J. Varela, B. Pachoud y J.-M. Roy 1999: 1-80) – a task that vastly exceeds the author’s capacities and the objectives of the present essay.
- [44] Compare this statement with Koselleck and Gadamer 1997: 92.
- [45] The present section (8.) on the relevance of cognitive semantics for the comprehension of embodied musical experience uses insights developed in more detail by two former texts (Pelinski 1997: 185-201; 2000: 252-281).
- [46] Bandoneonist Daniel Binelli, in Azzi 1991: 63.
- [47] Bandoneonist Rodolfo Mederos en Azzi 1991: 77.
- [48] Bandoneonist Osvaldo C. Montes en Azzi 1991: 79.

- [49] Bandoneonist Osvaldo Piro en Azzi 1991: 81-2.
- [50] ...”y mientras pierde la vida un tango
que el ronco fuele rezonga.”
(Bajo Belgrano, 1926, de F. García Jiménez / A. Aieta)
- [51] “Bandonéon
porque ves que estoy triste
y cantar ya no puedo
vos sabés
que yo llevo en el alma
marcao un dolor.”
(Bandoneón arrabalero.1928. P. Contursi / J.B. Deambroggio)
- [52] ”Buenos Aires, cuando lejos me vi
sólo hallaba consuelo
en las notas de un tango dulzón
que lloraba el bandoneón.”
(La canción de Buenos Aires. 1932. M. Romero / A. Maizani y O. Cúfaro).
- [53] “Malena tiene pena de bandoneón
[...]
tus venas tienen sangre de bandoneón.”
(Malena. 1942. H. Manzi/L. Demare)
- [54] “Sueña el fueye, la luz está sobrando.”
(Tal vez será tu voz. 1943. H. Manzi/S.Piana)
- [55] “Lastima, bandoneón,
mi corazón
tu ronca maldición maleva
[...]
Ya sé, no me digás. ¡Tenés razón!.”
(La última curda. 1956. C. Castillo/A. Troilo).
- [56] The embodied relationship of the musician with his instrument isn't analog to that of the hand with the keyboard of a computer. For Heidegger “Only from the word and with the word is born the hand. The human being doesn't have hands: it is rather the hand which represents intimately the essence of human being, because the word, as the essential domain of the hand, is the essential fundament of the human being. To use a writing machine [i.e. a keyboard] degrades the word to be a means of transportation [...]. In the handwriting, all human beings seem the same.” (Heidegger: *Parmenides*. 1992)
- [57] The interviews referred to have been done by me at the Granada International Tango Festival, in May 1993, and in the autumn of 1998 at the Milonga in Oxford led by John Hounam. Thanks also to J. Hounam; other interviews were done by him at the Milonga *Caminito* in London in 1999.
- [58] To what F. Crick, if he had been Husserl's contemporary, would have answered: "You are nothing but a pack of neurons. Important are the mechanisms, not the words!" (Crick 1994).

- [59] Such projects have existed among the gestalt-psychologists, exdisciples of Husserl (Dupuy 1999: 539-60).
- [60] The actual research work on neuronal equivalences of musical experiences has precedents in the search for physiological and musical correspondences that around 1900 were carried out by the French pianist, composer and theoretician Marie Jaëll. See her bibliography in musicologie.org/Biographies/jaell_marie.html#bibliographie.

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References

- Adorno, Theodor W. 1962. *Einleitung in die Musiksoziologie. Zwölf theoretische Vorlesungen*. Frankfurt a.M: Suhrkamp.
- Aguirre, Antonio. 1968. *Natürlichkeit und Transcendentalität. Der skeptisch-genetische Rückgang auf die Erscheinung als Ermöglichung der Epoché bei Edmund Husserl*. Inaugural-Dissertation zur Erlangung des Doktorgrades. Universität Köln.
- _____ 1982. *Die Phänomenologie Husserls im Licht ihrer gegenwärtigen Interpretation und Kritik*. Darmstadt: Wissenschaftliche Buchgesellschaft.
- Atkinson, Paul. 1990. *The Ethnographic Imagination. Textual Construction of Reality*. London and New York: Routledge.
- Azzi, María S. 1991. *Antropología del Tango. Los Protagonistas*. Olavarría: Ediciones Olavarría.
- Bateson, Gregory. 2000 (1972). *Steps to an Ecology of Mind*. Chicago and London: University of Chicago Press.
- Baumgartner, Elisabeth, et al. (eds). 1996. [*Phenomenology and Cognitive Science: Handbook*](#). Dettelbach: Josef H. Roll.
- Bayne, Tim 2004. “Closing the gap? Some questions for neurophenomenology.” *Phenomenology and Cognitive Sciences* XXX: 1-16, 2004
- Becker, Judith. 2001. “Anthropological Perspectives on Music and Emotion,” In Juslin, Patrick N. and John A. Sloboda. *Music and Emotion. Theory and*

Research. Oxford: Oxford University Press.

- Berger, Harris M. 1999. *Metal, Rock, and Jazz : Perception and the Phenomenology of Musical Experience*. Wesleyan University Press of New England.
- Berger, Peter L. and Thomas Luckmann. 1968. *La Construcción social de la realidad*. Buenos Aires: Amorrortu.
- Bermúdez, José Luis and Fiona Macpherson. 1998 Nonconceptual Content and the Nature of Perceptual Experience.
ejap.louisiana.edu/EJAP/1998/bermmacp98.html
- Bermúdez, José. 2003a. "Nonconceptual Mental Content", *The Stanford Encyclopedia of Philosophy (Spring 2003 Edition)*, Edward N. Zalta (ed.).
plato.stanford.edu/archives/spr2003/entries/content-nonconceptual/
[last substantive content change Jan. 21-2003]
- _____ 2003b. *Thinking without words*. Oxford: Oxford University Press.
- Bernhard, Thomas. 1997. *El Malogrado*. Madrid: Santillana.
- Bickle John. 1998. *Psychoneural Reduction*. Cambridge (Mass.): The MIT Press.
- _____ 2003. *Philosophy and Neuroscience. A Ruthlessly Reductive Account*. Dordrecht:: Kluwer.
- Bigwood, Carol. 1998. "Renaturalizing the Body (with the Help of Merlau-Ponty)," in Welton, Donn (ed.), *Body and Flesh. A Philosophical Reader*. Malden, Mass.: Blackwell, pp. 99-114.
- Blacking, John. 1977. "Towards an Anthropology of the Body." *The Anthropology of the Body*, pp. 1-28.
- Boulez, Pierre. 2003. *La Escritura del gesto. Conversaciones con Gécile Gilly*. Barcelona: Gedisa
- Bourdieu, Pierre. 1980. *Le sens pratique*. Paris: Minuit.
- Bruner, Jerome. 1991. "The Narrative Construction of Reality," in *Critical Inquiry* 18, Autumn, pp. 1-21.
- Butler, Judith. 1993. *Bodies that matter*. New York: Routledge.
- Chalmers, D. 1995. "Facing up to the problem of consciousness," in *Journal of Consciousness Studies*, 2: 200-220.
- _____ 1996. *The Conscious Mind: In search for a fundamental theory*. New York: Oxford University Press.
- Chiantore, Luca. 2001. *Historia de la técnica pianística*. Madrid: Alianza Música.
- Churchland, P.S. and T. Sejnowski. 1992. *The Computational Brain*, MIT Press, Cambridge.
- Churchland, Paul S. 1987. *Matter and Consciousness*. Revised edition. Cambridge, MA:MIT Press.
- Clarke, Eric F. 2002. "Processi cognitivi nell'esecuzione musicale," in *Enciclopedia della musica, vol II: Il sapere musicale*, J.-J. Nattiez (dir.). Torino: Giulio Einaudi, pp. 288-304.

- _____ . 2003. "Music and Psychology." Clayton, Martin, Trevor Herbert, y Richard Middleton (eds.) 2003. *The cultural Study of Music/ a critical introduction*. New York y Londres: Routledge.. Pp. 113-123.
- _____ . 2004. "Empirical Methods in the Study of Performance," in *Empirical Musicology. Aims, Methods, Prospects*, E. Clarke and N. Cook, eds. Oxford: Oxford University Press, pp. 77-102.
- Clifton, Thomas. 1983. *Music as heard: a study in applied phenomenology*. New Haven: Yale University Press
- Crapanzano, Vincent. 1996. " Riflessioni sur corpo, il dolore, la memoria," in M. Pandolfi (ed.) *Perché il corpo*.1996: 156-180
- Crick, Francis. 1994. *The Astonishing Hypothesis*. Scribners: New York.
- Cross, Ian. 1999. "Is music the most important thing we ever did? Music, development and evolution," in *Music, mind and science*. Ed. por Suk Won Yi. Seoul: Seoul National Univ. Press. Pp. 10-39
- _____ 2003. "Music and Biocultural Evolution," in Clayton, Martin, Trevor Herbert, y Richard Middleton (eds.) 2003. *The cultural Study of Music/ a critical introduction*. New York and London: Routledge. pp. 19-30
- Crossley, Nick. 2001a. "The Phenomenological Habitus and its Construction." *Theory and Society* 30: 81-120.
- _____ 2001b. *The Social Body: Habit, Identity and Desire*. Sage.
- _____ 2002. "Habitus, Agency and Change: Engaging with Bourdieu," in *Gendai Shakai-Riron Kenku(Journal of Studies in Contemporary Social Theory)* 12: 329–57.
- Csordas, Thomas J. 1990. "Embodiment as a Paradigm for Anthropology." *Ethos* 18: 5-47.
- _____ 1994a. *The Sacred Self: A Cultural Phenomenology of Charismatic Healing*. Berkeley and Los Angeles: University of California Press.
- _____ (ed.), 1994b. *Embodiment and experience*. Cambridge: Cambridge University Press.
- _____ 1999. "Embodiment and Cultural Phenomenology," in G. Weiss, y H. Haber (eds.) *Perspectives on Embodiment*. New York and London: Routledge, pp.143-162.
- Dahlhaus, Carl. 1997 (1977). *Fundamentos de historia de la música*. Barcelona: Gedisa
- Damasio, Antonio R. 1994. *Descartes' Error. Emotion, Reason, and the Human Brain*, New York: G. P. Putnam's Sons.
- _____ . 1999. *The Feeling of what Happens: Body and Emotion in the Making of Consciousness*. New York: Harcourt Brace and Co.
- Darwin, Charles. 1965 (1872). *The Expression of the Emotions in Man and Animals*. Chicago: University of Chicago Press.
- Davis, K. 1997. "My Body is My Art": Cosmetic Surgery as Feminist Utopia?, in *The European Journal of Women's Studies* 4(1): 23-38,

- Deliège, Irene. 2002. "La percezione musicale." En *Enciclopedia della musica, vol II: Il sapere musicale*, J.-J. Nattiez (dir.). Torino: Giulio Einaudi, pp. 305-334.
- DeNora, Tia. 2000. *Music in Everyday Life*. Cambridge: Cambridge University Press.
- Depraz, N., Varela, F. and Vermersch. P. 2000. "The gesture of awareness," in M. Velmans (ed.), *Investigating Phenomenal Consciousness*. Amsterdam: John Benjamins, pp. 121–136.
- de Sousa, Ronald. "Emotion." En *The Stanford Encyclopedia of Philosophy* (Spring 2003 Edition), Edward N. Zalta (ed.), URL plato.stanford.edu/archives/spr2003/entries/emotion/
- Downey, Greg. 2002. "Listenig to Capoeira: Phenomenology , Embodiment, and the materiality of music." *Ethnomusicology* 48.
- Dreyfus, Hubert L. 1992. *What computers still can't do: a critique of artificial reason*. Cambridge, MA: MIT Press.
- _____ 1996, "[The current relevance of Merleau-Ponty's phenomenology of embodiment](#)," in *The Electronic Journal of Analytic Philosophy*, 4, Special Issue: Existential Phenomenology and Cognitive Science, edited by Mark Wrathall and Sean Kelly, np.
- _____ 1998. "Merleau-Ponty's Critique of Mental Representation: The Relevance of Phenomenology to Scientific Explanation. Intelligence Without Representation," in *Houston Studies in Cognitive Science*, np.
- Dreyfus, Hubert, L. and H. Hall (eds.). 1982. *Husserl: Intentionality, and Cognitive Science* (Cambridge: MIT Press, Bradford Books)
- Dupuy, Jean-Pierre. 2002 [1999]. "Philosophie et sciences cognitives: chronique d'un rendez-vous manqué," in Petitot, Jean, Francisco J. Varela, Bernard Pachoud et Jean-Michel Roy, 2002 (1999). *Naturaliser la Phénoménologie. Essais sur la phénoménologie contemporaine et les sciences cognitives*. Paris: CNRS Editions, pp. 699-724.
- Evans, C.O. 2000 " Prelinguistic Self-Consciousness. On The Paradox of Self-Consciousness ". Review of José Luis Bermudez' book, *The Paradox of Self-Consciousness*. En <journal@princeton.edu>, January 2000 y <mentalstates.net>
- Evans, Gareth. 1982. *The varieties of Reference*: Oxford University Press.
- Fabian, Johannes. 1983. *Time and the other: How Anthropology makes its object*. New York: Columbia University Press.
- Finnegan, Ruth.2003. "Music, Experience, and the Anthropology of Emotion." In Clayton, Martin, Trevor Herbert, y Richard Middleton (eds.) *The cultural Study of Music/ a critical introduction*. New York y Londres: Routledge, pp. 181-192.
- Foucault, Michel. 1976. *Surveiller et punir : naissance de la prison*. Paris: Gallimard.
- _____ 1985. *Herculine Barbin dite Alexina B. ; présentée par Michel Foucault*. Paris : Gallimard, 1985.
- Friedson, Steven M. 1996. *Dancing Prophets. Chicago : The University of*

Chicago Press.

- Gabrielsson, A. 1991. "Experiencing music." *Canadian Journal of Research in Music Education*, 33: 21-26.
- Gabrielsson, A. y S. Lindström. 1993. "On strong experiences of music." *Jahrbuch der Deutschen Gesellschaft für Musikpsychologie*, 10: 114-125.
- Gadamer, Hans-Georg. 1975 (1960). *Wahrheit und Methode*. Tübingen: J. C. B. Mohr
- _____ Hans-Georg. 1997. "Histórica y Lenguaje: Una Respuesta," in R. Koselleck, and H.-G. Gadamer *Historia y Hermenéutica*, pp.95-106.
- Gallagher, Shaun. 1997. " Mutual enlightenment: Recent phenomenology in cognitive science." *Journal of Consciousness Studies* 4/3: 195–214.
- _____ 1998. *The Inordinance of Time*. Evanston, IL: Northwestern University Press.
- Gallagher, Shaun and Jonathan Cole. 1995. "Body Schema and Body Image in a Deafferented Subject," *Journal of Mind and Behavior* 16: 369-390.
- _____ 1998. " Body Image and Body Schema in a Deafferented Subject ," in Don Welton (ed.) *Body and Flesh. A Philosophical Reader*. Oxford: Blackwell. pp. 131-147.
- Gallagher, Shaun and Francisco J. Varela. 2001. "Redrawing the map and resetting the time: Phenomenology and the cognitive sciences," in S. Crowell, L. Embree and S. Julian (eds.), *The Reach of Reflection: Issues for the Phenomenology's Second Century*. Center for Advanced Research in Phenomenology.
- Gallese, V. 2001. "The 'shared manifold' hypothesis. From mirror neurons to empathy." *Journal of Consciousness Studies* 8(5-7): 33-50
- Gibson, James J. 1966. *The Senses Considered as Perceptual Systems*. Boston: Houghton Mifflin.
- _____ 1979. *The Ecological Approach to Visual Perception*. Boston: Houghton Mifflin.
- Guilbault, Jocelyne. 2005. "Audible Entanglements: Nation and Diasporas in Trinidad's Calypso Music Scene." *Small Axe*, Number 17 (Volume 9, Number 1), March 2005, pp. 40-6. [3Indiana University Press](http://www.indiana.edu/~smallaxe/).
- Harris, Marvin. 1979. *Cultural Materialism: The Struggle for a Science of Culture*. New York: Random House.
- Hatten, Robert S. (2004). *Interpreting Musical Gestures, Topics, And Tropes: Mozart, Beethoven, Schubert*. Bloomington: Indiana University Press.
- Heidegger, Martin. 1977 (1927). *Sein und Zeit*. GA. Bd. 2, Frankfurt a. Main: Vittorio Klostermann.
- _____ .1992 (1943/44). *Parmenides*, in *Ausgewählte Werke*, Rafael Capurro (ed.), Vol. 54., (2nd. ed.).
- Howes, David (ed.) 1991. *The Varieties of Sensory Experiences*. Toronto: University of Toronto Press.

- Hürliman, Martin (ed.). 1944. *Beethoven, Briefe und Gespräche*. Zürich: Atlantis.
- Husserl, Edmund. 1911. "Philosophie als strenge Wissenschaft." *Logos* I: 289-314.
- _____ 1973 (1939). *Experience and Judgement*, trans. J. S. Churchill and K. Ameriks, London: Routledge.
- _____ 1959. *Fenomenología de la conciencia del tiempo inmanente*. Buenos Aires: Nova.
- _____ 1952. *Ideen zu einer reinen Phänomenologie und phänomenologischen Philosophie. Zweites Buch. Phänomenologische Untersuchung zur Konstitution*. M. Biemel (ed.) Husserliana. Vol IV. Den Haag: Martinus Nijhoff.
- _____ 1970. *Genetische Phänomenologie und Reduktion*. Den Haag: Martinus Nijhoff.
- _____ 1973. *Zur Phänomenologie der Intersubjektivität*. Texte aus dem Nachlass. 3 vols., I. Kern (ed.). Husserliana – Edmund Husserl, Gesammelte Werke. Den Haag: Martinus Nijhoff.
- _____ 1982 (1913). *La idea de la fenomenología. Cinco lecciones*. México: Fondo de Cultura Económica.
- _____ 1976 (1936). *Die Krisis der europäischen Wissenschaften und die transzendente Phänomenologie. Eine Einleitung in die phänomenologische Philosophie*; Walter Biemel (ed.). Den Haag : Martinus Nijhoff.
- _____ 1996 (1936). *Zur Phänomenologie des Inneren Zeitbewusstseins*. Husserliana, vol. 6; R. Bohm (ed.). Den Haag: Martinus Nijhoff.
- Ingarden, Roman W. 1986 (1933). *The Work of Music and the Problem of its Identity*. Berkeley: University of California Press.
- Ihde, Don. 1976. *Listening and Voice: A Phenomenology of Sound*. Athens, Ohio: Ohio Univ. Press.
- Iyer, Vijay S. *Embodied cognition*. 1998. *Microstructures of Feel, Macrostructures of Sound: Embodied Cognition in West African and African-American Musics*. Ph.D. Diss., Univ. of California, Berkeley.
[cnmat.berkeley.edu/People/Vijay/Music and Embodiment.html](http://cnmat.berkeley.edu/People/Vijay/Music%20and%20Embodiment.html)
- Jackson, Michael. 1989. *Paths toward a clearing: radical empiricism and ethnographic inquiry*. Bloomington: Indiana University Press.
- Johnson, Mark. 1987. *The Body in the Mind. The bodily basis of Meaning, Imagination, and Reason*. Chicago and London: The University of Chicago Press.
- Juslin, Patrick N. y John A. Sloboda (eds.). 2001. *Music and Emotion. Theory and Research*. Oxford: Oxford University Press
- Kant, Immanuel. 1956 (1781). *Kritik der reinen Vernunft*. Hamburg: Felix Meiner.
- Katz, Jack and Thomas J. Csordas. 2003. "Phenomenological Ethnography in Sociology and Anthropology," in *Ethnography* 2003 4: 275-288.
- Koselleck, Reinhart. 1997. "Histórica y Hermenéutica," in Koselleck, Reinhart y

- Hans-Georg Gadamer, 1997. *Historia y Hermenéutica*. Barcelona: Paidós, pp. 86-94.
- Koselleck, Reinhart and Hans-Georg Gadamer. 1997. *Historia y Hermenéutica*. Barcelona: Paidós.
 - Kramer, Jonathan. 1988. *The Time of Music*. New York: Schirmer Books.
 - _____ 1996. *Time in contemporary musical thought*. Special issue of *Contemporary Music Review* (1989-93). Harwood Academic
 - Lakoff, George y Mark Johnson. 1980. *Metaphors We Live By*. Chicago: The University of Chicago Press.
 - _____ 1999. *Philosophy in the Flesh. The embodied Mind and Its Challenge to Western Thought*. New York: Basic Books.
 - Lehmann, Bernard. 2002. *L'Orchestre dans tous ses Éclats. Ethnographie des formations symphoniques*. Paris: Editions la Découverte.
 - Levine, J. 1983. "Materialism and qualia: The explanatory gap." *Pacific Philosophical Quarterly* 64: 354–361.
 - Lévi-Strauss, Claude. 1968. *Mythologiques I. Le cru et le cuit*. Paris: Plon.
 - _____ 1971). *Mythologiques IV. L'homme nu*. Paris: Plon.
 - Lewin, David. 1986. "Music Theory, Phenomenology, and Modes of Perception." *Music Perception*, 3/4:327-392.
 - Lindenberger, Herbert. 1998. *Opera in History. From Monteverdi to Cage*. Stanford: Stanford University Press.
 - Lloyd, M. 1996. "Feminism, Aerobics and the Politics of the Body." *Body & Society* 2(2): 79–98.
 - Lohmar, Dieter. 2005. "On the function of weak phantasmata in perception: Phenomenological, psychological and neurological clues for the transcendental function of imagination in perception." *Phenomenology and Cognitive Sciences*. 2005, 4: 155-167.
 - López Cano, Rubén Gonzalo. 2004. *De la retórica a la ciencia cognitiva. Un estudio intersemiótico de los Tonos humanos de José Marín (ca. 1618-1699)*. Tesis doctoral, Facultad de Filosofía y Letras, Universidad de Valladolid.
 - Lutz, A. 2002. "Toward a Neurophenomenology of generative passages: A first empirical case study." *Phenomenology and the Cognitive Sciences* 1: 133–167.
 - Lutz, A., Lachaux, J.-P., Martinerie, J. and Varela, F. 2002. "Guiding the study of brain dynamics by using first-person data: Synchrony patterns correlate with ongoing conscious states during a simple visual task." *Proceedings of the National Academy of Sciences, USA* 99.
 - Lutz, A. and Thompson, E. 2003. *Neurophenomenology : integrating lived experience into cognitive neuroscience*.
 - Lyotard, Jean-François. 1992 (1954). *La Phénoménologie*. Paris: PUF.
 - Mace, W. M. 1977. "James J. Gibson's strategy for perceiving: Ask not what's inside your head but what's your head is inside of," in R. Shaw & J. Bransford (Eds.), *Perceiving, acting, and knowing* (pp. 43-65). Hillsdale, NJ: Erlbaum.

- Massin, Jean y Brigitte. 1970. *Mozart*. Paris: Fayard
- Maturana, Humberto R. y Francisco J. Varela. 1990. *El Árbol del conocimiento. Las bases biológicas del conocimiento humano*. Madrid : Debate.
- Mauss, Marcel. 1968 (1936). "Les techniques du corps." *Sociologie et anthropologie*. París: PUF
- McAdams, Stephen, Irène Deliège (eds.). 1988 *la musique et les sciences cognitives*. Liège-Bruxelles: Pierre Mardaga.
- McAdams, Stephen and Emmanuel Bigand. 2004. *Penser les sons. Psychologie cognitive de l'audition*. Paris: puf
- McClary, Susan and Robert Walser. 1994. "Theorizing the Body in African-American Music." En *Black Music Research Journal*, vol. 14(1): 75-84. [s. also *TRANS* 4, November 1997].
- McClary, Susan. 1991. *Feminine Endings: Music, Gender, and Sexuality*. Minneapolis, Minnesota: University of Minnesota Press.
- McNeill, D. 1992. *Hand and Mind: What Gestures Reveal About Thought*. Chicago: University of Chicago Press.
- Merleau-Ponty, Maurice. 1945. *Phénoménologie de la perception*. Paris: Gallimard.
- _____ 1968. *The Visible and the Invisible*, Evanston: Northwestern University Press.
- Merriam, Alan P. 1987 (1964). *The Anthropology of Music*. Chicago: Northwestern University Press.
- Meyer, Leonard B. 1956. *Emotion and Meaning in Music*. Chicago: The University of Chicago Press.
- _____. 1989. *Style and Music: Theory, History and Ideology*. Philadelphia: University of Pennsylvania Press.
- _____ 2001 (1998). "Un universo de universales," in Francisco Cruces y otros: *Las Culturas musicales. Lecturas de etnomusicología*. Madrid: Trotta, pp. 233-259.
- Monjeau, Federico. 2004. *La invención musical. Ideas de historia, forma y representación*. Buenos Aires: Paidós.
- Noë, A. and Thompson E. 2004. "Are there neural correlates of consciousness." *Journal of Consciousness Studies* 11 (1): 3–28.
- Núñez, Rafael and Walter J. Freeman (eds.). 1999. *Reclaiming Cognition. The Primacy of Action, Intention and Emotion*. Thorverton: Imprint Academic.
- Núñez, Rafael. 1999. "Could the Future Taste Purple?" in Núñez, Rafael and Walter J. Freeman (eds.) 1999. *Reclaiming Cognition. The Primacy of Action, Intention and Emotion*. Thorverton, pp. 41-60.
- Pandolfi, Mariella (ed.). 1996. *Perché il corpo*. Roma: Meltemi.
- Petitot, Jean, Francisco J. Varela, Bernard Pachoud, Jean-Michel Roy (eds.). 1999. *Naturalizing Phenomenology. Issues in Contemporary Phenomenology and Cognitive Science*. Stanford, CA: Stanford University Press.

- Peacocke, Christopher. 1983. *Sense and Content: experience, thought, and their relations*. Oxford: Clarendon Press.
- _____ 1992. *A Study of concepts*. Cambridge, Mass. MIT cop.
- Pelinski, Ramón. 1981. *La musique des Inuit du Caribou. Cinq perspectives méthodologiques*. Montréal: Les Presses de l'Université de Montréal.
- Pelinski, Ramón. 1997. "The Body in the Music". *Interdisciplinary Studies in Musicology*. Poznań: Poznanskie Towarzystwo Przyjaciół Nauk, Tom 6, pp. 185-201.
- _____. "La corporalidad del tango: Breve guía de accesos," in *Invitación a la etnomusicología. Quince fragmentos y un tango*. Madrid: Akal.
- Peretz, Isabelle. 2001. "Listen to the Brain: A Biological Perspective on musical Emotions," in *Music and Emotion. Theory and Research*, Juslin, Patrick N. y John A. Sloboda (eds.)pp. 105-134.
- _____ 2002. "La musica e il cervello," in *Enciclopedia della musica, vol II: Il sapere musicale*, J.-J. Nattiez (dir.). Torino: Giulio Einaudi, pp. 241-270.
- _____ 2004. "Les agnosies cognitives: une analyse fonctionnelle," in McAdams, Stephen et Emmanuel Bigand 2004. *Penser les sons. Psychologie cognitive de l'audition*. Paris: puf, pp. 215-248
- Petitot, Jean, Francisco J. Varela, Bernard Pachoud et Jean-Michel Roy. 2002 [1999]. *Naturaliser la Phénoménologie. Essais sur la phénoménologie contemporaine et les sciences cognitives*. Paris: CNRS Editions.
- Pike, Alfred. 1970. *A Phenomenological Analysis of Musical Experience and Other Related Essays*. New York: St. Johns University Press.
- Pitarch, Carles. 2003. "Culture, Communication, and Music: A Reflection, and the Suitability of a Communicative Approach to the Study of Musical Cultures in (Ethno)musicology". University of Maryland, (ms).
- Porcello, Thomas. 1998. "'Tails out': Social Phenomenology and the Ethnographic Representation of Technology in Music-Making." *Ethnomusicology* 42/3: 485-510.
- Rameau, Jean-Philippe. [1754] 1967-72. *Observations sur notre instinct pour la musique*. Paris. In Jean-Philippe Rameau: Complete Theoretical Writings, Erwin R. Jacobi (ed.), 6 vols.: American Institute of Musicology, 3:259.
- Rice, Timothy. 2004. "Tiempo, lugar y metáfora en la experiencia musical y en la etnografía," in Martín Galán, Jesús y Carlos Villar-Taboada (coord.). *Los últimos diez años de la investigación musical*. Valladolid: Universidad de Valladolid. Pp. 91-126.
- Rizzolatti, G., Fardiga, L, Gallese, V. and Fogassi, L. 1996. Premotor cortex and the recognition of motor actions. En *Experimental Brain Research* 3: 131-41.
- Rizzolatti, G., Fogassi, L. and Gallese, V. 1997. Parietal cortex: From sight to action, en *Current Opinion in Neurobiology* 7: 562-7.
- Rosen, Charles. 2005. *El piano: notas y vivencias*. Madrid: Alianza
- Roy, Jea-Michel, Jean Petitot, Bernard Pachoud, et Francisco J. Varela (eds.).

2002 (1999). "Comblent le déficit: introduction à la naturalisation de la phénoménologie," in Petitot, Jean, Francisco J. Varela, Bernard Pachoud et Jean-Michel Roy (eds.), *Naturaliser la Phénoménologie. Essais sur la phénoménologie contemporaine et les sciences cognitives*. Paris: CNRS Editions, pp. 1-104.

- Sanders, John T. (1993). "Merleau-Ponty, Gibson, and the Materiality of Meaning." *Man and World*, July.
- _____ 1996. "An Ecological Approach to cognitive Science." [The Electronic Journal of Analytic Philosophy, 4 \(Spring 1996\)](http://www.ejap.louisiana.edu/EJAP/1996.spring/sanders.1996.spring.html).
ejap.louisiana.edu/EJAP/1996.spring/sanders.1996.spring.html
- Sartre, Jean-Paul. 1947. "Une idée fondamentale de la phénoménologie de Husserl: L'intentionnalité." *Situations*, 1. Paris: Gallimard, pp. 31-35.
- Schönberg, Arnold. 1974 (1922). *Armonía*. Madrid: Real Madrid.
- Schütz, Alfred. 1974 (1951). «La ejecución musical conjunta. Estudio sobre las relaciones sociales,» in *Estudios sobre teoría social*. Buenos Aires : Amorrortu.
- _____ 1976 (1951). «Fragments on the Phenomenology of Music.» *Music and Man*, 2 :5-71.
- Schwandt, Thomas A. 1998. "Constructivist, Interpretivist Approaches to Human Inquiry,» in *The Landscape of Qualitative Research. Theories and Issues*, edited by Norman K. Denzin and Yvonna S. Lincoln. Thousand Oaks, CA: Sage Publications, pp. 221-259.
- Scruton, Roger. 1997. *The Aesthetics of Music*. Oxford: Oxford University Press.
- Sheets-Johnstone. 1999. "Emotion and Movement: Analysing their Relationship," in Núñez, Rafael y Walter J. Freeman (eds.) 1999. *Reclaiming Cognition. The Primacy of Action, Intention and Emotion*. Thorverton: Imprint Academic., pp. 259-277.
- Shepherd, John y Peter Wicke. (1997). *Music and Cultural Theory*. Cambridge: Polity Press
- Sloboda, John A. 1985. *The Musical Mind. The cognitive psychology of music*. Oxford: Clarendon Press.
- Smith, David Woodruff. 1999. "Intentionality naturalized?" in *Naturalizing Phenomenology: Issues in Contemporary Phenomenology and Cognitive Science (Writing Science)* Stanford, CA: Stanford University Press, pp. 83-110.
- Smith, F. Joseph. 1979. *The experiencing of Musical Sound: Prelude to a Phenomenology of Music*. New York: Gordon and Breach.
- Solie, Ruth A. (ed.). 1993. *Musicology and Difference*. Berkeley: University of California Press.
- Szendy, Peter. 2001. *Écoute. Une histoire de nos oreilles*. Paris: Minuit
- Thompson, Evan and Varela, Francisco. 2001. "Radical embodiment: Neural dynamics and consciousness," in *Trends in Cognitive Sciences* 5/10: 418–445.
- Thompson, Evan, Alva Noë and Luiz Pessoa. 1999. "Perceptual completion: A case study in phenomenology and cognitive science," in J. Petitot, F. Varela, B.

- Pachoud and J.-M. Roy (eds.), *Naturalizing Phenomenology*, Stanford, CA: Stanford University Press, pp. 161–195.
- Turner, Bryan S. 1991. "Recent Developments in the Theory of the Body," in Mike Featherstone, Mike Hepworth and Bryan S. Turner: *The Body. Social Process and Cultural Theory*. London: Sage, pp. 1-35
 - Turner, Terence. 1994. "Bodies and anti-bodies: flesh and fetish in contemporary social theory," in Thomas Csordas (ed.) 1994. *Embodiment and experience*, pp. 27-47.
 - Van Gelder, Tim. 1999. "Wooden iron? Husserlian phenomenology meets cognitive science," in Petitot, Jean, Francisco J. Varela, Bernard Pachoud, Jean-Michel Roy (eds.) *Naturalizing Phenomenology. Issues in Contemporary Phenomenology and Cognitive Science*. Stanford, CA: Stanford University Press. pp. 245–265.
 - Van Gulick, Robert. 2004. "Consciousness". *Stanford Encyclopedia of Philosophy*. plato.stanford.edu/entries/consciousness/
 - Varela, Francisco J., Evan Thompson y Eleanor Rosch. 1991. *The Embodied Mind. Cognitive Science and Human Experience*. Cambridge, Massachusetts: The MIT Press.
 - _____. 1996. "Neurophenomenology: A methodological remedy for the hard problem." *Journal of Consciousness Studies* 3/4: 330–49.
 - _____ 1997. "The Naturalization of Phenomenology as the Transcendence of Nature: Searching for Generative Mutual Constraints." *Alter: Revue de Phénoménologie* n° 5: 355-385.
 - _____ 1998. "Le cerveau n'est pas un ordinateur. On ne peut comprendre la cognition si l'on s'abstrait de son incarnation." *La Recherche*, No.308 Avril, pp.109-112.
 - _____ 2002 (1999). "Le présent spécieux: une neurophénoménologie de la conscience du temps," in Petitot, Jean, Francisco J. Varela, Bernard Pachoud et Jean-Michel Roy, 2002. *Naturaliser la Phénoménologie. Essais sur la phénoménologie contemporaine et les sciences cognitives*. Paris: CNRS Editions.
 - Varela Francisco y Shear, J. (eds.). 1999. *The View from Within*. Exeter: Imprint Academic. 1586–1591.
 - Villacañas J. L. y F. Oncina. 1997. "Introducción," in R. Koselleck y H.-G. Gadamer: *Historia y Hermenéutica*, pp. 9-54.
 - Wacquant, Loïc. 2004. "Habitus." En Milan Zafirovski (ed.), *International Encyclopedia of Economic Sociology*. London: Routledge. See also <http://www.newschool.edu/gf/soc/faculty/wacquant/papers/Habitus.pdf>.
 - Wallin, Niels. 1991. *Bio-musicology. Neurophysiological and Evolutionary Perspectives on the Origins and Purposes of Music*. Stuyvesant, N.Y.: Pendragon Press.
 - Wallin, Niels L., Merker, B., Brown, S., (eds.). 2000. *The Origins of Music*. Cambridge, MA: MIT Press

- Warwick, K. 2005a. "People and Networks: Cyborg Identity," in D. Birch and J. Lancaster (eds.) *Digital Identity Management: technological, Business and Social Implications*. Gower publishing (in press).
- _____ 2005b. "Robot-Human Interaction: Practical experiments with a Cyborg," in J. Braz, H. Araujo, A. Vieira and B. Encarnacao (eds.) *Informatics in Control, Automation and Robotics*, Kluwer (in press).
- Weber, Max. 1992 (1921). "Fundamentos racionales y sociológicos de la música," in *Economía y Sociedad*. México: Fondo de Cultura Económica.
- Wegman, Rob C. 1998. "'Das musikalische Hören' in the Middle Ages and Renaissance: Perspectives from Pre-War Gwermany," in *The Musical Quarterly*, Vol. 82, N° 3/4, Special Issue: "Music as Heard," pp. 434-454.
- White, Hayden. 1992. *El contenido de la forma. Narrativa, discurso y representación histórica*. Barcelona: Paidós, pp. 19-39.
- Weiss, Gail y Honi Fern Haber (eds.). 1999. *Perspectives on Embodiment. The Intersections of Nature and Culture*. New York and London: Routledge.
- Welton, Donn. (ed.). 1998. *Body and Flesh. A Philosophical Reader*. Malde, Mass.: Blackwell.
- Whittal, Arnold. 1999. *Musical Composition in the Twentieth Century*. Oxford: Oxford University Press.
- Wittgenstein, Ludwig. 1964 (1921). *Tractatus logico-philosophicus*. Frankfurt a.M.: Suhrkamp.
- [Wrathall, Mark y Sean Kelly](#). 1996. Existential Phenomenology and Cognitive Science. [University of California - Berkeley](#). [The Electronic Journal of Analytic Philosophy, 4 \(Spring 1996\)](#).
ejap.louisiana.edu/EJAP/1996.spring/wrathall.kelly.1996.spring.html

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