IMAGERY AND THE COMPOSITION OF MUSIC

An insight into an original compositional method inspired by mental imagery

Volume I

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Submitted for the degree of PhD in Creative Practice (Music) to:

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July, 2016.

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Acknowledgments

I would like to thank my supervisors, Jonathan Owen Clark and Stephen Montague for their invaluable help, constant support, and for sharing their knowledge and experience of music and its theory with me.

Declaration

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This thesis is dedicated to my parents,

my brothers Javier and Luis,

and Mavi.

Abstract

This thesis presents a body of eight original musical compositions inspired by the phenomenology of mental imagery, together with a written commentary which describes in depth the compositional process undertaken whilst composing them, defines the concept 'mental imagery' as applied to this process, and sets the concept within a broad theoretical framework which addresses cognitive sciences, the philosophy of meaning and perception, and music historiography. The study codifies a new and original methodology for music composition based on the author's personal account of mental imagery and its influence or permeation into his practice as a composer.

The written commentary is structured in two chapters. Chapter One begins with a detailed description of the author's notion of mental imagery, which arose as a natural outcome of his subjective compositional practice. Mental imagery is then compared with ideas, concepts and arguments that address extrinsic elements in music and cross-modal categories in perception. The concept of 'mental imagery' proposed by the author, and therefore the whole compositional process described, is discussed through the lens of the ecological theory of perception and the virtual representation of music, which places mental imagery squarely within contemporary accounts in the field of cognitive sciences and the philosophy of perception. A discussion on the topic of musical meaning follows, addressing arguments that define meaning as a multiform, interdisciplinary concept. Chapter One ends with an insight into music analysis research from the second half of the 20th century, leading to the statement that mental imagery might have been neglected by some music theorists in the recent past. It is argued that this is due to a prevailing epistemological framework that gave priority to formal and technical features of musical material. Chapter Two of this written commentary undertakes a deep and detailed analysis of four of the compositions presented. This analysis gives mental imagery a central role in the descriptive discourse, being sensitive to all the arguments discussed in Chapter One. The analytical style resonates with other accounts such as 'performative analysis' by Nicholas Cook (2002) and 'analog mode of discourse' by John Rahn (1979), and borrows key terms from 'vitality affects' by Daniel Stern (1985).

The whole thesis aims to be a valuable example of compositional process inspired by an original, unique and well-described concept: mental imagery. This compositional process codifies new methods or models for compositional practice that may be disseminated to fellow composers. Moreover, the study could also inform performers, theorists and listeners, who may approach their practice in a different light through reflection on the topic of mental imagery and all the associated processes that are here described.

Introduction

Some years ago, my dual activity as composer and pianist encountered a happy coincidence. At the same time as studying Beethoven's piano sonata in C Major op.53 I was composing my very first piano sonata (later named *Piano Sonata no.1 "Formas e simetrías"*, and included in this thesis). While composing my work and performing Beethoven's sonata, I noticed that my perceptual experiences regarding both works included extra-musical elements such as: spatial recreations; imagined body gestures and movements; visual representations of structure or feelings of light intensity and colour. Stimulated by this body of extra-musical sensory perceptions, I decided to deepen my research into their characteristics, a process of self-analysis sometimes referred to as 'auto-phenomenology'[1], which led to the set-up of a project: the composition of a set of pieces inspired and driven by the perceptual experiences mentioned above. This work would codify some new methodologies for composition (based on these perceptual elements) that would arise from my personal processing of these sensorial perceptions as catalysers of musical outputs. These methods, bound into a proposal for a new, original approach to music composition, are described in Chapter Two of this study. During the five-year period between the composition of *Piano Sonata no.1* and *Far* (the last piece presented), my musical language experienced an evolution from a formalist, methodical approach (mostly in structure and harmony) to a more heuristic approach. The study of mental imagery helped me to develop my palette of compositional resources, therefore being able to undertake a much freer and improvisational attitude towards my compositional practice, letting myself be

[1] Eduard Marbach uses the term 'auto-phenomenological reflection' in order to refer to a process of reflection over one's own living experiences. Further, he assumes that auto-phenomenology is the very source for an appropriate concept formation and categorization of the phenomena of consciousness (Marbach 2007).

permeated by mental imagery and being confident that the musical outcomes aroused from this permeation would be aesthetically interesting.

As a starting point, clarification is needed of the *quality* and *nature* of the perceptual experiences that motivated and made this study move forward, a type of quality that we capture in the word 'phenomenology'[2]. I feel it necessary to state from the outset that language and linguistic expression is both an aid and an unavoidable barrier to the full explanation of these perceptions, as some of their qualities are non-conceptual (such as emotions, feelings, sensations, and so forth). The term 'mental imagery' is used in order to refer to all the extra-musical perceptions described in the first paragraph. Further, imagery is in fact a sum of *images*; hence the term *image* is a key concept in this thesis and lies at the heart of most of the arguments and descriptions that will follow. But it is vital at the outset to understand that an image, as understood here, is not restricted to visual elements alone (Damasio 1999). Moreover, images, as defined here, are not static but dynamic, and do not denote an existing physical object but are phenomena that are solely mentally produced. An image features a set of multi-sensorial elements (visual, kinaesthetic, tactile, olfactory, aural, proprioceptive, etc.) and suffused with emotions by an imagined spectator. The spectator is imagined to be placed into the image and can be considered as a self-projection of the composer (in this case, myself). Each image interpenetrates the previous one and the next, thereby creating a perceptual scenic experience subjectively in motion. In simple terms, mental imagery encompasses a set of imaginary situations into which an individual would perceive images, movement, sounds (among other stimuli) and would also feel emotions and different affective states as a result of this stimulus.

[2] See glossary of terms for a definition of 'phenomenology'.

As can be drawn from the previous description, mental imagery encompasses stimuli pertaining to different sensory modalities, among them being visual, motoric, tactile and emotional sensations. This cross-modal nature of the concept is resonant with the idea of 'vitality affects' proposed by Daniel Stern (1985). With this concept, Stern refers to dynamic qualities shared by events pertaining to different sensory modalities, therefore providing a qualitative connection between them. An example of this may be the description of a sound mass as *swelling* and the description of a shade of colour as *swelling*. Both events happen in two different sensory modalities (aural and visual) but share the same dynamic quality (to *swell*). Further, the dynamic qualities of mental imagery affecting my compositions resonate with a descriptive method proposed by the electroacoustic composer Roger Smalley, named 'spectromorphology', intended to serve as a tool to describe electroacoustic compositions. Spectromorphology is a descriptive tool based solely on aural perception, and refers to the temporal dynamics and the ideational motion of sounds. Broadly speaking, spectromorphology addresses mental imagery when describing music which is already composed, while in my compositional process I use mental imagery before and during the composition and hence influencing its outcome.

The creative process described above also motivated an interrogation of existing literature within the related fields of cognitive science, the philosophy of meaning, music analysis and music historiography. The personal experience referred to at the beginning of this introduction has clear relations to the topic of how individuals perceive music, and what physiological processes are in place when individuals process sonic stimuli. Since my own personal experience suggested that imagery plays a central role in the process of music perception, the aim of the

research conducted into the field of cognitive science is merely to provide a theoretical background for the claim that mental imagery really does hold this significant role. Theories of music affordance which account for the possibility of music inducing/catalysing the listener to perceive mental imagery are brought to the fore (Reybrouck 2005; López Cano 2006; Clarke 2005, *et al*). These theories are subsequently rooted in the 'Ecological Theory of Perception' formulated by James Gibson (Gibson 1966 and 1979).

The concept of 'affordance' is a central part of the ecological theory of perception, and represents the sum total of all the actions that an environment is able to offer to an individual (Gibson 1966). Affordances are then discussed from the point of view of musical disciplines; that is, considering music itself as an 'environment' and a listener as an 'individual' inhering in this environment. Arguments proposed by Eric Clarke (2005), Mark Reybrouck (2005) and Rubén López Cano (2006) provide evidence of the multiple, perhaps almost infinite, affordances that music can provide, ranging from the most evident ones (listening) to others that may be inhibited in a concert hall (dancing). A study of all music affordances would of course exceed the scope of this thesis; however a particular category of music affordance (proposed by Reybrouck and López Cano) is discussed in depth. This category is named by López Cano as 'covered motor activity affordance', and refers to any mental simulation of motor activity that a listener can generate while listening to music. Reybrouck also includes the mental simulation of movement as part of his categorization of music affordances. The study of this music affordance is of vital importance in order to understand how imagery affects the musical process in terms of its perception by audience(s), and therefore a discussion of mental simulation is carried out under the rubric of

Charles Nussbaum's theories regarding musical 'representation' (Nussbaum 2007). Musical representation would seem to cover the step between physiological perception (reception of stimuli) and making sense of these stimuli (the subsequent creation of musical meaning). Nussbaum, using arguments derived from the work of Roger Shepard (1981), considers that this precise step is missing in Gibson's ecological theories, and consequently proposes *representation* as the missing step that catalyses the formation of musical meaning. Representation would therefore be a musical affordance arising between reception of stimuli and the creation of meaning. The interrogation of existing literature in the fields of theory of perception, philosophy of meaning and philosophy of perception refined my own account of mental imagery, bringing more elements into it, such as a more detailed account of virtual motion (which in the end refined and shaped my proposed metaphorical connection between virtual motion and musical rhythm).

In my own experience, as a composer who makes conscious use of imagery during the compositional process, imagery has played a central role in the way I explain my musical works to others. Moreover, in the specific situation of explaining my music to performers during a rehearsal, most of the descriptions delivered appeared to be metaphorical connections between the music and imaginary scenarios, movements and feelings. Therefore, it was felt necessary to add programme notes in order to inform the performers, especially in those cases where I am not able to be present during rehearsal.

The previous experience led to another reflection: what is the role of imagery in music analysis? Therefore, research was carried out in the field of music analysis, interrogating existing literature on the topic. Two conclusions were drawn from

this research: (1) there was a general tendency during the mid-20th century onwards to analyse music on the basis of predominantly formal aspects (such as harmonic/pitch organisation, structure, use of rhythm/meter, etc.) and (2), from the late 20th century onwards there was a gradual tendency towards a more varied account of musical elements in analysis, which includes non-formal aspects (such as metaphors referring to imaginary movement, colour or landscape).

In spite of it being a fundamental part of the musical process, I will argue that imagery has been neglected by music historians and analysts, starting from the second half of the 20th century. Authors such as Whittall, Antokoletz or Yates have prioritised writing around the work of composers working in a highly formalist style, giving primary importance to compositional technique, technical progression and 'intra-musical' relationships, while relegating *extra*-musical resources (in particular, imagery) to a secondary or even non-existent role. That these authors chose to highlight technical and formalist aspects of music over others may be proof of the prevalence of a particular epistemological framework for music theory during the last century. The related debate about whether music is a 'document' or an 'event' has been placed within the field of musical historiography for some time, and can be seen to be directly connected with the conception of the multiplicity of forms of meaning by Johnson (2007), a theory of meaning that finds its roots in the philosophy of John Dewey, Wittgenstein, Merleau-Ponty or Husserl. And in relation to musical historiography in particular, Christopher Williams has coined the term 'techno-essentialism' to define the dominant epistemology that has led certain authors to favour formal-technical musical processes over other more non-propositional aspects (Williams 1993). Williams claims that a tendency to consider technological progress as the only

candidate for progress is characterised by an overreliance on measurable and quantifiable elements of the musical material as the only elements that can be analysed and discussed. Moreover, he affirms that this epistemology has led to the idea that those composers who derive musical innovation from formal and intra-musical aspects were somehow more advanced than those whose innovations relied on non-formalist and non-quantifiable aspects of musical technique.

Carl Dahlhaus has proposed a dialectical dichotomy[3] between the 'documental' side of music and the (opposed) 'evental' nature of it (Dahlhaus 1983). He claims that both the musical score, which he calls the 'fixed letter', and the aesthetic presence of a musical work, are two permeable sides of the musical process that are interpenetrating, and are therefore sharing a dialectical relationship. Dahlhaus has also claimed that a view which prioritises only technical process would be an incomplete account of the musical progression, which succumbs to the aforementioned 'techno-essentialist' epistemology.

Finally, I suggest that all of the previous considerations may have strong implications for the practice of music analysis. These implications of course therefore affect my own analytical methodologies, which will be the subject matter of the second chapter of this thesis. Other authors in the recent past have already addressed alternative modes of analytical discourse that depart from the purely formalist hegemony. John Rahn, for instance, has argued for an 'analog' mode of discourse, as opposed to its 'digital' opposite, arguing that the latter can only consider intra-musical relationships, while the former would also account for other forms of meaning, and which may be extrapolated to other works (Rahn

[3] See the glossary of terms for a definition of 'dialectical relationship'.

1979). Both modes of discourse are the basis for his differentiation between ‘theory of experience’ and a ‘theory of piece’.

Rahn describes his ‘theory of experience’ as a description of a listener’s perception of the musical work, a kind of diary of the musical journey, which would be much more personal in flavour than a ‘theory of piece’, the latter being an objective account of its technical resources. Nicholas Cook has also proposed a more ‘performative’ mode of musical analysis (Cook 2002), a form of discourse that might be similar to Rahn’s ‘theory of experience’. Cook claims that an analysis which undertakes a metaphorical construction of the musical experience, as a sort of ‘narrative fiction’, would reveal aspects of the musical process as an ‘event’, which is read by performers or listeners. Further, Cook argues that this ‘performative’ analysis would have more arguable value, due to its greater ability to affect the musical process. As has been pointed out before, arguments by Dahlhaus and Cook, together with theories of meaning (from Johnson, *et al*) and perception (Gibson, *et al*), affect my own analytical discourse, and hence an analysis arises which is reminiscent of both Cook’s ‘performative analysis’ and Rahn’s ‘theory of experience’. Moreover, vitality affects, as described by Daniel Stern and coined in terms such as ‘frantic’, ‘angular’ or ‘bursting’, are widely used in the analysis of my compositions, a procedure that enhances the cross-modal nature of the feelings and sensations present both in mental imagery and my own music.

The second chapter of this written commentary is devoted to an analysis of the compositions presented, focusing on how mental imagery has affected the compositional decisions and the phenomenology of my own perceptions of the pieces in terms of their imagery. It is necessary to clarify that these perceptions

are strictly my own, and may not be identical or even similar for other listeners or performers of my music. Due to the limit of space, only four compositions are analysed and discussed. The choice has been made according to the chronological date of composition and instrumentation, looking for variety in all cases. Hence, the four compositions analysed are: *Natureza e arquitectura* (2012), *Jakobsland* (2013), *Encuentro caballeresco* (2015) and *Far* (2014-2015). The style of analysis used is reminiscent to Cook's 'performative analysis' and Rahn's 'analog mode of discourse'. It addresses the metaphoric connections between mental imagery and music aroused during the compositional process and develops an explanation of the works based on perceptual experience. Extra-musical categories derived from Stern's 'vitality affects' (e.g. 'stumbling' or 'grounded') are introduced in the text referring to dynamic qualities shared by both imagery and music. Mental imagery affecting my compositions is multisensorial and features dynamic and motoric sensations that, according to Stern, may be shared between different sensory modalities. The theory of vitality affects by Stern supports the use of this type of terminology throughout the analysis, and moreover the aforementioned terminology stresses the cross-modal, shared qualities between mental imagery and my compositions, providing a bridge from this study to the field of rehearsal pragmatics.

At the end of this written commentary a concluding section is presented. This conclusion starts out by summarizing the key arguments delivered throughout the thesis and then goes a step further by claiming its value as an original and innovative model for music composition. The compositional process described and presented in this study may stand as an example for other composers, who might undertake a path of self-reflection that could catalyse the arousal of new

artistic inspiration or processes. The ideas and points exposed through this thesis may induce fresh, innovative points of view for performers, who might find in the body of metaphorical connections described a broad set of innovative resources, based on mental imagery, ready to be used in order to enrich their interpretation of scores. 'Metaphorical connections' means a series of linguistic figures that link the music with concepts or descriptions which, by their very nature, cannot be possibly linked in a literal way[4]. A claim is made for the inclusion of mental imagery in the process of music analysis, arguing that imagery might have been neglected in the second half of 20th century by music historians. A proposal is sketched for a possible revisionist account of the relevant analytical texts based on the notion of mental imagery as a fundamental part of the musical process, a proposal that is rooted in the substantial arguments drawn from theory (Gibson, Reybrouck, Nussbaum, Johnson, *et al*). This study aims to describe in detail my compositional process, inspired by mental imagery, and disseminate this compositional model to other musicians (composers, performers, theorists, etc.). By reading this thesis, music practitioners in different musical disciplines may find new, unexplored and alternative points of view that could lead to a richer account of their own practice.

[4] See glossary of terms for a definition of 'metaphor'.

I. Mental imagery in my compositional process:

Meaning, perception and analysis

May we not say that the basic ingredient of music

is not so much sound as movement?

Roger Sessions

1.1 MENTAL IMAGERY AND MUSICAL MEANING

The central idea that catalysed this research study and its practical outcomes emerged when working on the composition of the first movement of my *Piano Sonata no.1 "Formas e simetrías"*, at the beginning of 2010 (for the score of this composition, see Volume II, page 5). At the same time, my commitments as a performer required the study of both Beethoven's piano sonata op.53 "Waldstein" and Haydn's piano sonata Hob. XVI:34 in E minor. A natural process of influence between the music I was studying as a performer and the music I was creating as a composer subsequently occurred. However, these influences did not appear in the form of motivic or melodic similarities but as parallels in balance and proportion of form/structure. I remember myself being permeated by images featuring abstract concepts such as pure geometric forms and volumes. Moreover, this mental imagery was furnished with imaginary sensations related to space: feelings of closeness - openness, narrowness - broadness, or darkness - brightness appeared as inseparable qualities from the imagery.

The creative event described here, which I noticed while composing the first movement of *Piano Sonata no.1 "Formas e simetrías"* and studying both Beethoven's and Haydn's piano sonatas, prompted me to reflect deeply as a composer, leading to a more detailed and sophisticated analysis of how mental imagery was affecting my compositional process. From this reflective and analytical process, I discovered that many diverse imaginary stimuli were clearly influencing the initial planning and further musical unfolding of the first movement of *Piano Sonata no.1*. These stimuli pertained to various different sensory modalities, including the visual, tactile, proprioceptive, kinaesthetic and aural, therefore building a set of multisensorial imaginary stimuli. In addition, I noticed that emotional states and moods were an inherent quality pertaining to the set of multisensorial stimuli described above. Imagined emotions such as joy or nostalgia were playing a fundamental role, providing additional qualities to the imaginary stimuli. The inclusion of moods and emotions into the process opened a new scenario: since moods and emotions need a living being in order to exist, I came to the conclusion that an imaginary individual was being mentally projected by me into the scene, someone who would receive all the imaginary multisensorial stimuli described before, as well as experience all the emotions and moods imagined. Further, this imaginary individual may be considered a projection of me in the virtual scenario, a framework which resembles the Musical Landscape Metaphor described by Mark Johnson (2007) and discussed in subchapter 2.1.1.1 (page 71)[5].

[5] However, the Musical Landscape Metaphor would be seen here from the perspective of the composer imagining the music and not from the perspective of the listener listening to the music.

1.1.1 A definition of mental imagery affecting my compositions

Building upon the explanations and considerations given in the previous paragraph, the set of imaginary stimuli, moods and emotions is a complex, multisensorial and multidisciplinary entity. For simplicity's sake, I will encompass all these imaginary feelings into one concept: *mental imagery*. Mental imagery affecting my compositional process is therefore a set of 'images' which are mentally produced. Each image is a dynamic aggregate of sensory-motor perceptions that include visual, aural, tactile, proprioceptive and kinaesthetic feelings (among other things). Each image is also concerned with the dynamic qualities of the moods of an imaginary individual while he/she perceives the aforementioned aggregate of sensory-motor perceptions. Each image, which is dynamic rather than static, interpenetrates the previous one and the next, thereby creating a perceptual scenic experience subjectively in motion[6].

Mental imagery, as described before, has been consciously used during the compositional process of the eight works presented as the practical outcome of this PhD thesis. Before and during the creative process of each piece, I let myself be permeated with mental imagery, a mechanism of absorption and internalization that fell into the materialization of sonic entities influenced by it. As mentioned, mental imagery affected the compositional process before writing the first shape/note/sketch (it affected pre-compositional planning) and during the compositional process (it influenced details from the piece or even motivated changes in the initial planning). When approaching the composition of each of the

[6] The definition of mental image proposed here is connected with the concept 'image' proposed by Antonio Damasio (1999), in which he defines image as an entity not restricted to visual elements and permeated by other sensorial perceptions. My definition of mental image resonates as well with concepts such as 'body schema' (Kolb 1959; Gallagher 2005), 'body image' (Gallagher 2005) and 'image schema' (Johnson 1987 & 2007).

eight works presented, a sketch or plan was designed first. This sketch or plan stood as an initial proposal for the general shape of the piece, outlining its structure and direction. Mental imagery influenced this initial plan by mapping a succession of moods, emotions and sets of stimuli pertaining to different sensory modalities. Thus, each section from the initial plan was furnished from the outset with a framework of emotions/moods/stimuli developed from mental imagery. During the compositional process, mental imagery also influenced the creative outcome by affecting more detailed decisions. Especially important were imagined kinaesthetic stimuli, which affected rhythmic and metric behaviours in the pieces, and also visual stimuli such as brightness or darkness, which affected textures and harmonies.

1.1.2 The evolution of my compositional process in relation to mental imagery

It is necessary to clarify that the influence of mental imagery in the compositional process was not systematised at any stage of this research; hence there has never been a fixed relationship between qualities from mental imagery and musical features. In fact, the relationship came more through a heuristic approach, letting myself be permeated by the qualities of mental imagery and then conveying a musical outcome by 'finding' the musical decisions that most satisfied my demands at each stage. However, a certain degree of rigidity, especially in regard to intervallic/harmonic choices and planned musical form, was present when composing some of the earlier works presented. In pieces like *Piano Sonata no.1 "Formas e simetrías"* and *Sendeiros imaxinarios* (especially its first movement, *Claroscuro*) a palette of intervals and chords were metaphorically associated with imagined light intensities, therefore implementing a degree of systematization in the creation of harmonies. Broadly speaking, the intervals of a perfect fifth and a

perfect fourth, and hence chords built by superposition of any of these intervals, were metaphorically linked with brightness. On the other hand, intervals such as major and minor thirds were connected with imaginary darkness, as well as chords obtained by superposition of any of these thirds. Needless to say that these relationships were far more complex and subtle, but a deep and detailed analysis of them would require an excessively long subchapter that would fall outside the aim of this study. The slight rigidity propitiated by the associations described above was abandoned during the composition of *Jakobsland* (see Volume II, page 69), when a much more intuitive and heuristic approach to harmony was taken.

1.1.3 In search of a theoretical background

The conscious use of mental imagery in my compositional process, together with the deep reflective process that it catalysed regarding my creative practice, opened an interest in the field of the philosophy of musical meaning, the philosophy of perception and cognitive sciences. The aim was to find a scientific and philosophical basis on which the original and personal account of mental imagery (as explained above) affecting my compositional process could be supported. The understanding of *how* music conveys meaning and the nature of musical meaning may help to suggest connections between mental imagery and music. Modern theories in the fields of cognitive science and the philosophy of perception were studied in depth, in particular the ecological theory of perception (Gibson 1966; 1979) and representational theories by Charles O. Nussbaum (Nussbaum 2007). Moreover, research was also done in the field of psychology of perception with a detailed study of the experiments carried out by John A. Sloboda (Sloboda 2005).

Following the conclusions drawn from the aforementioned research in the fields of the philosophy of meaning, cognitive science, the philosophy of perception and psychology of perception, a second research question arose: has the phenomenology of mental imagery been slightly neglected by music theorists and historians in the recent past? This research question led to further study in the field of music historiography and music analysis, and also led to an interrogation of texts from the second half of the 20th century about music history and analysis. All the theories previously referred to, which address different fields of knowledge, are raised and discussed in this chapter, providing background and support for my original and personal compositional process which is influenced by mental imagery. The following subchapter will discuss the ecological theory of perception, how it can be applied to a musical context, and how mental imagery might be addressed as part of the process of music perception in light of this theory. However, first I will acknowledge the similarities found between the process of involving mental imagery described above and a descriptive method proposed by the electroacoustic composer Roger Smalley.

1.2 OTHER ACCOUNTS OF VIRTUAL DYNAMICS

1.2.1 Spectromorphology

Mental imagery in my compositional process, and especially elements related to imaginary movement and kinaesthetic sensations, in some ways resembles what the electroacoustic composer Roger Smalley has named ‘spectromorphology’. Smalley coins the term ‘spectromorphology’ to describe some of the acoustic results in electroacoustic music. Spectromorphology “is not a compositional

theory or method, but a descriptive tool based on aural perception" (Smalley 1997, p.107). The term describes the listening experience of electronic music, and refers to the interaction between sound spectra and their temporal dynamics.

Smalley makes a clear separation between intrinsic and extrinsic features of music, the former being sound events themselves, together with related formal processes and relations in a work, and the latter being any *associations* with extra-musical content that a listener may experience when listening. In the following quote, Smalley (1997, p.110) makes a claim for the importance of these extrinsic features:

> "…a piece of music is not a closed, autonomous artefact: it does not refer only to itself but relies on relating to a range of experiences outside the context of the work. Music is a cultural construct, and an *extrinsic* foundation in culture is necessary so that the intrinsic can have meaning. The intrinsic and extrinsic are interactive."

Further to this, Smalley claims that the sonic world of electroacoustic music both enhances the imagination and activates extrinsic connections for several reasons; among these he includes the "motion of colourful spectral energies" and the "exploration of spatial perspective" (Smalley 1997, p.110). The fact that he refers to motion here suggests that he does not limit the extrinsic connections to other acoustic extra-musical elements, but also to non-sounding kinaesthetic or visual elements: "Non-sounding extrinsic links are also possible, whether based on human physical movement (…) or environmental experience. For example spectromorphology is concerned with motion and growth processes, which are not

exclusively or even primarily sonic phenomena: sonic motion can suggest real or imagined motions of shapes in free space" (Smalley 1997, p.110).

When comparing spectromorphology with my concept of mental imagery, several connections can be found. Both concepts refer to extrinsic elements of music that show a multisensorial nature. Further, Smalley refers explicitly to concepts such as motion, shape, space, colour or growth: these are visual and motoric ideas that are also featured in the mental imagery that affects my compositions. The most important difference between Smalley's spectromorphology and my concept of mental imagery lies in the direction of the process: Smalley proposes a descriptive tool in which connections with imagined visual/motoric perceptions arise after the aural perception of music. Mental imagery affecting my work arises before the music, permeating myself as a composer and hence influencing the outcome of the creative process.

The dynamic qualities used by Smalley in order to describe the 'extrinsic' features of electroacoustic music share similarities with the dynamic qualities acknowledged by the psychiatrist Daniel Stern when describing perceptual mechanisms in infants. These dynamic qualities, named 'vitality affects', are described and put in relation to mental imagery in what follows.

1.2.2 Vitality affects

Mental imagery as described earlier in the chapter is a heterodox entity that features several different imagined qualities: visual, tactile, kinaesthetic, aural, olfactory, motoric and emotional (among others). This nature points to the fact that my mental imagery works across different sensory modalities. This cross-modal nature resonates with a concept proposed by psychiatrist Daniel Stern,

named ‘vitality affects’, which he defines as “qualities [of experience] that do not fit into our existing lexicon or taxonomy of affects [but that] are better captured by dynamic, kinetic terms such as ‘surging’, ‘fading away’, ‘fleeting’, ‘explosive’, ‘crescendo’, ‘decrescendo’, ‘bursting’, ‘drawn out’, and so on” (Stern 1985, p.54). With vitality affects, Stern refers to dynamic qualities that may apply to phenomena occurring in different sensory modalities but however share a similar dynamic nature. An example of this could be the ‘attenuating’ quality of sound, light or motion, which is felt in different sensorial channels but shares the same dynamic contour. Stern mentions that vitality affects refer to qualities that don´t fit into our existing *lexicon* of affects, an argument that may reveal that language is a barrier to the full explanation of certain qualities pertaining to mental imagery. This point is of crucial importance for the subject matter of Chapter Two, in which some of my compositions will be analysed and discussed in depth. Terms inspired by Stern’s vitality affects, such as ‘angularity’, ‘bustling’ or ‘frantic’ will be used in order to describe qualities in the music that are connected with qualities from mental imagery. As an example, the part of the baritone in Solisdán’s sonnet from *Encuentro caballeresco* (see Volume II, page 146) is described using the term ‘rush of sound’, a term which is described by Stern as a ‘vitality affect’.

Other authors such as Mark Johnson (2007) and Maxine Sheets-Johnstone (2011) have addressed Stern’s vitality affects in their research. Mark Johnson states that the concept gives a profound insight into the nature of meaning in general, no matter if that meaning comes from music, language or vision (Johnson 2007, p.144). To understand the forms and qualities of musical meaning plays an important role within this study, since it may throw some light on how to explain

the connections between mental imagery and music. So far we have addressed the concept of 'vitality affects' and how Mark Johnson brings the concept into his account of musical meaning. The following section is a step forward on this topic, where the 'Embodied Theory of Meaning' by Mark Johnson will be discussed.

1.2.3 The Embodied Theory of Meaning

The philosopher Mark Johnson (2007, p.9) states that, "meaning traffics in patterns, images, qualities, feelings, and eventually concepts and propositions." This assertion appears in the context of his proposal for an 'embodied' theory of meaning, in which meaning arises from the interaction of the individual's body with the environment and with the association of this interaction with past, present and possible future experiences[7]. As Johnson states, conceptual content is just one part of meaning, which is not limited by conceptual/propositional content[8]. Thus, to transpose this back into a musical context, even when a composer focuses on a particular form of meaning, the nature of the message that the listener will receive may be constructed by a sum of elements of quite a different nature, among them being the mental imagery we have discussed.

Following arguments by Johnson and Nöe, meaning would naturally arise from perceptual experiences rooted in the past and from our expectation regarding future perceptual experiences. In a related vein, Christopher Small (1998) refers to the *relational* quality of musical meaning when defining his concept of 'musicking', arguing that musical meaning derives from the relationships between

[7] The importance of experience in perception is also accounted by Alva Nöe, who states that the ability of perception comes partly from the accumulation of experiences that one appreciates as relevant (Nöe 2013).

[8] Nöe refers to the non-conceptual side of perceptual experience, claiming that perception is not constrained by merely what we are able to grasp in thought (Nöe 2013).

all the forces involved in the act of creating music (composer, performer, listener, score, culture, society, etc.)[9].

Theories of meaning by Johnson and Nöe, if applied to musical meaning, might point to the fact that music moves listeners through a set of multisensorial, interdisciplinary stimuli, rooted in our experience and our capacities as individuals, which reach our perception through a variety of channels (sensory apparatus, imagery, memories, etc.). Since composers, performers and listeners share these same typologies of perception, it might be argued that this set of multisensorial stimuli happen for each, either as a conscious or unconscious process when perceiving music. For example, the opening of *Claroscuro* (see Volume II, page 40) was inspired by a feeling of expectant stillness together with a sense of progressively increasing brightness. A listener or performer, when listening/playing this piece, would therefore have another multisensorial experience which may be completely different from the one sensed by me when composing.

The conscious use of mental imagery when composing *Piano Sonata no.1 "Formas e simetrías"* prompted an interest in the field of cognitive sciences. The ecological theory of perception, discussed in the following subchapter, will be addressed as a theoretical framework that explains what the role of mental imagery is in the whole process of how we perceive music.

[9] It is possible to find a common origin for all these theories in the philosophy of John Dewey, particularly in his theories of knowledge. Dewey proposed the principle of continuity versus dualism, rejecting the traditional dualism of mind-body and giving to the body and the sensory apparatus a fundamental role in the process of acquiring knowledge (Dewey 1916; Boydston ed. 1980).

1.3 MENTAL IMAGERY IN MUSIC PERCEPTION

1.3.1 The ecological theory of perception

Formulated originally by James Gibson (Gibson 1966; 1979), the theory differs from cognitivist's theories in the symbiotic relationship proposed between environment and individual. Gibson claims that the environment is not a passive entity that contains an amount of chaotically organised stimuli, but a dynamic and changeable body of structured information that individuals perceive by adapting their sensorial system to the environmental characteristics (a process referred as 'tuning' by Gibson)[10].

Gibson coined a new term to name a central concept in the ecological theory of perception, and this concept is 'affordance' (Gibson 1966). Affordances refer to "what things furnish, for good or ill. What they afford the observer, after all, depends on their properties" (Gibson 1966, p.285). With the word affordance we isolate what perceived realities offer to the one who perceives them, what *possibilities* they give to an individual. As an example, for a human being the perception of a tree can afford protection from the rain, or act as a structure for climbing, or for eating, in the case of those trees that bear fruit. But for a bird, the perception of the same tree also affords a living environment. What makes the concept of 'affordance' a key aspect of the ecological theory of perception is the fact that it encapsulates the symbiotic relationship between environment and individual. Gibson (1979, p.122) states this clearly: affordances are "something that refers to both the environment and the animal in a way that no existing term

[10] Eric Clarke argues that the tuning of the individual with the environment is not, however, some kind of happy accident, but is a response to the plasticity and flexibility of the nervous system within the context of our ability to shape our environment. Further, Clarke points to three factors that characterise the theory: perception-action, adaptation and perceptual learning (Clarke 2005).

does. It implies the complementarity of the animal and the environment". After all, affordances depend on both the nature of reality and the nature of the perceiver[11].

1.3.1.1 The ecological theory of perception applied to music

There is a large body of work done in the field of music philosophy about the question of how music conveys meaning and what the nature of musical meaning is[12]. London refers to this, and points out three ways in which music can be meaningful: it can have representational, linguistic and expressive meaning (London 2000). The question of meaning attribution is made all the more curious due to the fact that, at a basic ontological level, what we call 'music' is nothing more than a series of vibrations or non-vibrations within the medium of air that our auditory system perceives and our brain processes. But this belittles the important issue, which is what really *moves* people when listening, or how we construct such rich meanings when listening to music. The ecological theory of perception can provide a path for understanding how listeners attribute meaning from something as simple as sound and silence.

In a musical context, the perception of sound may induce listeners into the performance of a varied number of actions, which do not have to be exclusively physical. These actions can vary from body movement (dance, foot-tapping, etc.) to the formation of mental imagery or just to the fact of focussing more attention

[11] This argument is also defended by Clarke (2005, p.44): "the ecological position rests on the premise that perceptual specification is a reciprocal relationship between the invariants of the environment and the particular capacities of the perceiver".
[12] Kivy 1989, Nattiez 1990, Agawu 1991, Hatten 1994 and 2004, Chua 1999, Cook 2001, *et al.*

on a particular instrument or timbre[13]. Since these actions are the product of encountering sonic information from the environment and also depend on the abilities and capacities of the listener, they are 'musical affordances', a concept discussed in the following section.

1.3.2 Musical affordances

In order to bring the concept of 'affordance' into a musical context, it is important to clarify the exact nature of it. Rubén López Cano (2006, p.3), for example, states that affordances "are the performances offered by the objects, the stock of actions we are able to do within the environment. By means of the affordances meaningful relationships arise from the environment." As López Cano points out, affordances show the relationship between perceiver and perceptual information, but in the case of music they work as a starting point to construct meaning from that relationship. The action or actions that any music induces in a listener, which are necessarily its musical affordances, are the first step for a listener in an ongoing process of meaning attribution that begins with the ontological reality of music (the physical vibrations of sound). Therefore, affordances in music occupy a central role in the process of creation of musical meaning, which at the end is what produces affects and emotional states in listeners.

Clarke, as well as the musicologist Luke Windsor, has adopted an approach that considers musical affordance as a huge, almost infinite, concept. In Clarke's own words: "music affords dancing, worship, co-ordinated working, persuasion, emotional catharsis, marching, foot-tapping, and a myriad other activities of a

[13] Clarke (2005) argues that sometimes these possible actions induced by music can be interrupted by social and cultural conventions, like those surrounding listening to music in the Western concert hall environment.

perfectly tangible kind" (Clarke 2005, p.38)[14]. On the contrary, Reybrouck has adopted a much more restricted view of musical affordances, focusing more on the role of the body in musical-cognition processes. He lists just five possible affordances of music (Reybrouck 2005):

1. The sound producing actions proper[15];
2. The effects of these actions;
3. The possibility of imagining the sonorous unfolding as a kind of movement through time;
4. The mental simulation of this movement in terms of bodily-based image schemata;
5. The movements which can be possibly induced by the sounds.

I would like to place more attention on the third and fourth affordances. Reybrouck considers the possibility of imagining the flow of sound as a movement through time in terms of 'bodily-based image schemata'. And this particular affordance leads us directly into the field of mental musical imagery, our central topic.

Following the same line of argument as Reybrouck, López Cano proposes a typology of musical affordances that is divided into two large categories: 'Manifest motor activity' affordances, and 'Covered motor activity' affordances. For the former, López Cano (2006, p.5) proposes the definition "all visible external movements that each segment of music allows us to execute along with it

[14] Clarke includes interpretation and musical criticism as examples of musical affordances, as interpretation, interpretative writing and speaking can also be considered forms of action (Clarke 2005, p.204).

[15] This might be arguable. From the point of view of musical performance, it is argued that the action that is necessary to produce a particular sound will always occur before that sound reaches the performer's auditory system; therefore that action could never be a consequence of the sound perception itself, and thus it could never be an affordance of the music.

while we listen". The latter arise when "music permits us to exercise non-visible corporal activities" (López Cano 2006, p.6). These affordances, as López Cano explains, can be divided into several subgroups depending on what exactly the individual imagines while listening to music. An important claim I want to make at this point is to suggest that both Reybrouck's 'mental simulation of movement' and Cano's 'covered motor activity' refer to very similar music affordances, which are in fact related to the importance of the formation of mental imagery in the process of music perception. Affordances of the music related to virtual movement are useful for describing potential meaningful interpretations of some sections of the compositions presented. For example, the folkloric dance from Section C of *Jakobsland* (see Volume II, page 88) may induce listeners to form a mental simulation of dance-like movements.

1.3.3 A missing step: The virtual representation

So far we have discussed how music is perceived by the listener from the perspective of the ecological theory of perception, and on this basis an explanation was given on the nature of what particular musical affordances are and how these affordances can be best understood. But there is still a step in between the perception of music and the nature of potential listener action (music affordance) that has not been covered yet. This step is core to understanding the question of how musical meaning might arise, which is a question of research that has been much discussed in the literature[16]. In order to cover this missing stage between the perception of auditory input and a listener's action I will focus my efforts in the subsequent section on explaining how music works as a

[16] Nattiez 1990, Agawu 1991, Hatten 1994 and 2004, Chua 1999, *et al*.

representational art, or more precisely how the listener produces a virtual internal representation of music in his/her mind and how this leads to afforded actions[17].

Roger Shepard explains how he feels there is something missing in Gibson's theory, specifically in relation to *visual* perception. In his words: "To say that there is sufficient information in the proximal stimulus and even to point to some of the higher-order variables in which the information resides is not to describe the mechanism that extracts the information and uses it to control appropriate behaviour or additional cognitive processing" (Shepard 1981, p.285). It seems that Shepard is missing the step, discussed previously, between process(es) of perception and consequent process(es) of action.

In order to fill the gap between perception and action, Charles Nussbaum (2007) introduces a new concept into the process, which has a symbolic nature: the 'virtual representation'. Symbols, and among them surrogates[17], are informational vehicles which have the capacity to reduce uncertainty, but they are also much more than that. They are more complex than signals[18] and require sophisticated modes of perception in order to extract the information they contain. Symbols therefore 'represent' the structure of perceived reality. Bringing this back once again into the field of music, a virtual representation of a piece of music would be

[17] Gibson rejected the idea that we make virtual internal representations of the environment when perceiving it. However, he did take into account the possibility of the existence of *external* representations (virtual, not real) of this same reality (Gibson 1979). He named these external representations 'surrogates', virtual associations whose structural configuration refers directly to the structure of the environment and helps the perceiver to reach a deeper understanding of this reality and its potential meanings. Gibson considered absolute music as a surrogate, which is revealing in itself: it implies that although Gibson clearly rejected the notion of internal representations and hesitated about the existence of musical meaning in absolute music, he did consider the existence of structural information in the music of being capable of being encoded in a virtual representation.

[18] A signal is a source of information about an event or environment that does not contain structural information of it, a "not *syntactically* structured" (Nussbaum 2007, p.25) object or event.

thus a symbol, as it has enough complexity to carry information about the structure of the musical material.

1.3.3.1 The virtual representation of music

In line with the previous arguments of Nussbaum, I might venture to propose that a virtual representation (a three-dimensional mapping of the structure of music) would be created in the listener's mind from the stimuli (sonic vibrations) that are perceived through his/her sensorial system. The virtual representation would work as the additional step between perception and action, missed by Shepard (1981)[19].

Note that this does not imply that Gibson's ecological theory of perception is rendered invalid; moreover, it works as a further explanation of how an individual processes information from an already structured environment. Hence, considering the arguments maintained by Gibson, Shepard and Nussbaum, the scenario of an individual receiving sonorous stimuli and then producing a virtual representation of the sonorous unfolding that would serve as a vehicle of structural information and contribute to the processing of meaning might be accepted.

After matching the theories of virtual representation with the ecological theory of perception by placing representations in between the perception and processing of structural information, it is perhaps worthwhile and useful to go a bit further and discuss *what kind* of sensorial information the representation supplies to the perceiver. If we refer to the perception of music, a listener creates a virtual

[19] Shepard argues that, in the case of rich and unambiguous perceptual events Gibson's theories may be plausible. But, when the individual perceives an environment of ambiguous and chaotic perceptual events, a deeper explanation about how the brain processes these inputs is clearly needed (Shepard 1981; 1984). Nussbaum agrees with Shepard on this (Nussbaum 2007).

representation of it in his/her brain that supplies structural information in the form of *temporal, spatial and motoric* perceptions[20].

Lerdahl and Jackendoff's 'generative theory' of music (Lerdahl & Jackendoff 1985) refers to the flow of movement in sonic material. Their theory can be compared to generative linguistic theory that divides a sentence into several smaller entities organised in a tree-form structure (syntaxes). Following this methodology, for Lerdahl and Jackendoff the musical surface can be subdivided into smaller structures that work as part of a whole unit in a similar tree-form hierarchy. They proposed, as both Nussbaum and Shepard have, that the listener receives the structural information that is contained in the musical surface by accessing internal representations. In parallel, Nussbaum focuses on the comparison between generative linguistics and generative music structures, particularly on the parallel relationship that exists between the time-span structure of music and the intonation pattern of language (prosody). Following this, Nussbaum argues that speech patterns are closely related to motoric patterns that involve gestures of the whole body, and finally links this argument with the generative theory of music by Lerdahl and Jackendoff:

> "Prosodic speech patterns, it is clear, are closely allied with *gesture*, behavior patterns that involve principally the hands but also the whole body. As a matter of fact, the trees that Lerdahl and Jackendoff use to represent both the time-span and prolongation reductions are (…) organised in the manner of motor control hierarchies and task-level action plans." (Nussbaum 2007, pp.40-41)

[20] Spatial, temporal and motoric terms have ubiquitously been used in order to describe musical gestures and nuances (Sessions 1950; Besson & Schön 2002).

Nussbaum's reflections are of great importance for our purposes, because they suggest that it is possible to hypothesise a common origin for language and music. As the prosodic patterns of language are closely related to motoric gestures of the whole body, this would allow us to think that music is also rooted in inner sensations of a motoric nature. These arguments resonate with feelings of movement and kinaesthetic sensations that are part of mental imagery affecting my compositional process (as defined at the beginning of this chapter, page 24). Imaginary movements and imaginary kinaesthetic perceptions derived from corporeal movements influenced some of the compositional choices in the pieces presented with this study, especially in terms of rhythmic behaviour. A good example of this relationship can be seen at the beginning of *Natureza e arquitectura* and subsection b3 from Section B of *Jakobsland* (see pages 87 and 77 for an analysis of both pieces).

The point made by Nussbaum provides a theoretical background for kinaesthetic perceptions furnishing mental imagery and in the end affecting my compositional process. Research in the field of neuroscience has also contributed to the study of these imaginary kinaesthetic perceptions via the theory of mirror neurons, which is discussed below.

1.3.3.2 Mirror neurons

Recent studies in the field of neuroscience show that there is little difference between the perception of a virtual movement of the body and the final realization of this particular movement. These studies claim that certain neurons in the brain, named 'mirror neurons', reproduce exactly the neurological processes needed for a particular body movement when this is seen in the environment or imagined by

the individual (Stamenov & Gallese 2002; Gallese 2008; Rizzolati & Sinigaglia 2008; Churchland 2011). Nussbaum and Clarke have utilised these new discoveries in the field of neurology in order to complete their theories regarding motoric perceptions that are obtained from virtual representations of the environment. The idea of mirror neurons gives us a solid neurological background to the theory of motoric perceptions obtained from the virtual representations of music.

1.3.4 Motor imagery

Recall that the ecological theory of perception led us directly to the concept of 'affordance', and more precisely to the concept of 'musical affordance', which refers to any action whatsoever that music is able to induce in its listeners. The theories of virtual representation proposed by Nussbaum, Shepard and others work as a step in between perception and information processing: a listener perceives sonic events through the sensory systems and then produces a virtual representation of the music which supplies him/her with complex information. Therefore, the fact of creating a virtual representation of music is an action induced in the listener by the music, and is hence a musical affordance. I shall now provide a bit more detail on this subject, discussing musical representation through the lens of the theories of affordance proposed by Rubén López Cano and Mark Reybrouck that were discussed earlier.

Among the subgroups in which López Cano divides the so-called 'covered motor activity affordances', there is one he names 'corporal extension'. In this subcategory López Cano includes affordances consisting of imagining an extension of our own body performing any kind of movement in an imaginary

space. The perception of musical events may induce in the listener a similar action of imagining his/her body projected into a kind of virtual reality. In this virtual space the projected body performs movements induced by music. López Cano (2006, p.7) states:

> "Music is movement; acceleration, retention, precipitation, statics, ascending and descending fragments, etc. On occasions music permits us to experience sensations of corporal movement that we do not effectuate in reality but that we project onto it. […] Through it we move in imaginary spaces. We move in ways that would be physically impossible."

It is easy to see that the topic of mental imagery covers a huge field that includes every single imaginary situation, picture, space or sensorial event that we can derive from musical listening. But what is described above is a very particular kind of mental imagery called 'motor imagery', 'motor simulation' or 'ideomotor simulation'.

The concept of 'motor imagery' is defined by Mahoney and Avener (1977) as a: "dynamic state during which a subject mentally simulates a given action. This type of phenomenal experience implies that he/she feels himself or herself performing a given action without actual manifestation of this action" (quoted in Reybrouck 2001, p.129). This musical affordance is of great potential in trying to understand the temporal, spatial and motoric dimensions of music in terms of imagery. Through motor imagery, we are able to project ourselves into imaginary spaces. We then experience an embodied spatial perception in which our projected body, with its movements, works as a receptor of this experience and is at the center of it. Reybrouck argues strongly for the idea of motor imagery, stating that

what matters here is the mental simulation of a sonic unfolding through time. He argues for the existence of listening strategies based on a motor encoding of the temporal articulation of the sounds, thereby suggesting that listening involves motor preparation without actual motor output[21]. Music is often described as just sound and silence, or as vibrations of the air that reach our auditory system. But music also affords to be perceived as a movement through time, and not only from a metaphorical point of view but also from an actual embodied point of view. Nussbaum also addresses the existence of motor imagery in music perception, stating that it comes as a consequence of the development of virtual representations. Moreover, Nussbaum links motor imagery with the theory of mirror neurons, and uses both points to complete his whole theory of music perception:

> "The internal representations employed in recovering the musical structure from the musical surface specify motor hierarchies and action plans, which, in turn, *put the listener's body into off-line motor states that specify virtual movements through a virtual terrain or a scenario possessing certain features*" (Nussbaum 2007, p.47, italics added).

This might well account for the link between motor imagery and some of the features characterizing my definition of mental imagery affecting my compositional process, which is given at the beginning of the chapter (see page 24). During the composition of the works here presented, I let myself be permeated by mental imagery featuring a set of multisensorial stimuli and also moods and emotions felt by an imaginary spectator. This scenario is clearly

[21] Reybrouck (2001, p.129) uses the term 'enactive listening' to describe a process of listening that "takes the human body and its actions as a reference", making in addition a distinction between overt and covert action from the body, stating that enactive listening involves motor imagery.

connected with the ‘corporal extension’ affordance proposed by López Cano, the idea of motor imagery taken from Mahoney and Avener (1977), mental simulation affordance proposed by Reybrouck and the motor hierarchies included in Nussbaum’s representational theories.

1.3.4.1 Motor imagery in relation to my compositional process

At a base level, all the theoretical processes explained previously have aimed at setting out the basic perceptual phenomenology of a listener’s musical experience, and how a listener builds up meaning from the succession of sound and silence that we call ‘music’. The ecological theory of perception and the notion of motor imagery might describe what happens in the mind of listeners when perceiving music, something that may lead us to argue that imagery plays a vital role in the process of music perception. In the field of the philosophy of perception, Reybrouck and López Cano have accounted for motor imagery as a broad affordance of music with several other affordances further subject to this affordance (such as the covered/overt motor activity affordances). Nussbaum has also proposed a whole theory of virtual representation in order to explain how we get from the sensorial perception of music to the creation of musical meaning. Further, real experiments in music psychology carried out by Sloboda suggest that virtual representations, and hence imagery, actually exist when perceiving music. By virtue of all the previous considerations, I strongly argue for the enhanced study and awareness of motor imagery in music perception, both when composing and performing music, an awareness that may lead to a richer communication between composer, performer and listener since mental imagery will add fresh and innovative forms of meaning into the communicative process.

This study was motivated in the first place by a personal artistic circumstance: the conscious use of mental imagery before and during my compositional activity. These mental images have special characteristics, which are defined and discussed at the beginning of this chapter (page 24). The research carried out in the field of cognitive science and the philosophy of perception, derived from the artistic event described above, led to the location of several theories and arguments that appeared to resonate with the nature of mental imagery affecting my compositions. Furthermore, the theories of perception brought in during this chapter stand as general theories that apply to every human subject, since we all share similar mechanisms of perception and communication. Following this, I would venture to claim that mental imagery (not my own and subjective imagery, but mental imagery in general and for every individual) has always been used by composers, past and present. This claim leads us into the following subchapter, in which the presence of mental imagery in music history and analysis from the recent past will be analysed and discussed. However, before carrying out this excursion into historiography, I would like to point out some empirical evidence for the use of mental images or patterns in music perception, including those provided by experiments led by the music psychologist John Sloboda.

1.4 EMPIRICAL EVIDENCE: THE EXPERIMENTS OF JOHN SLOBODA

Recent research in music psychology has provided empirical evidence for the fact that imagery plays an important role in music processing. Experiments conducted by John Sloboda reveal that there may be a link between the capacity for creating mental representations and the capacity for memorizing and reproducing a

melody. The methodology used to prove this consisted of asking students (both musicians and non-musicians) to sing from memory a folk tune immediately after listening to it for the first time. Notes were made on both the level of the accuracy of reproduction, and the idiomatic kind of mistakes that each individual made. When analysing the results, Sloboda (2005, p.89) concludes that: “memorizing simple, well-formed tonal melodies involves building a mental model of the underlying structure in which not all of the surface detail is necessarily retained.” Note that these findings by Sloboda might provide some empirical evidence for the theories of musical representation provided by Nussbaum and may actually happen for all individuals to a higher or lesser degree when listening to music. In fact, Sloboda claims that the difference in accuracy of response when recalling the folk tunes might find an explanation in the different levels of mentally-represented structures that each individual achieved: “We have evidence that different levels of structure are available to people with differing amounts of musical expertise. Musicians code harmonic relationships that seem less accessible to non-musicians” (Sloboda 2005, p.89). However, he goes on to state that there is a common ground for both musicians and non-musicians, and this common ground may well be the process of mentally mapping the structure of a melody whilst listening to it. The level of complexity of the mental representation varies between individuals, with those with a higher level of musical expertise producing more complex mental representations than those with no musical expertise at all, but as Sloboda (2005, p.89) states: “Subjects seem to share the pool of basic melodic and rhythmic building blocks.” Sloboda puts his findings in relation to several generative theories of music, such as the ones by Lerdahl and Jackendoff (1983), Sundberg and Lindblom (1976), Longuet-Higgins (1976) and

Steedman (1977). However, he prefers to see the conclusions as: "pointers to aspects of memory and representation for which, as yet, no well-developed theory exists" (Sloboda 2005, p.90) rather than empirical evidence to reinforce these existing theories.

Sloboda also relates musical ability in a general way with the capacity to create mental representations of the structure of music. He states that general musical ability cannot be measured by, for example, accuracy of performance, as either a composer or a music theorist, who may be poor performers, may well be very capable musicians in another sense. Therefore, when trying to find a common attribute that accomplished musicians of different fields share, he states that: "much contemporary research on music supports the notion that there is indeed such a common attribute, which is the ability to *make sense* of musical sequences, through the mental operations that are performed on sounds (whether real or imagined)" (Sloboda 2005, pp.301-302). Musical ability therefore correlates strongly with the capacity for producing virtual representations of the music and then deducing a logical and meaningful order/structure from this representation[22]. For Sloboda (2005, p.302), "This kind of finding suggests that people generally store something more abstract than the actual words or notes." In the case of music, I would like to further suggest that this 'more abstract' element might well be the ability to form *mental imagery*.

[22] This idea is supported by other empirical studies, such as those by Sloboda and Parker (1985) and Oura and Hatano (1988). These studies suggest that people who are able to 'make sense' of the mentally mapped structures tend to produce plausible structural substitutions when asked to recall memorised music.

1.5 MENTAL IMAGERY IN MUSIC HISTORY AND ANALYSIS

Both Nussbaum's theories and Sloboda's experiments on virtual representation, discussed in the previous section, suggest that mental imagery plays a key role in any act of music perception, from listening to composing. If musical ability is, as Sloboda claims, directly linked with the capacity for producing and processing virtual representations of the music, then it would be surprising if composers were not using any imagery or representational frameworks whilst creating. This idea leads to the hypothesis that imagery may have been unjustly neglected by music historians in terms of accounts in the literature of composers' work. I will here focus only on the literature from the second half of the 20th century in investigating this claim.

1.5.1 An interrogation of existing literature

The majority of approaches to music found in the literature from the second half of the 20th century are highly formalist in style, revealing a tendency to consider technical aspects of the compositional process (such as the treatment of form, harmony, motif-development and pitch material selection) as the most important aspects of a composer's art. However, some exceptions were found, either as isolated sections that are part of a mainly formalist focused text, or entire books that have adopted a different approach. A very interesting case study concerns the work of the musicologist Arnold Whittall, who has authored several books about 20th century music (Whittall 1977; 1982; 1999; 2003; 2008). As an example of the different approaches to the analysis of musical material just mentioned, we can find divergences in the account given of the music of Jean Sibelius, if we compare the texts from 1977 and 2003. In the 1977 text, Whittall focuses much more on

formalist aspects of the compositional process, as can be seen for example in the following fragment: “The presence of thematic statements and restatements, along with strong contrasts of mood and tempo, provide a basis for defining the structure as the diversification of a unity” (Whittall 1977, p.21). What follows this fragment (placed at the beginning of the analysis) is basically an explanation of Sibelius’ use of orchestration, form, tonality, and so forth. But surprisingly, Whittall’s methodology is substantially different in his 2003 text. In this book he undertakes a deep analysis of Sibelius’ *Tapiola* (1925), where he describes the work as an attempt of “interaction between those ‘impersonal, elemental natural processes’ and human awareness of them – even if that ‘awareness’ involves resistance as well as acceptance” (Whittall 2003, p.11). Later on, Whittall refers to bars 356 and 569 of Sibelius’ work as “embodying troubled humanity’s terror and despair in face of the god’s ‘self-disclosure’ – a sense of the human contemplating an intimidating form of otherness” (Whittall 2003, p.11). It is possible to notice from these fragments that Whittall made a much wider use of *metaphoric* images in order to describe Sibelius’ music in his later 2003 book.

The music historian Peter Yates favours again a formalist approach to music analysis in the 20th century. In a subchapter from his 1968 text, focused on the music of Alexander Scriabin, the author concludes that the composer never reached a situation in which he had embraced complete atonality, while other composers from the period were starting to produce the first experiments in just this way, thereby categorizing Scriabin as a less modern or avant-garde position than other composers in his milieu: “His last two piano sonatas, the Ninth and Tenth, and the last Preludes, opus 74, stop just short of discovering atonality. The interest of the music is great, yet compared with the mature contemporary

keyboard works by Debussy, or the *Six Little Piano Pieces* by Schoenberg in which the atonal answer is admitted, Scriabin's forcing of the emotion and lack of economy are evident" (Yates 1968, p.141). It might be argued that this statement is based on a partial approach to analysis as it takes into account not even the whole compositional process of Scriabin but a small part of it (his use of tonal harmony). And further, Scriabin is well known to have been innovative regarding the use of extra-musical material in order to prioritise compositional decisions, particularly the influence of colours as can be seen in his last symphony *Prometeus: The Poem of Fire*[23].

It is not only texts written in the 1960s-70s that are highly formalist in content. Elliott Antokoletz's text from 1992 is, also, dominated by a formalist approach to music analysis. The chapter devoted to the music of Béla Bartók deals with the composer's compositional process and its evolution during his life. Passages such as the following show how the author prioritises Bartók's use of harmony: "Bartok's freer tonality (largely achieved by sudden major-minor mixtures) and almost continuously dissonant texture (based on pervasive use of appoggiaturas and sevenths) may be primarily associated with the more daring harmonic fabric of Strauss' works" (Antokoletz 1992, p.107). However, there is no mention of the highly innovative use of rhythm that Bartók developed, or the fact that this rhythmic language affords being imagined in terms of popular Hungarian dance. Further to this, the subchapter devoted to Leoš Janáček adopts a similar approach, as Antokoletz places Janáček's works squarely in terms of their harmonic language, and its contemporaneous influences. The analysis of Benjamin Britten's *War Requiem* is also highly formalist in its approach, as the following fragment

[23] This symphony includes an instrument named *clavier à lumières*, designed specifically for this work, which would project coloured light on a screen.

reveals: “In this work, traditional forms and procedures (fugue, chaconne, ritornello, etc.) serve as the framework for nontraditional pitch-set relations, which include the modal, octatonic, and whole-tone interactions characteristic of the Bartók and Stravinsky idioms” (Antokoletz 1992, p.509).

The 1993 volume by Schwartz and Godfrey includes a mixture of different methodologies regarding music analysis. We can, for instance, find ‘image-based’ analysis in their approach to George Crumb’s *Ancient Voices of Children* (1970): “In Crumb’s music pitch logic, time, texture**,** and sound colour all contribute to a stark, phantasmal sound-scape that seems ideally matched to Lorca’s words” (Schwartz & Godfrey 1993, p.233). However, they also provide a categorization of the music between 1890 and 1945 that is based on purely formal aspects, such as the use of chromatic harmony, atonalism or novelties of form/structure. Further within this text, the analysis that the authors provide of Penderecki’s *Threnody for the victims of Hiroshima* (1960) is surprisingly formalist in its approach, as it just describes the use of clusters and remarks about orchestral texture: “More than any other such work from this period (including those by Ligeti and Xenakis), it has come to exemplify the use of texture as the primary basis for musical ideas and their organization. For virtually all of its eight-minute duration, *Threnody* consists exclusively of textural blocks, clusters, and densely intersecting polyphonic strands” (Schwartz & Godfrey 1993, p.218). This account of Penderecki’s work is just a description of the compositional technique used, and as such provides no reference to any possible imaginary connections between the soundscape created by this process and the tragedy enacted at Hiroshima.

Moving to other authors, Alastair Williams (1997, p.xi) makes a statement that is reminiscent of the findings of John Sloboda. Williams claims that “musical

creativity is intimately linked to the exploration of subjectivity within a global space of simultaneous possibilities." With such a statement, he may be alluding to the suggestion that abstract thinking (which includes mental imagery, representation and metaphor) enhances musical creativity. As discussed earlier, Sloboda came to a similar conclusion via his experiments in music psychology. But Williams provides us too with some less formalist and more metaphoric approaches to music analysis, as can be noted from the following section, which refers to Ligeti's *Melodien* (1971): "The spatial shapes, symmetries, expansions and contractions of *Melodien* are clearly audible; and within these formal shapes the shimmering webs and interlocking lines provide differentiated and sensual articulations of space, offering an ephemeral beauty that constantly renews and transforms itself through a logic of disintegration" (Williams 1997, p.84). Williams does not limit his analysis solely to Ligeti's technical processes of contraction/expansion and symmetrical shape of the melodies; moreover he relates them to the affordable imaginary link with virtual spatial structure, and the emotional states of mind that these shapes might afford the listener.

1.5.2 Document or event: A debate in music historiography

As remarked previously, a substantial number of examples from the literature support the argument that, during the mid-20th century, there was an analytical tendency to stress formalist/technical aspects when discussing music. However, if we fall back on, in a musical context, the theories of embodied meaning by Johnson, Nöe, and so on, discussed earlier in this chapter, we may be able to present the counter argument that formal relationships in music represent just *part* of its meaning and not its only meaning. In fact, we have seen how Johnson in particular argues for a substantially enlarged concept of meaning, derived from

the work of Dewey, which not only contemplates meaning in terms of propositional knowledge but also prioritises relevant trans-experiential linkages in the life history of an individual as meaningful in their own right. Further, if we were only to consider formal issues as the only source of musical meaning, we would surely succumb to a type of 'objectification' of the musical work, thereby contradicting Christopher Small's important concept of 'musicking' that we have defended previously. Moreover, Johnson's claim for an enlarged concept of meaning, taken together with this concept of 'musicking' is related to what Clifford Geertz refers to as a 'thick description', as opposed to a 'thin description', which in this case we could interpret as the strictly formalist approach to music analysis. Clifford Geertz discusses this concept under theories and discourses surrounding Culture, stating that: "analysis, then, is sorting out the structures of signification (…) and determining their social ground and import" (Geertz 1973, p.7). Geertz borrows the concept from Gilbert Ryle (Ryle 1971), and it will be important in what follows, which pursues these additional definitions of meaning within the literature in philosophy.

1.5.2.1 Philosophical context

The above arguments that concern the *non-propositional* qualities of meaning have their support in modern philosophy, for example in the work of Andrew Bowie, that links thinking about music with contemporaneous philosophical discourse (Bowie 2007). Bowie gives an account of how Ludwig Wittgenstein, for example, links the concepts of 'logic' and 'music' as vehicles that make meaning possible within the world. However, Wittgenstein also places a distinction between what is 'intrinsic' to the world and what lies outside it. For Wittgenstein, everything within the world "is contingent and is expressed in propositions which

can be true or false" (Bowie 2007, pp.271-272). There are 'unsayable' things (corresponding to things like logic and music) that are 'conditions' for the world and lie outside it (Bowie 2007, p.271). Thus, Wittgenstein proposes a dichotomy between propositional knowledge (the ontological world) and the meaning of these propositions (the epistemological world), an argument that shares some resemblances with the work in music of Carl Dahlhaus (an argument that highlights the fact that music is fundamentally 'intermedially interpenetrated') (Dahlhaus 1983).

Maurice Merleau-Ponty also provides an account of the differentiation between objective and non-objective things in the word. He states that, when referring to the field of psychology, it is necessary to find, beneath objective knowledge, the things without which there would be no objective knowledge (Merleau-Ponty 1978). These things 'without which there would be no objective knowledge' can be compared with Wittgenstein's 'unsayable' things (among which he placed the domain of music aesthetics).

This philosophical background is of great importance for supporting researchers such as Johnson, Clarke, Reybrouck, Nussbaum or Gallagher, from whom this thesis utilises theories, thoughts and concepts of importance such as the ecological theory of perception applied to music, the embodied theory of meaning, or the trans-experiential meaning of 'image'.

1.5.2.2 Epistemologies in the field of Art

A music theorist, when analysing a composition or the style of a particular composer, is always making choices (consciously or unconsciously) about which aspects of the music are relevant and which are not, subsequently creating a type

of musical partitioning or segmentation out of these choices. Thus, the musical theorist is always already embedded into a series of epistemological choices that he/she has to undertake. According to Nicholas Cook (2002), these epistemologies in music theory have not followed a coherent epistemic plan or unified framework during recent history. He cites Carl Dahlhaus's distinction between the three basic traditions of music epistemology (Dahlhaus 2002). The first tradition, in place during the Renaissance, focused on certain intervallic structures, and was embedded into a theological epistemology that aimed to reveal how the design of the universe was manifest through music. The second, in place during the 17th and 18th centuries, was focused on the codification and classification of musical material, and culminated in the grand semiotic projects of the Enlightenment. Finally the third tradition, which commenced in the late eighteenth century, is characterised by particularism (the focus on individual works of art) and, according to Dahlhaus, has been in place up until our own times.

But to return to Cook for a moment, he argues that, during the 20th century, music analysis found inspiration in the interpretation of literary texts, leading music theory to be caught between two large epistemological traditions. These two traditions are, in Cook's words, on the one hand, "rationalist methods for the purposes of discovering a truth which lies outside the text and, on the other, broadly hermeneutical approaches directed at a truth which lies, so to speak, within it" (Cook 2002, p.81). These two chains of thought bring clearly to the forefront the differentiation between music as an object/text and music as an activity/event. An epistemology that objectifies music as text would produce music theory under a hermeneutical rubric, while epistemologies that consider music to be as much about the text as other extra-musical relationships would

produce a music theory that pursues a truth not only within the text but outside it. I argue in favour of the latter, as this clearly resonates with the arguments introduced in this chapter regarding musical affordances and musical representation. We saw there how music perception occurs by virtue of a tripartite relationship between sound, perceiver and representation that lies outside the formalist (textual, conceptual) model of musical relationality (Nussbaum 2007). In the next section I will discuss the epistemological framework in place during part of the 20th century, which in music analysis led to the use of a highly formalist style by some music historians.

1.5.2.3 The 'scientific' epistemology: Techno-essentialism

As discussed before, a large amount of music history texts written during the 20th century approach music theory and analysis from a predominantly formalist perspective (Whittall 1977, Yates 1968, Antokoletz 1992, *et al*). It can be concluded that the epistemology that prioritised formal elements and technical resources within the compositional process has been dominant during this time. This epistemology, referred to by Cook as 'scientific' epistemology, has been defended (among others) by Milton Babbitt (1972, p.3), who claimed that "there is but one kind of language, one kind of method for the verbal formulation of 'concepts', whether in music theory or in anything else: 'scientific' language and 'scientific' method." These are strong words indeed, but are not altogether surprising considering the highly rationalised and structured compositional process of Babbitt himself. Keith Johnston (1981) has also referred to the formalist approach to music analysis as the 'standard' way of talking about what we hear in musical compositions, describing the process as a magnification of the structural relationships by assigning to each musical structure a functional label.

Further, he argues that this type of approach is an "underdeveloped mode of musical explanation, (…) a restrictive mode which hinders our perceptions of the "phenomena" in and of a composition" (Johnston 1981, p.335). Under the scope of all the different theories of perception, virtual representation and mental imagery discussed both in this chapter and the previous ones, I might venture to agree with Johnston on the claim that an exclusively formalist approach to analysis provides only a partial account of the compositional process, since it neglects the formation of imagery in particular as a fundamental part of it.

The nature of the 'scientific' epistemology as the dominant tendency during the 20th century is extensively discussed by Christopher Williams (1993), who has coined the useful term 'techno-essentialism' to describe it. He takes Robert Morgan's analytical text *Twentieth Century Music* (1991) as a point of departure in order to provide concrete evidence for his argument. In this way, he is able to critique certain omissions and preferences found in the text that, from his point of view, respond to a tendency for stressing solely the technical aspects of music, stating that Morgan neglects certain innovative features that fall out of his own partitioning, leaving room only for "styles that draw their vitality from sophisticated techniques of systematization, like total serialism" (Williams 1993, p.59). The previous quote presents a good example of what Williams understands as the techno-essentialist approach to music history and analysis. Moreover, he claims that there are also certain ingrained patterns of thinking about 20th century music that have been replicated in book after book (such as the analysis of the formalist organization of pitch or the account of orchestral/instrumental resources used), thereby creating a general framework of assumptions. The core assumption in this framework is, according to Williams (1993, p.37), "an insistence on

progress as the highest goal of aesthetic effort" that led music historians to make value judgments based on standards of technical development, standards that might not refer accurately to the cultural significance of a piece of art. Further, he states that this framework of assumptions produces an automatic negative discrimination vis-a-vis composers whose main contribution relied on less quantifiable elements, precisely, the non-conceptual features of human expression.

1.5.2.4 Dahlhaus and dialectics

Similar arguments proposed by Carl Dahlhaus present a dialectical relationship between the 'document' and the 'aesthetic presence' of a musical work[24]. Dahlhaus describes an epistemological framework in which tension exists between the narrative and aesthetical impulses in music historiography (Dahlhaus 1983). Cook accounts for the epistemological framework proposed by Dahlhaus in order to support his distinction between seeking a truth outside the text or within it. Dahlhaus's dialectical framework is also cited by Anne Shreffler (2003), who states that both sides of the dialectic, which approach the musical work either as a 'document' or as a 'work', are completely legitimate and the choice between them depends on the individual goals of the music historian. Both sides represent opposed poles that interpenetrate each other during the analytical process, thereby introducing a dialectical relationship and not a separate duality. It might be concluded from Dahlhaus's proposal and from other musicological accounts of it (Cook 2002, Shreffler 2003) that the German historiographer considered purely intrinsic (textual, formalist) relationships in music as only *part* of the musical

[24] This is reminiscent of Hans Ulrich Gumbrecht's opposition in art between the effects of 'presence' and 'meaning', and draws on the aesthetic theory of Niklas Luhmann, who stresses that art is a mixture of perception and communication (Gumbrecht 2004, Luhmann 1995).

process and not all of it. Further, he clearly defends this position by claiming that the musical process is more an ‘event’ than an immobile, fixed document. In Dahlhaus’s words:

> “the ‘fixed letter’ capable of being passed down to posterity is less important than the actual musical process, which we might describe as the ‘event’ that emerges partly from the written composition, partly from its realization in performance and partly from the modes of musical perception, with these three factors interacting on equal terms so that performer and listener are no longer subjected to the tyranny of the composer.” (Dahlhaus 1983, p.6)

Dahlhaus proposes here a definition of ‘musical process’ that is reminiscent of Small’s concept of ‘musicking’, stating that music emerges from the interaction between several contexts. The ‘fixed text’ is the music score and contains all its formal relationships, and would be just one part of the musical process as so defined. Hence, it might be claimed that the analytical texts that provide a highly (or even totally) formalist approach are presenting an arguably incomplete account of the musical process. Moreover, these texts would be neglecting the perceptual processes discussed earlier in this chapter regarding the musical affordances related to imagery (López-Cano, Reybrouck), and also regarding theories of musical representation (Nussbaum).

Similar ideas can be found in texts by George Knepler, who claims that there has been an attempt to separate music from its communicative function, in favour of considering its purely syntactical, intra-textual functions. According to Knepler (1977, p.43-44), the problem appears when syntactical relationships are

considered to be the only valuable element so that the "syntactical analyses, which would be better called descriptions of procedures, are pretentiously and arrogantly taken to be the whole story."

Further to this, these ideas are perhaps reminiscent of Theodor Adorno's theories regarding art and society. As Max Paddison (1993) states, Adorno argues in favour of a sociological critique of art via analysing its function in industrialised societies. Adorno was very concerned with the productive forces of society as a crucial factor in both the production of art and its critical function within society. For him, art is social in its mode of production and in the social impact of its thematic material, but much more importantly in the fact that "art becomes social by its opposition to society" (Adorno 2004, p.296). Therefore, social forces might well be at the root of the evolution of not only the aesthetics of art, but also the epistemological frameworks that affect music analytical style.

1.5.3 Implications in music analysis: a performative analysis

All the arguments discussed up to this point might have strong and deep implications in terms of how to adequately conceptualise what composers have done in the past. In fact, Merleau-Ponty (1978) had already considered these implications when he distinguished between *behaviour* and *intellectual operation*, claiming that the understanding of things comes through the assimilation of a new behaviour and not through solely via intellectual operation. Once again, this position is similar to Dahlhaus's music as 'event' versus music as 'document', and therefore also similar to Small's concept 'musicking'. In this section I will discuss several arguments by J. Rahn (1979), B. Boretz (1977) and N. Cook (2002) that discuss modes of analytical discourse which are sensitive to the non-

conceptual side of musical meaning in general, and to mental imagery in particular. This will lead to the conclusion, where a claim for the inclusion of mental imagery in the process of music analysis will be made.

If we consider John Rahn's four interpenetrating conceptual areas of music analysis (Rahn 1979), both his first and last set of paired terms define some of the concepts described up to this point. The first conceptual area, represented by the set of paired terms 'analog/digital', refers to modes of discourse in analysis. In particular, a digital mode of discourse is a "fully formalized theory that is not only capable of generating the piece it explains in all its particularity and richness of observable qualities and relations, but is capable of generating *only* that piece" (Rahn 1979, p.207). On the other hand, an 'analog' mode of discourse is characterised by "use and invocation of qualitative rather than quantitative differentiation assuming continuous scales of measurement" (Rahn 1979, p.205). In order to provide a better explanation of the 'analog' mode of discourse, Rahn refers to a paper by Benjamin Boretz, which focused on the process of how to communicate a message verbally and how this message is perceived. The following words by Boretz are very interesting, as he links the 'analog' mode of discourse with the invocation of virtual imagery:

> "…the novelist's overtly metaphorical method may be more precise than the logician's; since the novelist might attempt to create a parallel structure to the sense of a mental configuration, as a fused image, where the logician proffers a box full of parts and a radically particularized set of instructions for re-assembly." (Boretz 1977, p.105-106)

This quote by Boretz is revealing in the sense that it links directly a particular mode of discourse (the 'analog' one) with the use of resources as a 'parallel structure', reminiscent of a musical representation. Analysis is indeed part of the musical process considered as 'event', since when internalised by listeners and performers it highly affects their understanding of the piece, therefore changing the musical process in qualitative terms. In fact, when analysis is so considered, then it might be possible to argue that the 'analog' mode of discourse would be more appropriate and accurate than the digital one, since it constitutes a 'thick' description of music that accounts for a larger variety of forms of meaning.

All these considerations lead us to Rahn's fourth conceptual area, represented by the set of paired terms 'theory of experience'/'theory of piece'. Again, Rahn states that what makes one theory different from another depends on the mode of discourse that is operational. However, this conceptual area is wider than the first and includes second and third as well, providing a more general view on the approach of the theorist to analysis. In the words of Rahn (1979, p.218), a theory of experience explanation "is a chronicle or diary of the explainer's journey through the piece (…) personal in flavor"; while a theory of piece explanation "presents the end-state of analytical experience (…). It tends to be less personal in flavor, often also pretending superiority, 'objectivity', or either a Platonistic or dogmatic absolute truth." He also links the theory of experience with the 'analog' mode of discourse and the theory of piece with the digital mode of discourse. Keith Johnston refers to Rahn's interpenetrating conceptual areas and argues in favour of the 'analog' mode of discourse and the theory of experience explanation of music. Although stating that the 'standard' approach to music analysis is a formalist, digital one, he claims that recent theoretical discourse considers Rahn's

theoretical framework and Capalbo's 'inter-dependency' between theory, chart, composition, and, finally, perception (Capalbo 1981). Johnston defends a descriptive language in music analysis rather than a formalist/scientific one, a language that would account for the symbiotic relationship between the individual and the world, addressing social, spatial, temporal and imaginary perceptions. Johnston (1981) refers to this type of analysis as 'descriptive', affirming that it would break the boundaries of syntactical analysis.

Nicholas Cook also defends a mode of discourse in music analysis which is more 'performative' than formalist, and is intended to enhance the perception of the musical process (Cook 2002). Cook provides his own description of 'performative analysis', acknowledging that he is assimilating it to the theory of 'cognitive bending' outlined by George Lakoff and Mark Johnson (1980). Performative analysis would be a "metaphorical construction that highlights certain properties (…), filters out others, and gives rise to new properties through the blending of source and target domains" (Cook 2002, p.98). Cook also describes this type of analysis as 'narrative fiction'. Further, he claims that the real value of any music theory text resides in its effect over performance rather than in its epistemological underpinnings, referring precisely to the "performative effects" (Cook 2002, p.99) of an analytical text. I would venture to suggest that these effects might be 'perceptual' and not only 'performative', as an analytical text may condition a listener's attitude to a musical work as much as it may do a performer's. In any case, Cook's statement is certainly revealing, as it places more value on the effect of analysis over the musical process than on the intrinsic value of the analysis *per se*, that is, the value of the analytical text considered as an independent 'document'. Arguable or not, Cook's statement stresses the trans-experiential

quality of the musical process by not only conferring great value to the effects of analysis in performance but also by asserting that this effect is rooted in imaginary, extra-musical, elements. This is clearly reminiscent of the previously discussed arguments of Clarke, Nussbaum, Johnson, and so forth.

1.6 CONCLUSION

Considering the several arguments here discussed – the philosophical background, Cook's epistemologies, Williams's techno-essentialism, Dahlhaus's and Knepler's historiographical accounts, Rahn's, Johnston's and Cook's theories of analysis – together with the account made in this chapter on some late 20th century texts on music theory and analysis (Whittall 1977 and 2003, Yates 1968, Antokoletz 1992, Schwartz and Godfrey 1993, Williams 1997), I might venture to argue that imagery, despite being a fundamental part of the musical process, has been neglected in a great deal of the music theory literature of the near past. Among the several reasons for this to happen, some that have strongly contributed are the general tendency of considering technological progress as the only possible progress, propositional language as the only language capable of explaining the world, and scientific method as the only method available to generate theory. The fact that research on imagery and, broadly, embodied meaning of music, has been made quite recently (Clark 1998; Small 1998; Damasio 1999; Gallagher 2005; Sloboda 2005; Johnson 2007; Nöe 2013) might well be mentioned as a possible reason for the turn away from the 'techno-essentialist' epistemological framework, and also for the slight turn in music theory discourse acknowledged by some researchers.

Theories and arguments exposed in this chapter concluded that virtual imagery and musical representation are in fact an ontological part of the process of music perception. Based on findings by John Sloboda, it was proposed that imagery might well be present and have a fundamental role in the process of music composition and performance. Hence, I would like to make a claim for the inclusion of virtual imagery in the process of music analysis and music theory. This claim is not only based on the arguments exposed above, but also on the fact that analysis is part of the musical process as an 'event', and therefore must be consistent with its multiplicity of epistemologies.

But this chapter provided not only an interrogation of existing literature on music analysis and a claim for the inclusion of mental imagery in future analytical texts, but also discussed a theoretical framework in which the concept of mental imagery (defined at the beginning) may be located. The notion of mental imagery affecting my compositional process was a profound artistic event that made a significant impact on my ideas and behaviour as a composer. This artistic event catalysed the interrogation of literature that in the end led me to find a connection between mental imagery and several modern theories in the field of cognitive science and the philosophy of perception (Gibson, Clarke, López Cano, Reybrouck, Nussbaum, Nöe, Johnson, *et al*.). Mental imagery in my compositional process features multisensorial imagined stimuli, including motoric/kinaesthetic feelings, which clearly resonate with arguments discussed in this chapter such as 'motor imagery' and the 'virtual representation' of music. Research carried out during the realization of this study helped to mould and refine my concept of mental imagery, building a more refined and sharpened process, that led to a less systematised and more heuristic approach to

composition, after being permeated by such imagery (this evolution, noticeable when comparing works such as *Piano Sonata no.1 "Formas e simetrías"* and *Jakobsland*, will be discussed in the following chapter). This study provides a theoretical discussion and detailed analysis of my personal approach to composition through a conscious use of mental imagery. It is an original approach to the art of music composition, developed as a product of my artistic experiences and imagination, rooted in theoretical literature, which I hope may inspire or inform other musicians, whether composers, performers, listeners or historians.

In the following and final chapter, an in-depth analysis of my own compositions will be made. This analysis will resonate with previous considerations (such as Rahn's 'analog' mode of discourse, Rahn's 'theory of experience' or Cook's 'performative analysis') and will acknowledge the claim made here for the inclusion of mental imagery in musical analysis in future. Terms and concepts drawn from 'vitality affects' by Daniel Stern (see page 29) will be used extensively, stressing the multisensorial and interdisciplinary quality of the compositions, the imagery affecting them, and their analysis. The chapter that follows, which will end the study, arises from the core of the compositional process and builds its ideas and analytical style upon the arguments discussed in this first chapter, leading to a natural and concise conclusion.

II. Outcomes:

A set of compositions inspired by mental imagery

2.1 APPROACHING MENTAL IMAGERY IN MY COMPOSITIONAL PROCESS

The compositions presented with this thesis have been conceived and composed in parallel with research into music perception, meaning, representation and historiography, as discussed in the previous chapter. During the compositional process, a conscious use of mental imagery[25] did affect my compositional decisions, and this use was progressively directed, shaped and refined by knowledge obtained from research into musical perception, representation and meaning. For example, the idea of 'covered motor activity affordances' (López Cano 2006) catalysed particular uses of rhythm in pieces such as the beginning of *Natureza e arquitectura*, for violin and piano (see Volume II, page 50).

Although my compositions are influenced by mental imagery, image does not determine compositional decisions directly (e.g. a particular mood does not determine a particular harmony), but rather, imagery provides a framework of moods, shapes, rhythmic energy and so on. For example, the opening of my piano trio *Un afogado* is affected by an image of rough sea, together with moods of sadness, anxiety and despair. This image provides a framework of moods, emotions and imaginary stimuli that leads to the use of strong dynamic contrasts in the strings (abrupt *crescendos* and *subito pianos*); rhythmic instability,

[25] Mental imagery affecting my compositions is described in detail at the beginning of this written commentary, see page 24.

including very short upbeats and time signature changes; and unclear harmony, due to the *glissandi* in the strings (see Volume II, page 115).

Before composing and while composing, I let myself be permeated by mental imagery, virtually embedding a projection of my own body into an imagined scenario. This self-projection would receive imaginary stimuli and would feel different emotions that, in the end, affected the composition via a personal translation of these stimuli/emotions into musical outputs. But mental imagery not only affects the music at a micro level, it also influences the general structure of each piece. In all and each one of the compositions presented with this thesis, the initial stage of creative work consisted of making a plan containing a series of charts and sketches that outlined the intended structure and development of the piece, together with a brief written note detailing the characteristics of mental imagery in each section of the piece. These sketches were not intended to be rigid recipes to be followed while composing, but a snapshot of the initial idea of the series of mental images through which the piece will be travelling.

The way I approached the translation from mental imagery into musical output has gradually evolved over the years taken to do this study. Broadly speaking, the compositional process evolved from a partially systematised translation of certain aspects of mental imagery to a much more heuristic approach. For example, in works such as *Piano Sonata no.1 "Formas e simetrías"* or *Sendeiros imaxinarios*, composed at the initial stages of my research, elements from mental imagery such as light intensity and colour were systematically linked with particular harmonic procedures. Brightness was associated with intervals of a perfect fifth and a perfect fourth, while darkness was associated with major/minor thirds and semitone clashes. The opening of *Piano Sonata no.1 "Formas e simetrías"*,

shown in the following figure (Figure 1) was inspired by an imaginary vision of decreasing light intensity, therefore the intervallic evolution from perfect fifths to major thirds.

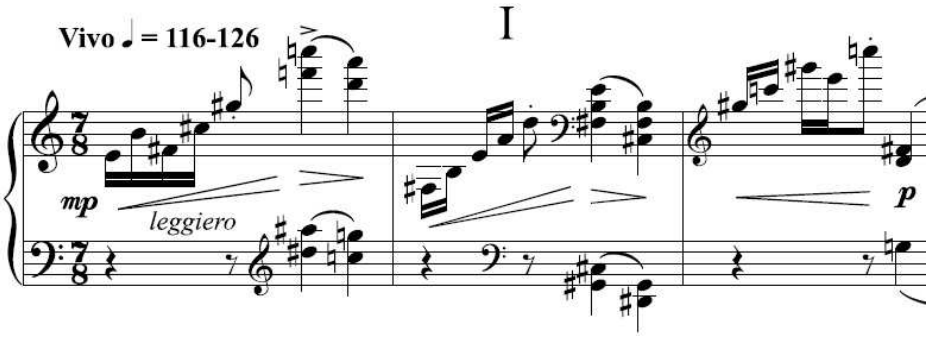


Figure 1: The opening of *Piano Sonata no.1 "Formas e simetrías"*

This systematic translation from light intensity to intervallic/harmonic procedure evolved over the years and turned into a freer, more improvised account of this relationship. Works such as *Jakobsland* or *Far* were composed using this more heuristic approach, and therefore feature a richer and more flexible harmonic palette, as can be noticed from Section D of *Far* (see Volume II, page 192) or Section C of *Jakobsland* (see Volume II, page 86).

2.1.1 A theoretical background supporting mental imagery

The use of mental imagery explained above resonates with several arguments discussed in Chapter One: (1) as Reybrouck stated, music affords the action by the listener of a mental simulation of it (Reybrouck 2005). At a higher level, the concept of musical affordance used here is indebted to Eric Clarke (Clarke 2005), who in turn takes the concept of affordance from James J. Gibson (Gibson 1979).

(2) According to Charles O. Nussbaum, a listener perceives musical meaning by virtue of a triangular relationship between music, musical representation, and perceiver (Nussbaum 2007). And, (3) as Mark Johnson claims, images are one possible vehicle for the transfer of musical meaning, which at the same time can be structured by a succession of bodily-based image schemata (Johnson 2007). Later in this chapter, there is an analysis of the compositions included in the portfolio, using a mode of discourse which resonates with the 'performative analysis' proposed by Nicholas Cook (Cook 2002) and the 'analog' mode of discourse proposed by John Rahn (Rahn 1979), arguments discussed on section 1.5.3 (page 61). Further, the analysis will use terms taken from Daniel Stern's notion of 'vitality affects' (discussed on page 29), which refer to dynamic qualities shared by different sensory modalities, therefore enhancing the multisensorial nature of mental imagery.

2.1.1.1 The Musical Landscape Metaphor

The notion of an imaginary individual travelling through a dynamic and interpenetrating succession of images is reminiscent of the Musical Landscape Metaphor proposed by Mark Johnson (Johnson 2007). This metaphor basically imagines the listener moving through the musical landscape, with future musical events before them and past musical events behind them. In the words of Johnson (2007, p.250), "such experiences are the basis for a second major conception of a musical work, as an extended three-dimensional landscape through which the hearer moves. The listener takes a journey over the path that defines the particular piece of music being heard". More precisely, from the composer's point of view, the action of imagining a chain of dynamic and interpenetrating images fits with what Mark Johnson terms 'observer perspective' (within the musical landscape

metaphor): one does not travel through the musical landscape but observes the path that an imaginary listener would travel. In Johnson's words, "[the observer perspective] is conceived as a distant standpoint from which you can observe the path through a musical landscape that defines a particular work" (Johnson 2007, p.251). The Musical Landscape Metaphor has its origin in the Moving Observer metaphor of time, which conceives present time to be at the position of the observer, future time in front of the observer and past time behind the observer, from a spatial point of view. This metaphor of time being directly related to space comes from Henri Bergson (1910, p.100): "we project time into space, we express duration in terms of extensity, and succession thus takes the form of a continuous line or chain, the parts of which touch without penetrating one another". The observer in my case is treated as if he/she was an all-knowing or omniscient narrator, an observer who knows what is approaching and who remembers all the details that have passed.

2.2 SOUND FOR IMAGE ON SCREEN: SIMILARITIES AND DIFFERENCES

As the composition of my music is highly affected by a chain of dynamic mental images, there is a danger of assuming a link between my compositional process and that of music composed specifically for images on screen. Although certain similarities exist (that will be accounted for), there are substantial important differences regarding the nature of the images themselves and the hierarchical relationship between imagery and sound.

In recalling the definition of 'mental imagery' given at the beginning of Chapter One (imaginary dynamic images, interpenetrating and including multiple sensorial

perceptions and moods), many variances can be deduced. The most evident is a physical and existential one: unlike cinema, my images are not framed. On the contrary, they are part of an imaginary and constantly moving three-dimensional happening. Moreover, the images affecting my music are not always as precise and detailed as those in cinema, being just an aggregate of imaginary sensory-motor perceptions, body schemata and kinaesthetic feelings without any specific visual shape (see page 24 for a detailed explanation of mental imagery affecting my compositional process). From a hierarchical point of view, the relationship between sound and image is different as well. Michel Chion (1994, p.68) states that, in the audio/visual relationship of cinema, sound is completely subordinated to the framed image; therefore "we can define most cinema as 'a place of images, plus sounds', with sound being 'that which seeks its place.'" This is not the case with the relationship between my compositions and the mental imagery affecting them as explained in section 2.1 (page 68), since the imagery does not determine compositional outcomes outright. In other words, music does not seek its place within the images, but the succession of affects (or emotions) contained in the music is influenced by them. 'Affect' here refers not only to the affects contained in the 'Doctrine of Affects' (Harnoncourt 1988) from the Baroque era, but more generally to any meaning applied to the music by a listener. This hierarchical organisation is also implicit in what Chion calls the 'phenomenon of added value', which refers to the fact that sound accompanying the framed image produces an effect on perception: the sound "interprets the meaning of the image, and makes us see in the image what we would not otherwise see, or would see differently" (Chion 1994, p.34). From these words it might be understood that sound *adds a value to* image in the form of enhancing certain emotions when perceiving the

whole audio/visual experience. It is the direction of this relationship which differs from the one that occurs within my compositional process. In the relationship that I propose, imagery, although not present during the performance of the music, conditions the compositional process and hence adds a value in the form of extra-musical material. In short, imagery enhances certain musical parameters such as harmony, melody and rhythm through its mapping of a mood/affect framework onto the musical space.

In spite of the difference between the audio/visual relationship present in my compositional process and that present in cinema, there are some similarities, and these relate to the metaphorical relationships between sound and motion. Sound, by nature, is a temporal event, so it can never be static. As Chion (1994, p.9-10) wrote, "sound, contrary to sight, presupposes movement from the outset. (…) Sound by its very nature necessarily implies a displacement or agitation, however minimal." The degree of dynamism and agitation I perceive when mentally recreating imagery influences the rhythmical and metrical output of each section of a piece. For example, the great contrast in tempo, rhythmic activity and excitement between variations 2 and 4 of the second movement of *Piano Sonata no.1 "Formas e simetrías"* comes as a response to two completely different ways of travelling through the same imagined architectural space (see Volume II, pages 17 and 20). The first journey would be fast, chaotic, partially interrupted and with spasmodic movements (hence variation 2 has a fast tempo, several time signature changes, and many dynamic contrasts and rests). The second journey would be smooth, slow and contemplative (hence, variation 4 features a slow tempo, stable rhythm and a soft, even dynamic). The relationship between rhythmical/metrical organisation and imaginary dynamism/motion is also rooted in the idea of

metrical entrainment, as proposed by Justin London, who affirms that "rhythm involves patterns of duration that are phenomenally present in the music, (…) By contrast, meter involves our initial perception as well as subsequent anticipation of a series of beats that we abstract from the rhythmic surface of the music as it unfolds in time" (London 2004, p.4). The listener engages with a particular organisation of time which is both on the surface of the music (rhythm) and in the deep temporal structure (metre). Consequently, these two elements (rhythm and metre) are influenced by temporal/dynamic features present in the images: the rhythm would be more complex and varied when the imagery features a complex set of body schemata and kinaesthetic perceptions (such as fast movements or unstable and constantly changing positions), while musical time would get compressed when the virtual motion is faster. Finally, the idea of virtual motion towards a goal influences the music in terms of direction, and actually affects musical parameters such as tempo, rhythm, dynamics or density. Sound has a great ability to induce a feeling of direction and speed, and this ability is widely manifest in the relationship between sound and framed image. Chion (1994, p.13-14) refers to this fact as *vectorization*, claiming that "sound *vectorizes* or dramatizes shots, orienting them toward a future, a goal, and creation of a feeling of imminence and expectation."

2.3 A SET OF COMPOSITIONS INSPIRED BY MENTAL IMAGERY

Eight original compositions are presented as a practical body of work or outcome. These are:

1. ***Piano sonata no.1 "Formas e simetrías"***. Solo piano

I. *Vivo* (CD I, track 1)

II. *Tema: Andantino* (CD I, track 2)

III. *Rondo: Allegro* (CD I, track 3)

2. ***Sendeiros imaxinarios***. Violin and piano

   I. *Claroscuro* (CD I, track 4)

   II. *Natureza e arquitectura* (CD I, track 5)

3. ***Jakobsland***. Flute, harp and pre-recorded sound (CD I, track 6)
4. ***Lembranzas de Jakobsland***. Violin, harp and pre-recorded sound (CD I, track 7)
5. ***Un afogado***. Violin, cello and piano (CD I, track 8)
6. ***Navarra, Terras do Nahar***. Solo violin (CD I, track 9)
7. ***Encuentro caballeresco***. Baritone, clarinets (B flat, E flat, bass), piano and narrator (CD II, track 1)
8. ***Far***. Symphony orchestra

The scores for the eight compositions are displayed in Volume II, accompanied by programme notes for each of them. The decision to include programme notes was made because I feel it necessary to explain how mental imagery influenced the process of composition, how features from the music such as rhythm or texture originated in my being permeated by mental imagery. Furthermore, similar mental imagery may be very helpful for performers, as this would add a necessary resource in order to build a faithful and rich performance of the piece. The necessity for programme notes was also felt on the occasions when I had to work with performers on one of my works. I found myself talking to them in terms of mental imagery, explaining the metaphorical origins of the music. This led to the

question of what would happen if I were not able to collaborate with the performers directly, and hence to the production of detailed programme notes.

The analysis of four of these compositions (*Jakobsland*, *Natureza e arquitectura*, *Encuentro caballeresco* and *Far*), given below, will help to illuminate how imagery is used when composing, and how characteristics of the images condition the framework of moods and affects in the music. The modes of discourse used for analysis have been influenced by the concepts of 'performative analysis' introduced by Cook (2002), and by Rahn's 'analytical mode of discourse' (Rahn 1979), concepts discussed in the previous chapter (section 1.5.3, page 61). Moreover, abstract categories drawn from 'vitality affects' proposed by Daniel Stern (see section 1.2.2, page 29) are extensively used during the analysis in order to refer to dynamic qualities shared between mental imagery and music.

It is important to point out that all the associations between imagery and music are a result of my own perception, intuition and sensibility. This does not mean that listeners who hear these pieces will experience the same images, or that other composers who use imagery have to follow the same associations. The imagery conveyed by these works to a potential listener is completely unpredictable, and might depend on variables such as educational background, social circumstances, culture or mood.

2.3.1 Jakobsland

Briefly recalling Chapter One of this thesis, meaning, and hence musical meaning, has different forms and travels through different channels (Johnson 2007). Musical meaning can adopt the form of a visual image, a memory, a shape, a movement or kinaesthetic sensation, and multiple other elements. My own

concept of mental imagery (see page 24) encompasses these multiple forms of meaning and forms a body of extra-musical material that inspires, affects and influences the compositional outcome. Imagery that inspired my piece for flute, harp and pre-recorded sound *Jakobsland* features several different memories (referred to as visual images, emotions, textures, shapes, etc.) that I had from my hometown: Santiago de Compostela, Galicia. These memories were organised by means of an imaginary motion trajectory through the surroundings of Compostela Cathedral, providing a plan of the structural development of imagery that hence influenced the formal outcome of the piece. The following Table (Table 1) presents this formal layout in detail:

Jakobsland									
A [1-87]	B								
	b1 [88-92]	t1 [93-97]	b2 [98-103]	t2 [104-108]	b3 [109-129]	t2’ [130-133]	b2’ [134-141]	t1’ [142-147]	b1’ [148-152]

Jakobsland						
C					A’ [253-292]	CODA [293-end]
C1 [153-159]	C2 [160-169]	C3 [170-204]	C4 [205-231]	C5 [232-252]		

Table 1: Structure of *Jakobsland*

The first section of the piece is very heterodox and eclectic, conveying different moods, melodic shapes, harmonic frameworks and rhythmic behaviours. I let

myself be permeated by images from the surrounding urban spaces in the vicinity of Compostela Cathedral, images featuring not only visual images but also kinaesthetic feelings, textures, sounds and emotions. This concept of image is aligned with the one defined in Chapter One (see page 24), which provides a general framework that clarifies the meaning of 'image' and 'imagery' when used in order to describe my music. As I let myself be permeated by these images, music started to flow in the form of a very flexible, fluent and mouldable sonic body. The initial flute cadenza sets up an airy, dreamy and meditative start to *Jakobsland*, letting the flute player move freely through the melodic lines and rhythms. Memories usually tend to start as a diffuse set of meaningful elements of different natures, and so it is that *Jakobsland* starts, presenting several melodic, harmonic and rhythmic ideas embedded in a diffuse atmosphere with no clear musical direction. Imagery turns into a more defined, objective, earthly element as visual images from the narrow streets nearby the cathedral become more prominent. Visual images combine with a sense of overcrowding and vibrant, bustling human activity. Imaginary kinaesthetic feelings related to both a fast and stumbling advance through the streets are a meaningful part of the imagery, as well as a sense of undulation derived from the winding characteristics of the streets. These imagined scenes, when processed and internalised, induced a dramatic and frenetic chase between flute and harp that takes off immediately after the opening cadenza. Shapes in both flute and harp appear as broken lines with sharp peaks, travelled by the two instruments at a very high speed, conveying a sense of overwhelming anxiety. These violent episodes have their contrasting responses within Section A. As mentioned earlier, Section A presents an eclectic mixture of different moods, shapes and rhythmic/metric behaviours in response to

a set of images with very diverse characteristics. In this way, more gentle, calm and relaxed subsections can be found (e.g. bars 39-50 and bars 72-74). Below, Figure 2 presents two fragments from Section A that clearly demonstrate the aforementioned contrast of moods.

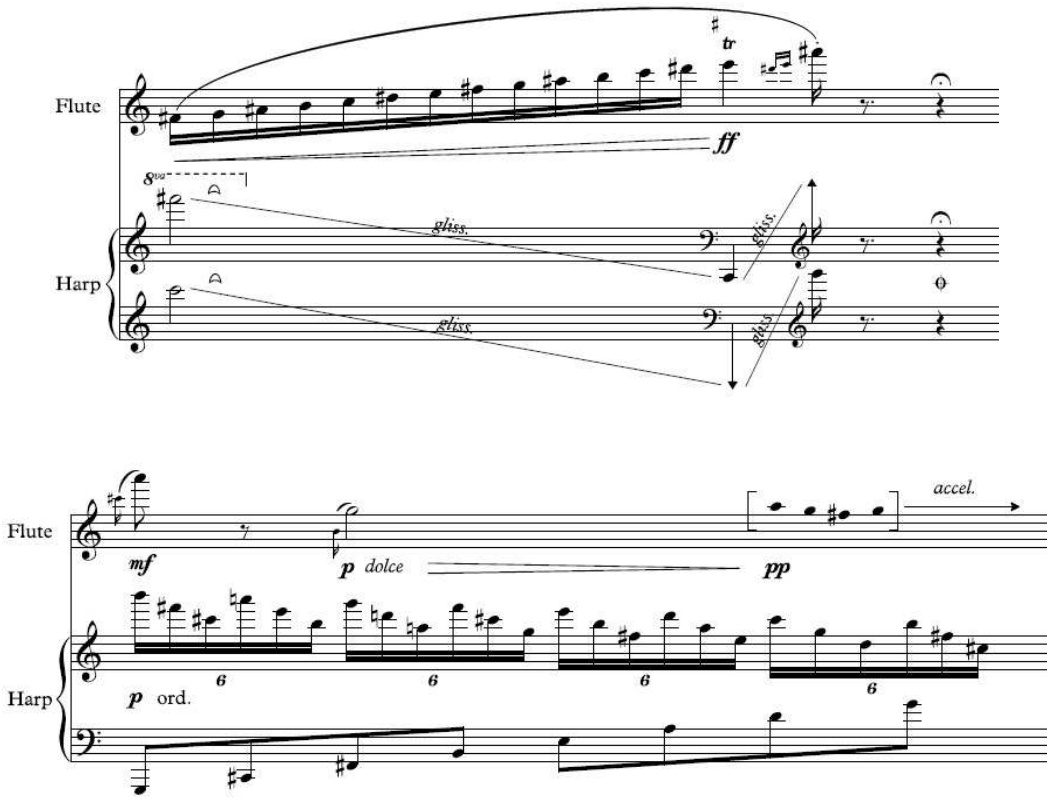


Figure 2: Bars 32 & 33 showing abrupt contrast in mood

A transitional passage given by the solo harp leads the music into Section B, which brings the listener into a diametrically opposed sound world. Again, imagery is a crucial part of the catalysing force that provokes this extreme contrast between the two sections. Now, memories from the large open space in front of the main façade of Compostela Cathedral (commonly known as Obradoiro

Square) build up a series of images (as defined in Chapter One, see page 24) of homogeneous qualities: amplitude, spaciousness, symmetrical layout, stability, brightness and a feeling of gentle and smooth movement. Moreover, a certain sense of rigidity is imagined, derived from memories of the solid nature of the old stone-made buildings and the symmetrical form of the urban space. A sense of rigidity subsequently induced compositional decisions in terms of form and pulse for Section B: the pulse becomes stable and regular and, as opposed to the previous section, it is now structured within a 4/4 time signature. Form was conceived as a pre-compositional given, planned in advance and used as a mould to organise the thematic and motivic ideas. Moreover, this mould was planned to be symmetrical, hence the music in Section B unfolds in a mirror form or symmetrical structure. Symmetry can be easily grasped by consulting Table 1 on page 78.

At a macroscopic level, the whole of Section B appears as a very homogeneous sonic body. The musical landscape[26] here features similar shapes, colours, textures, and a sense of unity and balance. However, if analysed in detail at a more microscopic level, great variety is unveiled. Subsections b1 and b1', the opening and closing statements of the section, draw the listener into a state of contemplative meditation. A sense of stillness and timeless existence, together with a feeling of gentle and smooth undulated movements, is imagined. Music conveys composure, tranquillity and pause after the vibrant energy released in the previous section. Stillness is musically depicted through the use of repetitive motifs that interlock in a cyclical manner, a compositional resource that is visible at the very beginning of the section in the dreamy harp texture (see Figure 3).

[26] This metaphor is resonant with Mark Johnson's 'Musical Landscape Metaphor' (2007). See page 71.

Harmony in subsections b1 and b1' is diatonic and consonant, featuring perfect fifths and major triads. A feeling of smooth, undulated movements is musically designed through gradual elevations and descents in register that result in long wavy lines given in both harp and flute.

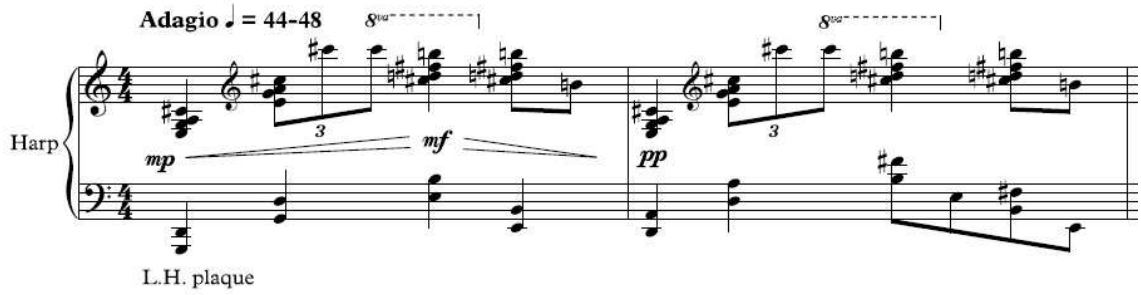
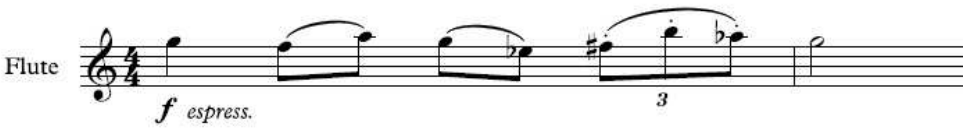


Figure 3: The opening of Section B, harp solo, bars 88 & 89

Subsection b2 holds a set of new melodic materials that recapitulates in subsection b2'. Memories from the other three buildings (apart from the cathedral) present in Obradoiro Square, particularly their characteristically flat shape, provide the main qualities of imagery affecting these subsections. In this way, three new melodic ideas are introduced in subsection b2, all of them aiming for flatness in their shape, a quality that led me to construct them with narrow intervallic leaps and the same starting and ending pitch. The following figure (Figure 4) displays these three melodic ideas when performed by the flute in subsection b2.



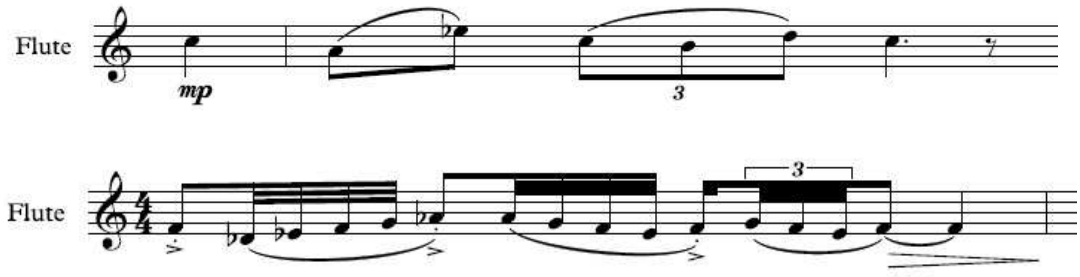


Figure 4: Three melodies played by the flute in subsection b2

bars 100-103

The feeling of stillness, smoothness and stability gets slightly disturbed in subsection b3. The music is now influenced by memories of Compostela Cathedral. This set of memories that make up the imagery at this point includes not only visual memories of the historic building, but also memories of kinaesthetic and proprioceptive sensations felt when looking up at the magnificent construction from street level. These perceptions involve a sense of instability, a feeling of imbalance arising from looking at the height of the cathedral (76 metres) from a close distance. Imagined kinaesthetic perceptions derived from the sense of instability involve a stumbling, irregular walk. However, the formal configuration of the cathedral's façade influences the shape of the new melodic material presented by the flute at the beginning of this section (bar 109), a compositional process that resembles the one used when creating the melodic theme from bar 33 of *Natureza e arquitectura*[27]. All these qualities pertaining to imagery affect the music at different levels in subsection b3. The melody given by the flute in bar 109 presents an edgy, angular shape with three peaks (see Figure 5, page 84), which is accompanied by a messy, irregular, slightly capricious set of

[27] See page 50 from Volume II and page 87 of this Volume.

chords from the harp. This harp accompaniment deliberately avoids deliberately the downbeats in order to enhance pulse instability. Moreover, chaotic dynamic behaviour from both flute and harp enhances the feeling of stumbling advance, metaphorically aligning loud dynamics with a sense of approach/nearness and soft dynamics with a sense of remoteness.

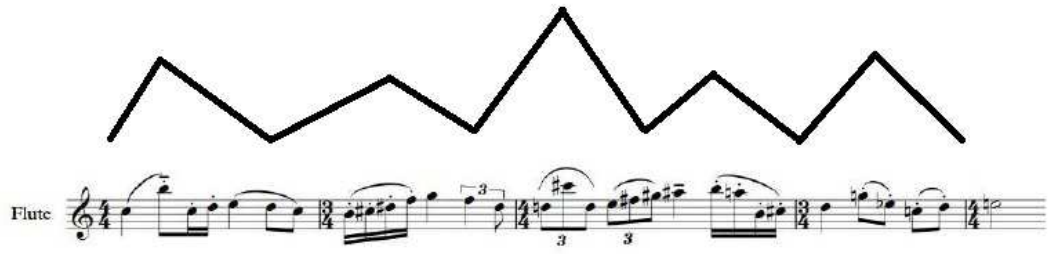


Figure 5: The melodic theme presented by the flute in bar 109

Concepts such as ‘stillness’ or ‘smoothness’, ‘stability’ or ‘rigidity’ permeate the imagery influencing the composition of Section B. Coming from all the turbulent activity that boils up during Section A, the listener enters a sound world dominated by a calm and quiet forward motion through airy and transparent harmonies, broad melodic lines, open registers and generally soft, gentle dynamics. This tranquillity is slightly distorted only in two places (bars 104-108 and 130-133, also symmetrically located within the section) that stand as a brief recall of the musical events that took place in Section A. At these two points, the time signature is temporally removed and the sonic body flows once again in the form of sudden surges of sound, bringing the listener back to imaginary movements and kinaesthetic perceptions pertaining to the initial section of the piece.

While Section B fades away into the most extreme *pianissimo* listened so far, Section C begins abruptly through a violent and frantic flute solo. This opening statement of the section again conveys great instability, anxiety and a strong sense of nervous uncertainty. The music becomes extremely angular and edged; short and spasmodic outbursts appear and disappear in a chaotic manner. The harp accompanies the flute solo through fast and energetic *glissandi* that use finger, nail and plectrum techniques, hence providing different timbral qualities and a variety of sonic textures that enhance the eclectic nature of the opening of Section C. The imagery includes memories, imagined feelings and sensations derived from walking up the stairs that lead to the entrance of Compostela Cathedral. A mood full of restless expectation is imagined, combined with stumbling kinaesthetic perceptions and a sense of unstable advance. These images suddenly turn into completely different ones, since memories from the majestic portico that receives the visitors of the cathedral together with a feeling of deep and intimate meditation are brought into the imagery plan. A sense of solemnity, eternity and timeless existence is imagined. The musical discourse becomes dreamy, reflective and extremely calm. Soft dynamics, winding melodic lines from the flute and harp, warm tonal harmonies, and smooth articulation, all help to build a general mood-framework characterised by intimacy, hope and tenderness.

The intimate mood turns suddenly into bustling and extrovert, dance-like activity. The listener is abruptly dragged into a fast energetic folkloric dance inspired in the rhythm and melodic shape by Galician *muiñeiras*. Ternary subdivisions dominate the metric structure, but melodic shapes often feature hemiolas and off-beat accentuations. These off-beat accentuations are reinforced by an accompaniment in the harp that uses percussion on board. The following figure

(Figure 6) shows the starting bars of the subsection, where ternary subdivisions, hemiolas, off-beat accents and the percussive harp accompaniment are clearly visible.

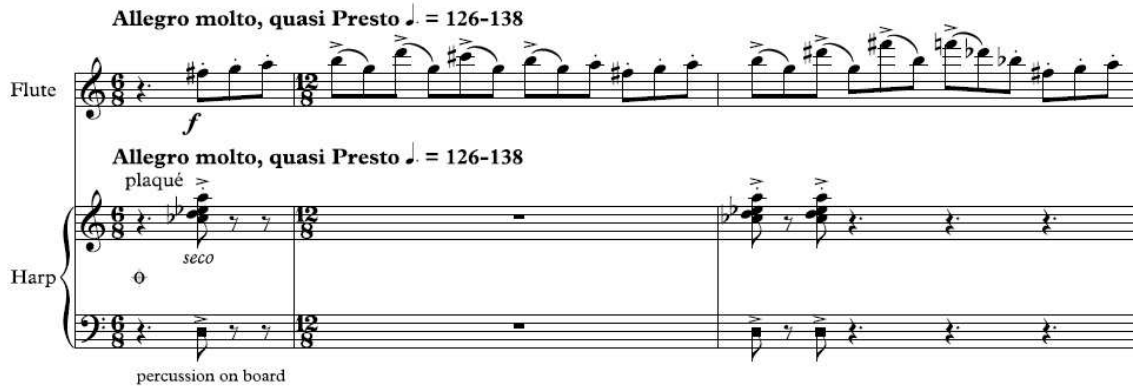


Figure 6: The beginning of the dance-like subsection in bar 170

Imagery influencing this subsection features memories of the crowds of people that often fill the inner spaces of Compostela Cathedral. Memories of popular, folkloric celebrations induced the use of rhythms and melodic shapes pertaining to traditional music from Galicia. A sense of intense joy is imagined, which is conveyed through a clearly optimistic and openly cheerful combination of metre, rhythm, melody and harmony. The music is edgy and dance-like, transmitting great excitement through a bold use of accentuation. The harmony offers an extensive use of the whole-tone scale, and therefore the rounded, bright and warm qualities of whole-tones dominate the sonority of the subsection. However, at the same time, a slight degree of uncertainty is conveyed as the melodic line performed by the flute often shifts from one whole-tone scale to the other, creating a fuzzy, yet bright and warm, harmonic framework.

Jakobsland finishes with a recapitulation of Section A. This structural decision was inspired by the virtual traveller's imaginary final walk through the narrow, winding streets surrounding the cathedral. Once again, the sonic body shudders violently through fast, angular runs in the flute and chaotic glissandi from the harp. The recapitulation is sharply interrupted in bar 292, a climax in terms of emotional involvement, and the Coda of the piece takes off. Sonic motion is accelerated through fast, undulated glissandi (harp) and scales (flute), conveying a sense of rapid circular movements. The virtual movement suddenly stops and there is a chaotic stumbling in bar 298, enhancing a feeling of anxiety and urgency that falls into the final statement of the piece: a recollection of the melodic theme presented in Section A (bar 39, theme recalled in bar 306). This exciting musical journey through imagery inspired by Santiago de Compostela ends in an explosive manner, with both instruments soaring up to their higher register limit and the two pre-recorded tracks sounding in the background. A theatrical finish is achieved as the two performers need to reduce the volume of the pre-recorded tracks down to complete silence.

2.3.2 Natureza e arquitectura

An imaginary journey through an environment dominated by wild, deep and dense forest and in which an isolated piece of architecture is placed served as an imagery-based point of departure when composing this work. *Natureza e arquitectura* is the second movement from a larger two-movement piece entitled *Sendeiros imaxinarios* (Imaginary paths), in which both movements, although manifestly contrasting, share a common procedure: the use of an imaginary journey as a point of departure and source of inspiration. In this way, before any note, shape or intention of the piece had been written, I undertook a plan of the

previously mentioned journey, deciding its stages, spaces, colours, light intensities, as well as the moods, emotions, sensations and feelings experienced by the imaginary traveller.

Since the pre-planned imagery was crucial for the forthcoming composition of the piece, it is necessary to describe it in detail: the virtual journey starts from the depths of a wild and dense forest. A feeling of intense anxiety and fear is imagined. These emotions induce the virtual traveller to move fast, stumbling in the way towards a safer, open space. All of a sudden, the high density and closeness of the environment opens, letting the individual enjoy a clear view of the landscape. It is at this moment that the traveller notices the presence of an isolated piece of modern architecture standing at a certain distance in the middle of the natural landscape. This inspiring vision, combined with the openness and brightness of the space, catalyses new sensations and feelings in the spectator, now experiencing a sense of calmness, joy and communion with pleasant nature. The imaginary journey continues as the traveller starts approaching the building. The observation of the architectural piece becomes more acute and precise. Further, the symbiotic relationship between landscape (nature) and architecture becomes clearly noticeable for the traveller, who gradually develops a satisfying sense of perfect communion between the natural and the artistic. As the traveller approaches the building, a sense of urgency and impatience arises and grows. When the building is finally reached and entered, a surprising shock awaits inside: the piece of architecture is only an external carapace, and is an empty space inside. The spectator then observes the silent, semi-dark inner space and enters into a mental state of sudden nostalgia. Memories of the sensations and feelings experienced during the previous walk crop up and combine, inducing renovated

emotions derived from the ones felt during the journey, but now distorted and mixed together into an energetic and explosive climax.

The imaginary journey described in the previous paragraph affected the structure of *Natureza e arquitectura*, as it led to a plan that was resonant with the different stages of the journey. The structure of the piece is shown in Table 2:

SECTION A	SECTION B	SECTION C	SECTION D	CODA
[1-32]	[33-48]	[49-101]	[102-116]	[117-end]

Table 2: The structure of *Natureza e arquitectura*

The first section of the piece intends to convey a sense of urgency, nervousness and fear. The lines in both the piano and the violin draw a series of angular and edgy peaks that have very short intervals between them, transmitting a sense of restlessness and burden. The rhythmic pattern in both instruments is not parallel, a fact that contributes to enhance instability. The broken irregular shapes depicted by the two instruments are complemented by a use of bold dynamics, which feature constant inflation and deflation. Again, the pattern in both instruments is not parallel: the violin plays long and smooth *crescendos* and *diminuendos*, while the piano has very short and spasmodic ones. In this way, Section A reacts to imagery by sharpening its angularity and irregularity in terms of dynamics and melodic shape, conveying a sense of instability, anxiety and nervousness. The harmonic process carried out at the beginning of the piece (bars 1-15) arises not

from a heuristic approach to harmony, but from a controlled and calculated progression: clashing broken chords in the piano and violin evolve through a constant shifting of intervals at a distance of a semitone, producing smooth, almost imperceptible harmonic changes that build up an atmosphere of ambiguity and fuzziness. The following figure (Figure 7) shows the harmonic transformation in bar 4:

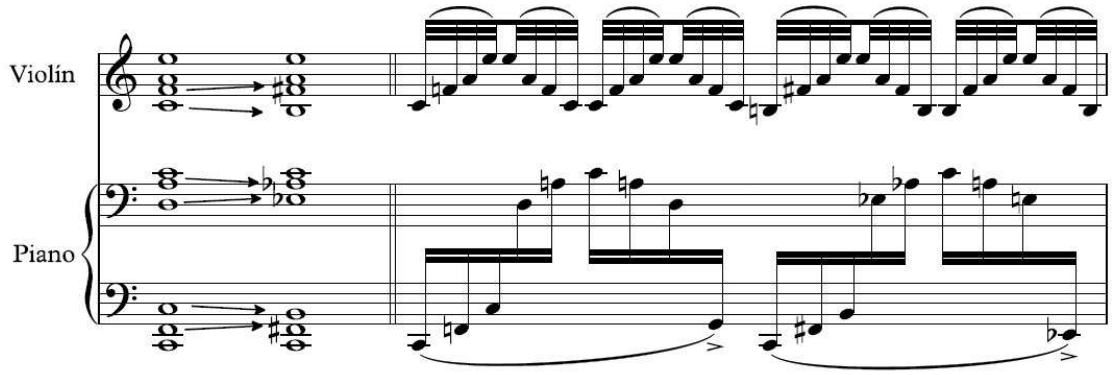


Figure 7: Detail showing the harmonic process in bar 4

As explained when describing the imaginary journey, after the initial dark, threatening image, a completely different one takes its place. Therefore, Section B presents a sharp contrast with the opening section of the piece. Several compositional procedures combine in order to convey a general sense of calmness, brightness and peaceful observation. The texture becomes less thick and more porous, transparent, as a reaction to imagery featuring open and bright spaces. A sense of broad temporal space is implemented through the inclusion of long melodic lines that, by interlocking with each other, provide a never-ending chain of sonic events. Moreover, this temporal sensation is enhanced by the placement of long and solid chords on the downbeats of the first two bars of the

section. The words ‘open’, ‘broad’ or ‘transparent’, which have been used just before in order to describe qualities of the music from Section B, also refer to qualities from imagery that have been imported to the musical meaning of this section. These can be included in the more general aim of the section to musically depict a sense of a large, pleasant space in front of the spectator. It might be useful to remember at this point the Embodied Theory of Meaning by Mark Johnson (see section 1.2.3, page 31), in which he claims that meaning presents several qualities of a different nature, being either a concept (such as ‘big space’), a sensation (such as ‘relief’ or ‘calmness’) or a kinaesthetic feeling (‘stability’) (Johnson 2007). The melodic line presented from the very beginning of Section B has a descriptive intention, since its intervallic shape responds to the shape of the imaginary building found by the spectator at this precise moment. The following figure (Figure 8) shows the melodic line played by the violin and the imaginary shape described.

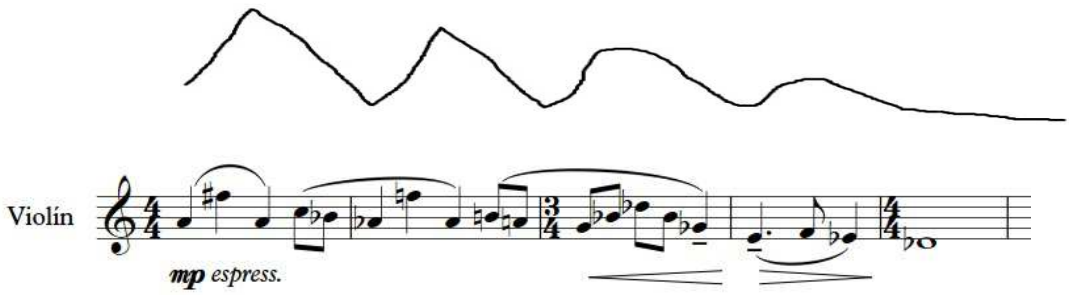


Figure 8: The melodic theme presented by the violin in bar 33 plus its imaginary shape

Sections A and B therefore convey two contrasting qualitative frameworks. While Section C unfolds, these two sets of qualities combine, interact and dialogue as a

result of imagery pertaining to the virtual journey described at the beginning of this analysis. Angular and uneven gestures (e.g. bars 58-61) share musical space with length and broadness of lines (e.g. bars 69-76). A joyful and optimistic emotion permeates the piece, which has an increasingly impetuous advance. The sonic body appears now as flexible and plastic: the registers move smoothly up and down in a wavy manner, and there are gentle expansions and contractions in time, in a metaphoric depiction of broad/narrow spaces and winding paths travelled by the imaginary individual. Smooth lines give room to more detached, granular textures as Section C approaches its end. Rhythmic activity undergoes a gradual growth, combined with an increase in rhythmic and metric complexity. These procedures lead to a general sense of an imminent event, conveying a feeling of expectation, intrigue and excitement. Finally, the section falls into a grand recapitulation of the melodic theme heard at the beginning of Section B (bar 33), which appears as a musical metaphor of the traveller reaching the architectural piece that stands in the middle of the natural landscape. Figure 9 presents the beginning of the aforementioned recapitulation.

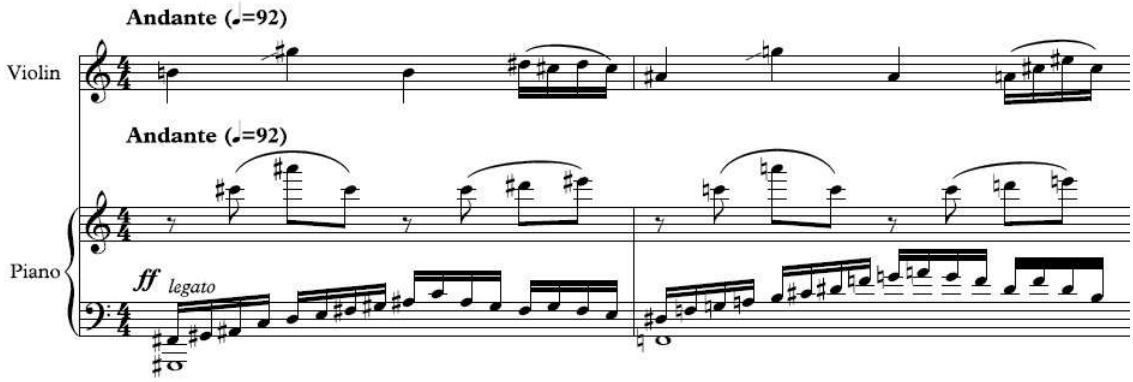


Figure 9: The recapitulation of the main melodic theme, bars 93-94

The imaginary journey has led the traveller to the vicinity of the architectural piece. Now, its presence is perceived in all its majesty, every detail from its formal shape is clearly noticed. The vision of architecture, the beauty of its spatial qualities and the play of its volumetric masses, eclipses almost everything else. The spectator is imagined to feel a sense of joyful plenitude, observing every little gesture from the outline of the building. The musical outcome that arose from the internalisation of the image described above results in a much more active, wrinkled, thick and weighty sonic body: The transformation of the original melody (bar 33) into the one shown in Figure 9 above (page 92) occurs through a process of ornamentation, adding trills and new passing notes or appoggiaturas. Moreover, the piano accompaniment appears now to be much more dense and rich, contributing with wavy lines from the bass register and counterpoint in the high register. The second appearance of this theme intends to convey a sense of grandeur, proximity and overwhelming fullness, hence the detailed ornamentation of the melody and its richer accompaniment. However, a subtle feeling of instability is implemented through the inclusion of *glissandi* and *portamento* in major sixths performed by the violin, as a reaction to an imagined kinaesthetic perception of a stumbling walk while approaching the building. These *glissandi* enhance the image of a self-confident mood combined with a slightly careless, indolent attitude.

A dramatic change in almost every musical aspect is about to take place. From bar 102 to bar 112, the piece enters into a bubble, isolated, impermeable to the musical events that happened before and that will happen afterwards. Within this bubble, musical time almost stops; sonic events are widely spaced in time and the discourse becomes chopped and diffuse. Thickness gives room to a more airy,

light and bright texture approached through the inclusion of open chords in the piano, long and widely spaced, that make use of a broad register. Perfect fifths dominate the harmonic framework, producing a clash of sounds that pertain to the same harmonic series and intensify the resonance of high harmonics, contributing in quality and quantity to the openness of register. The image of an empty building, dark and mysterious, time frozen in its interior, silent and deadly calm like the wreck of a sunken ship, deeply affects the emotions of the spectator, inspiring nostalgia, solitude and desolation. A sense of encapsulated time, passing by very slowly, is imagined and absorbed, in order to express it through music. This sensation materialises not only by the use of a slower tempo and long isolated chords, but also through an absence of direction in music, providing no clear development of ideas and an illusion of motionless unfolding.

The coda of *Natureza e arquitectura* takes off from bar 113, building up a continuous *crescendo* of energy and tension that goes on until the very last bar of the piece, where a final explosion puts an abrupt end to this work. An image of the spectator undergoing a process of remembrance and reflection that leads to an intense feeling of emotional impact and enthusiastic joy affected the musical intention of this coda, hence it also affected its compositional planning and further development. Constant rhythmic and metric changes induce a feeling of stormy and chaotic virtual movements, accelerations/decelerations and contractions/expansions of time. Previous melodic and rhythmic ideas appear again, subject to transformation, in a bustling chain of interlocked brief musical statements that convey an impression of violent, sudden sound blasts. Lines become extremely angular, edged and sharp. Harmonic discourse shifts to a set of dense, opaque and dark chords, featuring several semitone-clashes and chromatic

progressions in the low register of the piano. The following figure (Figure 10) shows bars 121-124 from the coda: The violin plays a transformed, fiery version of the melodic idea given in bar 69, while clashing rhythmically and harmonically with the accompaniment given by the piano. In addition, minor ninths in the low register of the piano clash with harmonies appearing in the middle register, producing a whole sense of blurred, dark and dissonant chordal progression.

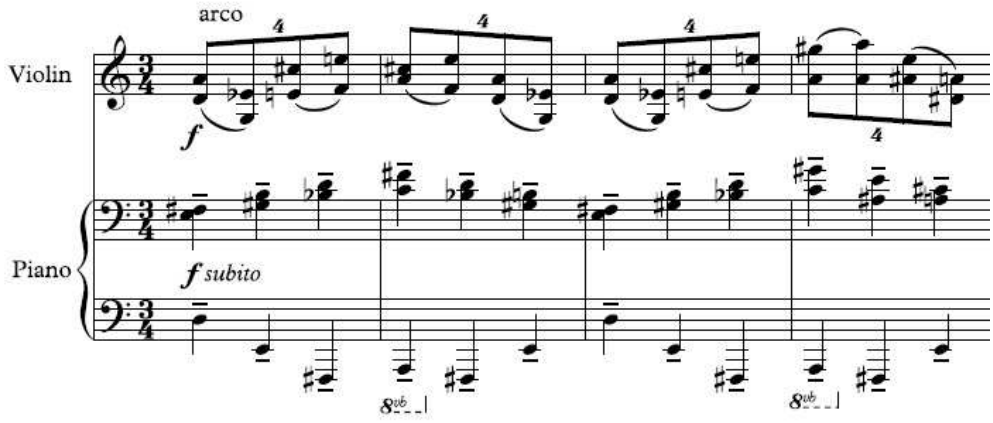


Figure 10: Transformed materials in the Coda, bars 121-124

2.3.3 Encuentro caballeresco

Commissioned by the Cervantes Institute in Budapest (Hungary) and premiered at the Franz Liszt Academy of Music in the Hungarian capital, this piece for baritone, B flat clarinet (doubling E flat and Bass), piano and narrator, used fragments of the Spanish novel *Don Quijote de la Mancha* (Miguel de Cervantes, 1605) as pre-compositional material. Two sonnets pertaining to the prologue of this famous novel were chosen for the occasion. The prologue of *Don Quijote de la Mancha* presents several poems written by the author but presented as if they had been written by famous contemporary people or well-known characters from

the literature of that time. In this way, the two sonnets inspiring the piece are put in the mouth of Don Belianís of Greece, a famous knight from various novels of chivalry, and Solisdán, an unknown character who even today remains a mystery for researchers and specialists in the work of Cervantes. Both sonnets are displayed below in their original language (medieval Spanish) and translated to English:

DON BELIANÍS DE GRECIA, A DON QUIJOTE DE LA MANCHA	BELIANIS OF GREECE, TO DON QUIXOTE:
Rompí, corté, abollé, y dije e hice más que en el orbe caballero andante; fui diestro, fui valiente y arrogante, mil agravios vengué, cien mil deshice.	I did my cutting, thrusting, hacking away, More than any other in a long line of valiant knights; I was brave and bold and clever in arts of war, Put over a hundred thousand wrongs to rights.
Hazañas di a la fama que eternice; fui comedido y regalado amante; fue enano para mí todo gigante, y al duelo en cualquier punto satisfice.	My deeds will live on in history In courtly love I was gallant and skillful; I took on giants like they meant nothing to me, And in fighting duels I played by every rule.
Tuve a mis pies postrada la Fortuna y trajo del copete mi cordura a la calva ocasión al estricote.	I made Dame Fortune grovel at my knees And was smart enough to grab opportunity By the balls, make it do what I please,
Mas, aunque sobre el cuerno de la luna siempre se vio encumbrada mi ventura, tus proezas envidio, ¡oh, gran Quijote!	I took on all comers with impunity And was on top of my game in my heyday But I envy your prowess, oh great Don Quixote!

SOLISDÁN, A DON QUIJOTE DE LA MANCHA	SOLISDÁN, TO DON QUIXOTE
Maguer, señor Quijote, que sandeces vos tengan el cerbelo derrumbado, nunca seréis de alguno reprochado por home[1] de obras viles y soeces.	Maugre the ravings that are set abroach, And rumble up and down thy troubled brain: Yet none thine Acts, Quixote, can reproach, Or thy proceedings tax as vile or vain.
Serán vuesas fazañas los joeces, pues tuertos desfaciendo habéis andado, siendo vegadas mil apaleado por follones cautivos y raheces.	Thy feats shall bee thy fairest ornament (Seeing wrongs to 'ndoe, thou goest thus about) Although with blows a thousand times y-shent, Thou wert well nigh, yea 'ven by the miscreant rout.

Y si la vuesa linda Dulcinea desaguisado contra vos comete, ni a vuesas cuitas muestra buen talante,	And if thy fair Dulcinea shall wrong, By mis-regard thy fairer expectation, And to thy cares will lend no lightning eare:
en tal desmán vueso conorte sea que Sancho Panza fue mal alcagüete, necio él, dura ella y vos no amante.	Then let this comfort all thy woes out weare, That Sancho faild in Brokers occupation, Hee foolish, cruel she; thou without tongue.

This analysis will focus on the music written for the two sonnets presented above. The musical outcome achieved in the two fragments (sonnet of Don Belianís, bars 21-42; sonnet of Solisdán, bars 43-92) exhibits a huge contrast in almost every sense, exemplifying clearly the richness of possibilities at hand through my compositional process using mental imagery. By opposing the two sonnets and the musical outcomes obtained from them, a clear view of how meaning is drawn from both literature and mental imagery, and how this meaning is absorbed and implemented in music, is conveyed.

In the first sonnet, Don Belianís of Greece makes a passionate and eloquent recollection of his own adventures and achievements that lead to a final statement in which he praises the figure of Don Quixote by admitting that, despite being a famous knight, he envies Don Quixote's feats: *tus proezas envidio, ¡oh, gran Quijote!*. The whole poem is a nostalgic chant over the good old times in which Don Belianís was a brave and honourable knight achieving great success. I imagined Don Belianís to be a proud and noble character, old and wise, with great sensitivity, full of longing, and also slightly naïve. These characteristics of the personality of Don Belianís were imagined by myself as I was permeated by the atmosphere, language, style and imagery conveyed by the first sonnet. Moreover, these imaginary features set up a framework of mood and emotion that crucially affected the general character of the music pertaining to this first poem. A sense of

stillness, calmness and motionless was intensely felt, induced by the imaginary vision of an old man gently remembering his past feats. This sense of stillness is however not accompanied by a feeling of quietness. The powerful tone of the poem, conveying strong ideas with a remarkably noble language, inspired in me a sense of grandeur and flamboyance that was implemented in the music as well.

The melodic line sung by the baritone in the Don Belianís sonnet is generally rounded, even and smooth. The poem opens with a solid rush of impetuous power, the baritone singing, at his high register, several repeated notes that move gradually higher in pitch. This compositional choice responds directly to the meaning of the four initial verses, which say, with great assertion, how important and brave Don Belianís was. An image of an old noble man stubbornly shouting these four verses directly inspired the music here. The imaginary sense of stillness is musically translated into a constant, stable tempo throughout the whole poem. Music flows gently and steadily through a variety of moods and emotions inspired by an image of an immobile man with a vivid, sensitive and sharply awake mind. Therefore, in conjunction with a stable tempo and an even, smooth flow, the melodic line features bold and subtle expressive inflections induced by the sense of nostalgia. A mental image of Don Belianís vividly remembering his old adventures and hence feeling deep and fresh emotions affected the behaviour of the melodic line in this poem. The following figure, Figure 11 (page 99), presents the beginning of Don Belianís's sonnet as sung by the baritone, showing the impetuous repeated notes; and the melody for verses 10 and 11, showing a more angular line conveying great expression:

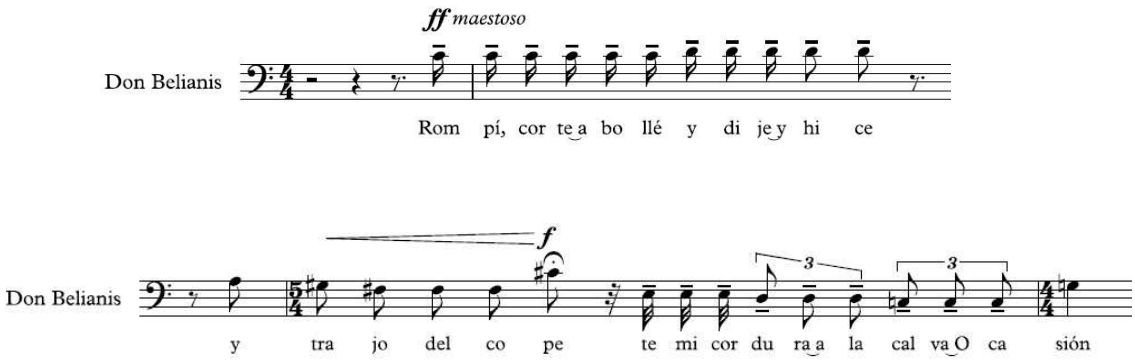


Figure 11: Don Belianís, verse 1 (above) and verses 10-11 (below)

The piano and clarinet accompaniment for the Don Belianís sonnet helps to set up an atmosphere characterised by calmness and quiescence, appropriate for the story-telling content of the poem. Long sustained chords from the piano evoke a sense of broad space and time, enhancing the feeling of tranquillity. Moreover, a special choice of timbre is made: the pianist must play almost constantly inside the instrument, plucking directly the strings with fingers or plectrum. This technique aims for an archaic sonic world, as the resulting timbre resembles that of medieval plucked string instruments such as the lute. On top of this chordal accompaniment, the B flat clarinet line gently slithers up and down through long, undulated melodies, as if depicting a smooth hilly landscape. A pleasant sense of softness, mildness and tenderness emanates from these lines played by the clarinet, lines arising in my musical imagination being permeated and affected by images featuring the aforementioned qualities. All these features from the accompaniment are clearly visible in Figure 12, shown on page 100:

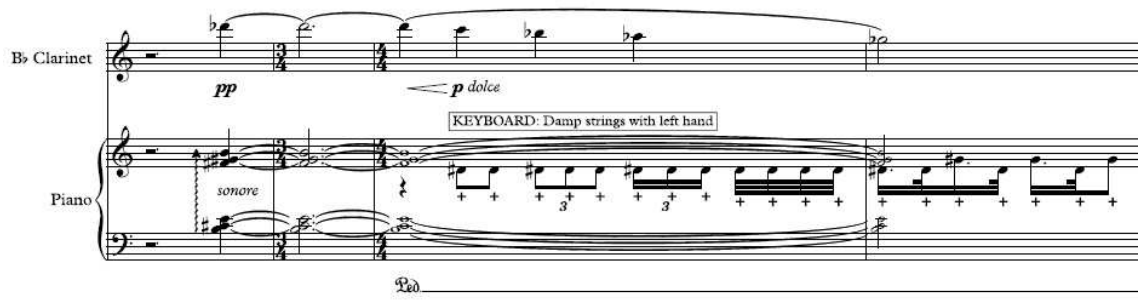
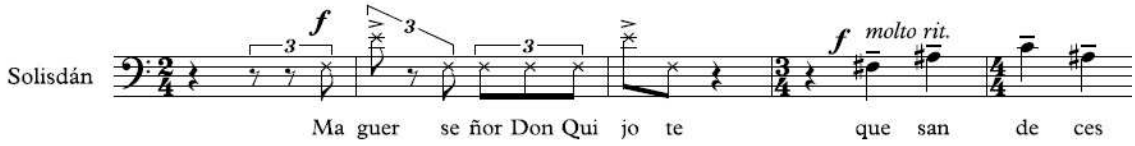


Figure 12: The accompaniment from the clarinet and piano, bars 27-30

The appearance of Solisdán onto the scene implies an abrupt change of mood. Solisdán is an irreverent character, sharply ironic with a ruthless sense of humour. Instead of praising the figure of Don Quixote, Solisdán, without mincing words, expresses his opinion: for him, Don Quixote is completely mad and his adventures always had a disgraceful and ridiculous ending. Solisdán even finishes his dramatic speech with insults for the three main characters of the novel (Don Quixote, Sancho Panza and Dulcinea). The framework of mood in place during this second sonnet is completely different from the previous one. Excitement, nervousness, boldness, malice and irony are some of the new categories that might describe the mood of Solisdán's poem. When reading this remarkable sonnet and being permeated by its moods, other qualities related to virtual dynamics also arose in my mind. The imaginary motion here featured fast, spasmodic and chaotic movements arising probably as a result of mood categories such as 'excitement' and 'nervousness'. However, not all the qualities differ from the poem of Don Belianís: Solisdán's text also shifts sharply from one emotion to other, conveying a sense of emotional instability and vivid sensitivity.

The music written for the sonnet of Solisdán aims to convey all the qualities described before. The most immediate characteristic of the music is its disintegration into small, almost unconnected fragments. The discourse is chopped into violent outbursts or rushes of sound that share their impulsive character but differ in their dynamic and emotional qualities. Some of these rushes are edgy, sharp and piercing, full of misconduct; others are tender and soft, yet ironic. The music sung by the baritone displays a wide variety of registers, dynamics and vocal techniques in a short time, as a result of the schizophrenic mood of the poem. The end of the sonnet is especially surly, following the most malicious words from Solisdán: after a preparatory verse which is not sung but spoken by the baritone, a series of sound blasts from singer, clarinet and piano strike the listener. These sonic rushes correspond to the moment when Solisdán rudely insults Sancho, Dulcinea and Don Quixote. The accompaniment from the clarinet and piano enhances all the qualities previously described. The clarinet player has to use an E-flat clarinet, in search for a more piercing and shrilling sound. Many times both instruments play together with the baritone, reinforcing the assertive tone. Like the singing line, the accompaniment presents spaced outbursts of sound which are sometimes violent and edgy, and other times very tender yet full of irony. The following figure (Figure 13, below and page 102) displays two fragments of Solisdán's sonnet, the first being clearly angular in shape and violent/piercing in character, the second being smooth and tender.



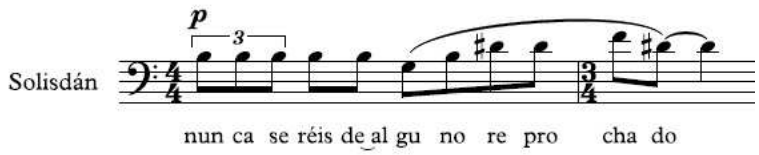


Figure 13: Solisdán, verses 1 & 3

The great contrast between the music composed for the Don Belianís sonnet and the music composed for the Solisdán sonnet is representative of the wide range of musical outcomes reached through my compositional process inspired by mental imagery. Departing from existing extra-musical material (a piece of literature), mental imagery arises in my mind. I let myself be drawn into the qualities of mental imagery, and after this process of permeation, musical outcomes start to flow. Mental imagery, as explained at the beginning of Chapter One (see page 24) is multidisciplinary and features qualities pertaining to a variety of sensory modalities (visual, tactile, motoric, emotional, among others). These qualities resonate with the Embodied Theory of Meaning (Johnson 2007) also discussed in Chapter One (section 1.2.3, page 31). Further, cross-modal qualities are reflected in the analysis presented here, building a mode of discourse that resembles the 'performative analysis' proposed by Cook (2002), 'analog mode of discourse' by Rahn (1979), and that borrows terms and ideas from 'vitality affects', a concept described by Stern (1985).

2.3.4 Far

This work for symphony orchestra may be catalogued as a symphonic poem. The programme behind the music mentally imagines a walk that starts in the small village of Chantada (Galicia) and ends at the top of a mountain nearby, Mount

Faro. This walk would occur in the context of a celebration that takes place on the 8th of September every year and which has a religious significance. On this festive day, people from the village walk, at dawn, towards a small chapel located at the top of Mount Faro. The final metres of the walk (which is 15 kilometres long in total) are done in procession. Afterwards, religious services are offered to the public and people gather in the surroundings, enjoying folk music and traditional food. The title of the piece refers both to the name of the mountain (which in medieval texts appears sometimes written as "Far") and to the fact that, when composing, I was a long distance away from Chantada, the village where most of my family comes from.

An imaginary walk in the context of the celebrations described above served not only as a source of inspiration, but also as mechanism for structural planning of the music. In this way, form is affected by the different steps through which the imagined journey evolves, arousing a five-section structure plus coda that is presented in Table 3 (page 104). The general image of the climb influences the unfolding of the work in terms of density, catalysing an accumulative approach that provokes the merging of several peaks in the piece that are reached after a progressive accumulation of instruments and sonic thickness. These peaks are placed at the end of sections A, B, C and E, and resemble four long and high waves. When putting myself in the general image that inspired the work (climb, long walk, a high mountain far away) I felt a sense of longitude and broadness, an image of constant stretching and vast space. This brought into the music (with the only exception of section E) a primacy of slow-evolving harmonies, slow-progressing *crescendos* and *diminuendos* and large/stretched melodic lines. This is easily noticeable in section A, where the atmospheric texture is maintained from

the first bar until the climax is reached in bar 30, demonstrating a gradual increase in density and thickness.

Section A	**Section B**	**Section C**	**Section D**	**Section E**	**Coda**
Introduction	Climb	Procession	Reflection	Celebration	Departure
1-46	47-111	112-150	151-160	161-233	234-end

Table 3: Structure of *Far*

Section A is metaphorically connected with the beginning of the walk, which starts at dawn. A feeling of augmentation or increase lies at the heart of many compositional decisions taken when creating the opening of *Far*. The increase appears in various aspects of the initial image: an increase of light is imagined (the day is breaking), there is a gradual increase of energy as the walk progresses, and also nature increases its activity as a result of a new day starting. The music clearly reflects this sensation. An inherent pushing force lies at the bottom from the very beginning, in the manner of a constant impulse, steady but unstoppable. Rapid and energetic figurations become gradually more and more present, adding layers of activity to the sonic body. The texture gets gradually thicker by a continuous addition of instruments, and also the rhythmic energy gets progressively more and more bustling. Figure 14 (page 105) shows an example of one of these vibrant layers of rhythmic activity given by the flutes.

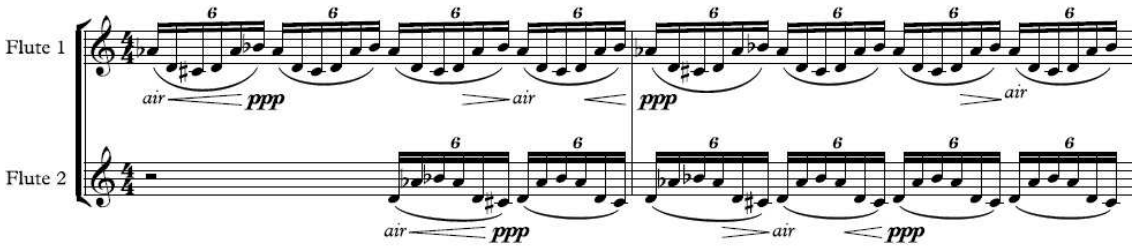


Figure 14: Flutes 1 & 2, bars 10-11

The connection between the sense of ‘increase’ in imagery and the sense of ‘increase’ in the music was achieved by a process of abstraction of the concept during the act of composition. The primary idea, drawn from imagery, was deeply meditated and rooted into an embodied, quasi-instinctive sense of ‘increase’ that was then expressed through a musical outcome. In parallel to the feeling of increase, a sense of slowness and constancy affects the whole image, since the increase happens gradually at an almost imperceptible speed. The 2/2 time signature provides a slow pulse through which to convey the music. Sustained by this metric base, layers of activity are added bit by bit at a constant rate, building a long and barely perceptible *crescendo*.

After Section A we are immersed completely into the piece. The texture becomes much more polyphonic and multi-thematic, and features long and undulated melodies interlocking and crossing each other. This compositional choice is again metaphorically connected with imagery: the imaginary walk is done mainly through narrow and winding paths and trails. These form a complex net of paths that cross, divide and interlock each other. An abstraction of this idea was done when composing. I was embedded into a mental representation of this ‘multipath’ idea, furnished with other elements such as undulation, expectation and joy. The

music presents in this section a horizontal, thread-like nature, featuring multiple strands that move gently and flexibly across the orchestral palette. These musical 'filaments' are mostly curvy, but some of them present edges and moderately sharp angles. Figure 15 shows two of these melodic lines, one of them clearly undulated, the other one more piercing.

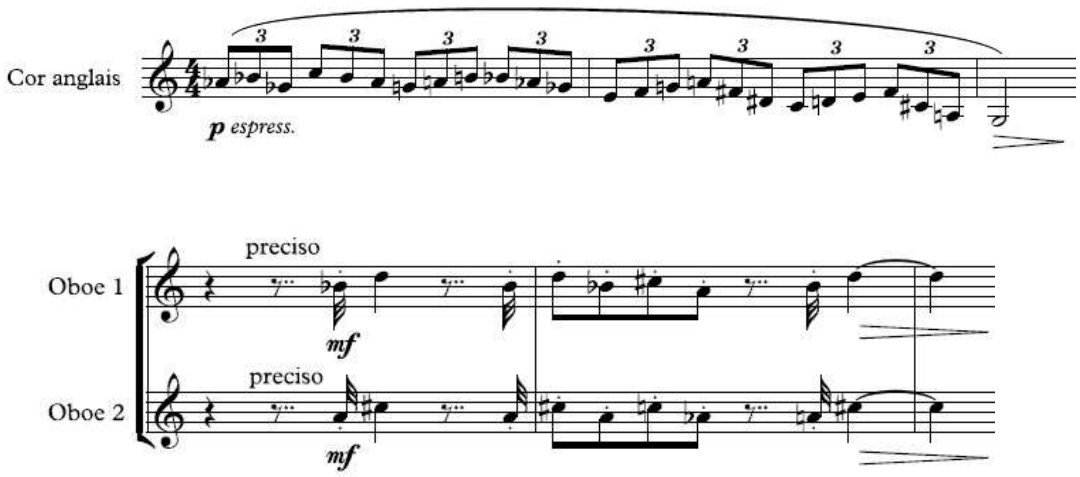


Figure 15: The undulated melody in the cor anglais (bars 57-59)
and the piercing melody in the oboes (bars 76-78)

Apart from the 'multipath' image, a sense of joy and spiritual connection with nature permeates the imagery at this point and, therefore, affects the music from Section B. This feeling is musically conveyed by an *espressivo* quality in some of the melodic lines. This expressive character is not only transmitted through a marking on the score, but also through a particular shape of the melodies, which features many passing notes and *appoggiaturas* that convey a sense of lyricism and reinforce the *cantabile* quality. This technique is easily noticeable in the first

melodic theme of this section, played by the second violins and shown below in Figure 16:

Figure 16: The theme exposed by the second violins in bars 47-48, appoggiaturas circled

As mentioned at the beginning of this analysis, the final metres of the walk are done in procession. This episode from the imaginary journey inspires Section C from *Far*, which thus includes rhythmic and melodic characteristics influenced by Spanish processional music. The music becomes angular, rhythmically sharp and precise, conveying a sense of solidity, rigidity and almost stubbornness, all under a *marciale* tempo and mood. The processional style is set up from the outset of the section, as percussion instruments start a repetitive accompaniment in the manner of an *ostinato* or *moto perpetuo*. Above the percussive *ostinato*, woodwind instruments play a transformed version of the melodic line given at the beginning of Section B. This transformation responds to the new context given by imagery: before, a sense of joy and lyricism combined with the undulated and crisscross 'multipath' image affected the creation of the melody; now, the image of a silent procession, serious and rigid and with no sound apart from the accompaniment of a wind/percussion band, stands as the imagery framework that influences the re-composition of this melody. In this way, the melodic line, although keeping its recognizable intervallic structure, becomes much more articulated, uneven and

rough. The line gets broken at some point by short rests that reinforce the steadiness of rhythm and pulse. The articulation now becomes crucial, chopping the line into small bits and thereby conveying a sense of micro movements within the long phrase. Moreover, the rhythm becomes more varied and richer, including triplets, semiquavers and demisemiquavers that, helped by articulation and accentuation, enhance the solidity of pulse and the *marciale* character. Figure 17 presents a comparison between the melodic line presented at the beginning of Section B, and its transformed recapitulation at the beginning of Section C.

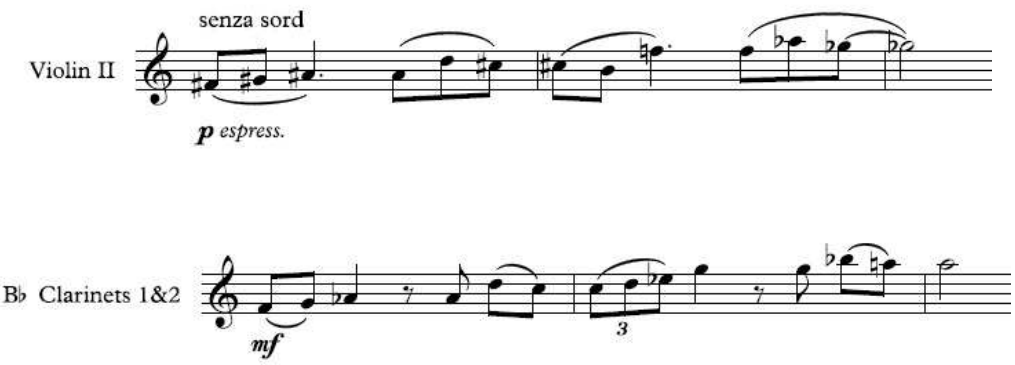


Figure 17: The transformation of the melodic theme, bars 47-48 & 118-119

If isolated from the grand form of the piece, Section C possesses an individual shape with an evident morphological resemblance to the general idea of progressive slow growth, big climax, and final decrease and dissolution. The section builds up a slow but unstoppable *crescendo* by adding instruments and thickness to the orchestral texture. The polyphonic fabric gets more and more complex by the inclusion of more voices and the succession of intervallic/harmonic clashes between them, a process that conveys a gradual

increase of musical tension that is finally released through the big climax attained in bars 135-137.

The processional march declines smoothly and dilutes itself into Section D, which is now much less earthy and shifts to a more meditative, spiritual and reflective mood. This is a musical metaphor of what happens in the imaginary walk: from the processional march, the virtual walker enters the chapel and a religious service begins. Section D features an enormous timbral contrast: the orchestration displays only a string quartet plus a very subtle carpet of sound given by string harmonics. Again, a metaphor lies in the background of this compositional idea, a metaphor of the individual's mind/conscience in constant transformation (represented by the string quartet, especially the melodic line from the first violin) but immersed in nature, the Universe, eternity (represented by the sustained and immovable string harmonics). A feeling of closeness, intimate meditation, acute sensitivity and pure humanity was imagined and internalised when composing this section. As I absorbed the aforementioned sensations, music emerged in the form of a long melody, legato, featuring intervals, appoggiaturas and shapes that convey longing, love, hope, beauty and spirituality. The rhythmic structure of the melody played by the first violin is based on the first stanza of a poem by Galician medieval minstrel Johan de Requeixo, which is contextualised in the festivities of Mount Faro. A fragment of this melody and its relationship with text is shown in Figure 18 (page 110).

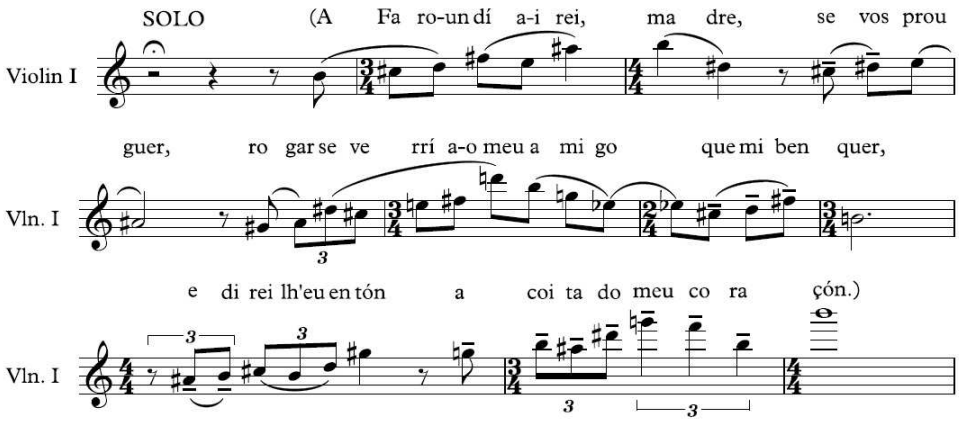


Figure 18: The melody in the first violin (bars 151-160) and its relationship with text

Section E starts abruptly, with almost no preparation from the previous gentle and soft sonority. Hustling rhythmic movements, frenetic sound rushes, angular and edged melodic lines, all combine with explosive dynamic behaviour contribute to create a generally chaotic and extremely energetic section that contrasts enormously with all the previous musical events/scenarios in the piece. Section E developed after imagining the final moments of the festive celebrations on the top of Mount Faro. The imaginary walker would leave the chapel at the end of the religious service and immediately join people who would be gathering outside enjoying folk music, drinks and food. A feeling of extreme happiness was imagined, together with a sense of renewed energy and enthusiastic optimism. Imagery affecting Section E also involved imagined kinaesthetic feelings derived from dancing, an element that led me to introduce Galician folkloric rhythms and melodic shapes in this section. The ternary subdivision of the time signatures comes from the traditional *muiñeira* rhythm (normally in 6/8 and similar to the jig). Moreover, the shape of the repetitive melodic line given by oboes and clarinets from bar 215 is intended to resemble the shape of traditional *muiñeiras*

from Galician folk music. This melodic line, shown in Figure 19, passes through almost all the instruments from the orchestra in a reiterative manner, evoking a constant musical background that invades and complements the frenetic activity.

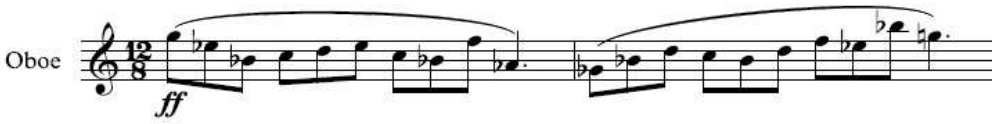


Figure 19: The reiterative melody exposed by oboes in bars 215-216

The general sense of chaos, extreme energy, bustling activity, frenetic dancing and cheering was imagined as a constant and inexorable growth. A sense of imminent explosion becomes evident from bar 215 and, especially, from the *subito piano* at bar 223 that takes off wildly up to the climax of the piece: *Caotico,* bar 229. This moment metaphorically depicts the climax of all the sensations and feelings influencing Section E and described before. It is also the climax of the whole piece, the peak of the grand form described at the beginning of this analysis, a peak that had been prepared and built up from the first bar and that will now deflate now into the final Coda, which in the end will fade away down to complete silence.

The imagery now shifts from the more realistic picture of a rural party to a more vague insinuation of memories from the individual who experiences the imaginary walk. A general feeling of nostalgia combined with a sense of satisfied tiredness permeates the imagery, which becomes imprecise and fuzzy. The musical outcome arose as a consequence of my being immersed in these feelings, images

and sensations that present similar imprecise, vague and loose shapes. The tempo dramatically decelerates and the dynamics also step back to a *sotto voce* level. Fuzziness is conveyed through an atmospheric and light texture and the use of certain techniques such as *tremolando*, harmonics and trills. Thematic and motivic elements from previous sections of the piece are recalled (e.g. the theme from Section D in bar 235 or the percussion *moto perpetuo* from Section C in bar 259). Finally, the music dissolves to the same imperceptible level from which it started, with the strings being asked to play "white noise" softly. The principal violin plays a memory of the tune that appeared in Section D, as a final metaphor of the individual abandoning the underworld and entering a much more mystical one, that of dreams, memories and metaphors.

Figure 20: The end of the piece, violin I performing 'white noise'

2.4 CONCLUSION: A PERSONAL AND ORIGINAL MODEL FOR MUSIC COMPOSITION

The opening section of this written commentary (section 1.1, entitled 'Mental imagery and musical meaning', page 22) briefly accounted for the artistic happening that motivated not only the composition of the set of works presented here, but the reflection on mental imagery affecting my compositional process, the

analysis of this influence in my music and the research into related scientific/philosophical fields. The aim of this thesis is to present my imagery-inspired compositional process as both an original and innovative model of compositional practice, and to disseminate this model to other musicians. I might venture to say that the original model that is conveyed through this thesis would be of interest to the wider community of musicians, not only for composers but also for performers, listeners and music theorists. The model presented here may inspire or inform other composers by opening new and unusual paths of thinking about creative process, such as pre-compositional planning or structure-shaping. Further, it proposes new ways to enhance the meaning of musical features such as rhythm, metre, texture, harmony, articulation, dynamics, etc. In this way, links between some of the musical features and extra-musical categories defined here, such as ‘density’, ‘angularity’, ‘bustle’ or ‘brightness’ may contribute to the creation of meaningful extrinsic connections (similar or different to mine) in the personal practice of other composers. Extrinsic connections present in my own practice have been widely discussed during both chapters, and exemplified in detail during the analysis of four of the compositions presented (see section 2.3, page 75). It is important to emphasise the metaphorical linkage between rhythm and imaginary movement, an association that has inspired and enhanced the meaning of rhythm from a personal point of view.

Moving on from the artistic findings arising from my own practice as a composer, this thesis also undertakes a reflection on the topic of how music conveys meaning to others. Mental imagery is addressed as a crucial element in this field, standing as a catalyser of meaningful associations during my compositional process. As stated before, this original procedure might serve as an example or

inspiration for other composers who intend to build meaningful associations between music and extra-musical categories. But going further, I venture to say that the intimate connection between mental imagery and my music could be of value to performers undertaking the study of any of the eight compositions presented with this thesis. Performers represent the necessary step in between composer and listener, building the sonorous body of a piece of music from both a music score, and being influenced by elements such as programme notes, culture, experience, education and so on (this description of the process of performance is resonant with the concept 'musicking' proposed by Small (1998), see Chapter One, page 31). In this way, programme notes accompany all the compositions presented, focusing on the description of mental imagery affecting them and stressing the metaphorical connections between mental imagery and music both at a macro-level (structure, general organisation and shape) and at a micro-level (particular behaviour and evolution of musical features such as rhythm, texture, dynamics and so on). During the period of time in which this research was developed, several performances of seven of the compositions presented (all of them except *Far*) have been given. I was able to be present at rehearsals in most of them, therefore was able to transmit directly my own thoughts about the pieces to the performers through language. However, programme notes have been and will be of immense value for performers in those rehearsals where I am not able to be present. The compositional model presented here may be helpful for performers not only when playing my compositions, but at any act of music performance. The notion of metaphorical connections with extra-musical elements may help to enrich the palette of resources that a performer holds in order to build a meaningful rendition of a musical work. Reflection on topics such as harmony,

tempo or rhythm might be illuminated by some of the ideas and arguments set out in this thesis, therefore this study hopefully stands as both a contribution to the field of music performance and its philosophy.

Mental imagery is addressed in Chapter One as a constant element in music perception. However, this is not reflected in most of the texts on music history and analysis from the second half of the 20th century, something that may point to the fact that imagery might have been neglected by some music historians and theorists from that time (see Chapter One, section 1.5.1, page 49). At the end of Chapter One (section 1.6, page 65) a claim is made for the inclusion of references or descriptions of mental imagery in the process of music analysis. This inclusion may enhance the richness of the analytical discourse, since the analysis would address a larger set of possible musical meanings. Further, an analytical discourse that takes into account mental imagery would resonate with proposals by Cook and Rahn, specifically their idea of 'performative analysis' (Cook 2002) and the associated 'analog mode of discourse' (Rahn 1979). The interrogation of existing analytical literature and further historiographical research carried out in Chapter One also opens a door for further development in this particular field. A broader survey of the body of existing literature in music analysis could be attempted, comparing the analytical styles found with the epistemological framework in place during the 20th century and perhaps tackling a critical commentary of some texts from the point of view of mental imagery. Arguments pointed out during this critical commentary may be rooted in theories discussed in Chapter One in the field of cognitive science, the philosophy of perception, the philosophy of meaning and musical representation.

Finally, I may venture to propose that the topic of mental imagery and all the cross-modal imaginary stimuli that it encompasses, might contribute to the field of music pedagogy by stressing a large set of extra-musical categories that may help music students of every discipline to build up their artistic personality and strengthen their resources as musicians. I have felt several times during my time as a music student (both in the disciplines of piano performance and composition) that the focus is driven too much towards the technical/formal side of performance (body movements and abilities) and analysis (how to read and draw meaning from a music score). By including mental imagery in music pedagogy from an early stage we would be opening a window towards a vast set of resources for music training in students, specifically referring to the matter of how to draw meaning from musical features such as structure, harmony, rhythm and so on.

This thesis, arising from my own practice as a composer and driven by my own practice as a composer, aims to contribute to music composition not only by adding eight original works, but also by describing, discussing and contextualising the original method of composition carried out during their creation. This original model for music composition may stand as an example or reference point to be disseminated to other composers, who may find new ideas, techniques or intentions derived from it. The study may also illuminate performers, listeners, academics and pedagogues, who might find unexplored angles for reflecting on their practice in a substantially different way. Mental imagery may well be at the core of our nature as sensitive and reflective individuals, shaping our perception, our mind and our communication. Mental imagery may well be additionally at the core of music creation, performance and perception.

Glossary of terms

Absolute music: The name given to music by composers who claimed that only intra-musical elements were considered or used during the process of composition. Based on many arguments discussed in this thesis, it might be said that absolute music does not exist, as intra-musical elements are just part of the musical process (from its beginning, composition, until its end, perception) and not the only elements.

Affect: This term was first coined in the baroque era, when the *Doctrine of Affects* was formulated (Harnoncourt 1988). In this doctrine, an affect is a human passion (love, admiration, joy, etc.) that is translated into music through a particular use of musical variables. Affect as applied in this thesis refers not only to passions, but every affordable meaning that could be conveyed by the music.

Affordances: The set of actions, either physical or mental, that an environment offers to any individual that interacts with it.

Conceptual: That which is organised, relies or is based on concepts. Concepts are pieces of knowledge which are susceptible to being fully explained through language.

Dialectical relationship: The relationship between two qualities that, far from being independent from each other, are connected; hence variations in one of them would provoke variations in the other.

Epistemology: A framework of assumptions or system of knowledge that conditions our thoughts about any issue in qualitative terms. An epistemology of

music theory would be a framework of assumptions about music theory that would determine the way of explaining or thinking about music.

Formalist: The quality of a particular mode of operation that considers mainly technical processes, particularities or behaviours. A formalist mode of music analysis would be based on an explanation of compositional techniques, its relation with other composers' techniques and its innovations.

Image (as applied to my compositional process): The dynamic aggregate of sensory-motor perceptions that include visual, aural, tactile, proprioceptive and kinaesthetic feelings (among others). The image also concerns the dynamic qualities of the moods of an imaginary individual while he/she perceives the mentioned aggregate of sensory-motor perceptions. Each image, which is dynamic and not static, interpenetrates the previous one and the next, thereby creating a perceptual scenic experience subjectively whilst moving.

Imagery: A set of imaginary sensorial perceptions that include visual, tactile, kinaesthetic, motoric and proprioceptive inputs. It also includes the imaginary mood of a virtual spectator. All these virtual perceptions and moods, if frozen in a particular instant, would form an 'image' (see definition in this glossary, above).

Intra-musical element (Intrinsic musical element): Every element of musical meaning that is a formal relationship of the music score.

Meaning: The set of elements, whatever their nature, that an individual relates to a sensorial input they have received. In this thesis, the meaning is considered in the light of the Embodied Theory of Meaning by Mark Johnson, which claims that meaning has multiple forms (concepts, images, memories, affordances, etc.) and

is developed from the relationship between past, present and possible future experiences (Johnson 2007).

Metaphor: A figure of speech in which a concept, term or sentence is directly connected to something to which it is not directly applicable due to its nature. In this study, metaphors are used by connecting the music with descriptions, concepts or categories to which it is not possible to be connected. For example: "The orchestral texture is dark and thick".

Mode of discourse: In music analysis, this refers to the qualities of the analytical text derived from a particular epistemological framework.

Motor imagery: A particular kind of imagery that involves the virtual projection of our body and its kinaesthetic and motoric behaviour.

Musical meaning: The set of elements, whatever their nature, that a listener relates to the sensorial experience of perceiving a musical performance. This sensorial experience may be not only aural, but may also use all the other sensorial systems available to the listener.

Musical process: All the actions involved when creating, performing, perceiving and building meaning from music.

Non-conceptual: That which is organised, relies or is based on knowledge which cannot be fully explained through language.

Perception: The action of receiving external information that stimulates our sensorial system, processing sensorial inputs and building meaning from them.

Phenomenology: The philosophical study of consciousness and the processes and structures of experience.

Positivist: That which is affected by the philosophical chain of thought known as Positivism, which claims that all authoritative knowledge comes from sensorial inputs and logical processing.

Representation: The entity, either physical or mental, that arises after the reality that is represented, keeping structural information about it. A virtual representation aroused during the perceptual process helps a perceiver to build meaning from sensorial stimuli.

Virtual representation of music: The entity that arises in a listener's brain during the perception of music, containing structural information about the music and helping the listener to create meaning from the sensorial stimuli they have received.

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