Sonic Arts Research Centre

School of Creative Arts

Music Through Architecture -

Contributions to an Expanded Practice in Composition

Written component

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Abstract

This research is an inquiry into how architecture can inform, or contribute to the practice of composition. As an architect and composer, I try to find strategies for musical composition in architectural practice and thought, by reframing and confronting concepts and methodologies from both disciplines. My research aims at an expanded practice (and analysis) of musical creation, one that transverses different conceptions of space—from the score based pitch space to the social and political spaces of music's production, performance and reception.

This practice based PhD research consists of a portfolio of nine works that were developed in a dialectical relation to these ideas. The works are presented in a framework composed of five conceptual tools used to articulate music and architecture. These are *Material*, *Site*, *Drawing*, *Programme* and *Use*.

With the notion of *Material*, I explore how the acoustic behaviour of a performance space, or of a 'performative device' affects the musical work. Architectural materials become musical ones as they are implicated in the listening experience. The discussion about *Site* brings to music the notions of place, the local, and everyday life, embracing soundscapes so many times excluded from musical discourse. Musical sites are also architectural sites, always related to their present environment, and their everyday contingencies. *Drawing* is a tool for developing ideas, for thinking (the sketch), but also the main mediator between architect and builder, or composer and performer (notation). When considered in a broad frame of possibilities, from symbolic to graphic systems, it helps to redefine the roles and ultimately to redefine the work itself. *Programme* exposes the constraints and conditions of the creation process, while also revealing the socio-political relations between musicians and audiences, institutions and composers, composers and performers. Programming as framing can be a platform to expand what the work concerns. Through a consideration of *Use*, the work becomes dispersed in a plurality of agents that converge in a useful event.

Thus composition, as architecture, moves from being about conditioning design to designing conditions where musical events may happen.

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Foreword

1. The research

This research is framed within an inquiry into how architecture can inform, or contribute to the practice of composition. It does not constitute an attempt to compare and analyse disciplinary or historical coincidences for theoretical delight, but to concentrate on the aspects that can reframe and help compositional practice to keep evolving in ever more varied directions. *Music Through Architecture* tries to use architecture as a filter to modulate and understand music from a different perspective. As an architect and a composer, I try to find strategies for my work in architectural practice and thought, by questioning and confronting concepts, methodologies and problematics from both disciplines. Having continued my music studies throughout my architectural degree and beyond (over three years of practice as an architect), the parallels became inevitable and constant. One the one hand, I acknowledged the difficulties of incorporating basic sound, acoustic and music related notions into architectural practice, due to budget, programmatic or physical constrains. On the other hand, the methodologies and thought processes intrinsic to architecture articulate notions that can be transposed to musical composition and bring new light. In fact, I believe my approach to music was shaped by a specifically architectural sensibility developed throughout my architectural education. Notions so deeply embedded in architectural practice and discourse such as site or programme, that are subject to complex processes of materialisation, and developed through graphically mediated methodologies, became the motivation for this research.

Thus I have selected five somewhat overlapping areas of approach or *dimensions* informed by architecture, that constitute different conceptual tools with which the relations between music and architecture can be articulated. They are: material, site, drawing, programme and use. These dimensions are not only analytical, but also instrumental in compositional practice, as the works in this research should show. They are the instruments of a methodology that consists in confronting architecture and music, in questioning compositional practice outside its traditional framework: what can we learn from architecture that might contribute to an expansion of compositional practice and not to a contraction, a repetition or a formatting. By exploring the margins where both music and architecture meet, the practice of composition may expand and embrace a wider set of concerns that could provide it with

a clearer or renewed role and purpose in contributing to the present (constant) transformation in the arts. With this confrontation, architecture and music start to expose the porousness of their boundaries, gradually revealing that they can merge into an hybrid art form.

This research is practice based, meaning that is has been done through the creation of a body of compositional works that in different ways explore the proposed research framework, while exposing its relevance. However, the works are not intended to justify the framework. Instead, the latter should be understood as a tool to inquire and understand compositional practice under different lenses, brought from a different discipline. Through them, I hope to expand compositional practice and discourse.

The topic of this research is vast and plural. The extent of its reach can be overwhelming and blur its purpose, and it is far from exhausted here. There are many more ideas, problems and questions in the relation between music and architecture that escape this limited research. Many of them are being explored by other artists, musicologists or even historians and anthropologists. Each of the chapters in this text gives a glimpse of what can lead to greater and deeper investigations. Nevertheless they propose a complex web of connections—a constellation of ideas—by drawing a programme for future use.

2. The portfolio

It is advised that the reader is familiarised with the works in the portfolio before reading this text. The portfolio consists of nine pieces (four of which were created in collaboration with other artists) and includes scores, patches, audio files or any other necessary materials to perform the pieces. To complement this, other materials are provided such as more detailed information about each piece, as well as audio and video files of public presentations. The following table lists the works included in the portfolio:

Individual Works	***Type***	***Presentations***
Music for Sax and Boxes	Tenor sax and ellectroacoustic devices	• Franziska Schroeder at SARC, Belfast, 2 May 2012; • F. Schroeder, *ISMIR*, Porto, 10 Oct 2012.
Inside Out (Situation#...)	Woodwind and electroacoustic devices	• Linda Walsh oboe, SARC, Belfast, 25 Oct 2012; • F. Schroeder, alto sax, SARC, 14 Mar 2013; • F. Schroeder, soprano sax, *Notation in Contemporary Music Symposium,* Goldsmiths University London, 18 Oct 2013.
Apartamento em Lisboa (narrador presente)	Electroacoustic 4 ch	• *Ibrasotope #60*, São Paulo, 25 Apr 2014; • *Invisible Places*, Viseu, 18-20 Jul 2014; • *RadioCona:ZimaFM*, Slovenia, 15 Feb 2015.
Travelogue #1	Electroacoustic 4 ch + video subtitles	• *Musica Viva Festiva*, Lisbon, 13 Dec 2013; • *Ibrasotope #60*, São Paulo, 25 Apr 2014; • *BEAST FEaST*, Birmingham, 2 May 2015.
Tłumaczenie	String quartet	• The Royal String Quartet, *Sonorities Festival*, SARC, Belfast, 22 Apr 2015
CollaboratIons	***Type***	***Presentations***
No Chords Attached (as *Unlikely Places* ensemble, with Eduardo Patrício, Pedro Rebelo and Rui Chaves).	Piano, soundwalkers and electroacoustic 6 ch	• *ICMC*, Ljubljana, 14 Sep 2012.
Come Across (as *Unlikely Places* ensemble, with Eduardo Patrício and Rui Chaves).	Electroacoustic 3 ch + videos + live projection	• *The Global Composition Conference*, Hochschule Darmstadt, 28 July 2012 (video version in a *poster* presentation); • *Sonorities Festival*, SARC, 28 Apr 2013; • Workshop for *Ecos*, *Osso*, at the *Lisbon Architecture Triennial*, Sep 2013.
A Pirâmide e o Labirinto (with Bernardo Loureiro, Filipe Barrocas, João Gonçalves, Julia de Luca and Rodrigo Arruda).	Artist residency and final performance	• São Paulo Cultural Centre and Contemporary Art Museum of the University of São Paulo, Mar-May 2014.
Play (with Matilde Meireles)	Site-specific project	• *Belfast Festival*, 24 and 25 Oct 2014.

Table 1 - List of works and public presentations.

The portfolio is provided in digital format (in the attached memory stick) made to work as an offline website to facilitate navigation. It should be opened in a web browser (open file index.html, preferably in Google Chrome).

Each of the works presented contribute to this thesis in different ways. They all relate to several of the mentioned dimensions to different extents, but were not composed with the intent to illustrate the operability of those conceptual tools. On the contrary, they created these dimensions as much as they were created by them—they were the platform from which this research was shaped as much as they were shaped by it. The portfolio is thus the documentation of experiments in composition that articulate architectural ideas; it provides a variety of examples of expanded compositional practice, with one common root—architecture. The individual contributions of each work to this research is detailed in the written component of the thesis.

The four collaborative works show different levels in the sharing of creative process. The different types of collaboration are briefly described here. *No Chords Attached* and *Come Across* were created by the *Unlikely Places* ensemble, formed by Rui Chaves, Eduardo Patrício and myself. Pedro Rebelo also participated in the creative process of *No Chords Attached*. The group's usual way of working is based on many and long discussions and trials over initial common interests. Each contributed with his own vision to the development of the ideas in a genuine synergy. In the case of *No Chords Attached* each of us had a specific performative function (as specified in the portfolio). In *Come Across,* the three of us had equivalent roles on the performative level as well.

Play, a site specific performance piece involving live video, a brass ensemble and two squash players, started with Matilde Meireles' proposal to collaborate in the creation of a site-specific work about the squash courts in the Queen's University's Physical Education Centre (PEC). From this point we developed ideas for over a year of regular meetings and experiments on site. The project soon became very ambitious and we invited Richard O'Sullivan to collaborate by creating two films, and performing as a camera operator alongside the squash players and musicians, providing the live feed that was projected on both courts. Closer to the end of the process John D'Arcy and Clara Kane, besides performing, worked as producers and even helped to solve some issues in the script at the last minute. The brass players not only were given some space to create some of their material (the *figures* in the scores), but also contributed to some changes

in the scores by giving suggestions and proposing practical strategies, like cues. The squash players were an important contribution to better understand the dynamics of the game.

During the residency in Brazil leading to *A Pirâmide e o Labirinto*, all the work was developed in collaboration with a group of five young artists and architects from the University of São Paulo (see portfolio for further details). For a period of over a month, we discussed many ideas and, although I was directing or coordinating the work process, most of the ideas were developed in dialogue, some even suggested by other elements of the team.

3. The text

The written component consists of an attempt to frame the presented works inside a common structure through which, I propose, they can be read. If the works are not exhausted by this perspective, together the two components might contribute to new insights into compositional practice while suggesting new directions of research.

In the introduction I will first try to contextualise this research by exposing a general view of the relations between music and architecture, and focusing on some of the landmarks and practices that populate the history of this intersection. After that, I will introduce the main questions that have motivated this research. These underlie all of the works presented in the portfolio, and will be reflected and developed in each of the subsequent chapters.

Each of the chapters develops one of the dimensions referred in point 1. of this foreword, and is presented with a similar structure. The dimensions operate within a network of relationships but are presented sequentially for clarity. There is no hierarchy intended in the order of their discussion. By first exposing an initial problem, an irresolvable duality or binary opposition, the text moves to analyse each dimension in the field of architecture, indicating in advance the concerns that will be transposed to music. After that, they will be re-contextualised by proposing an approach that can become useful in compositional practice. Each chapter ends with a discussion of the relevant portfolio works analysed through these lenses (in the subsections with the prefix *In practice* - …).

The following diagram shows the works that are discussed in each of the chapters, also revealing their primary conceptual framework. This diagram does not exhaust the possible analysis of the works, however, I have focused on the main strategic relations, leaving out further relevant connections for reasons of space.

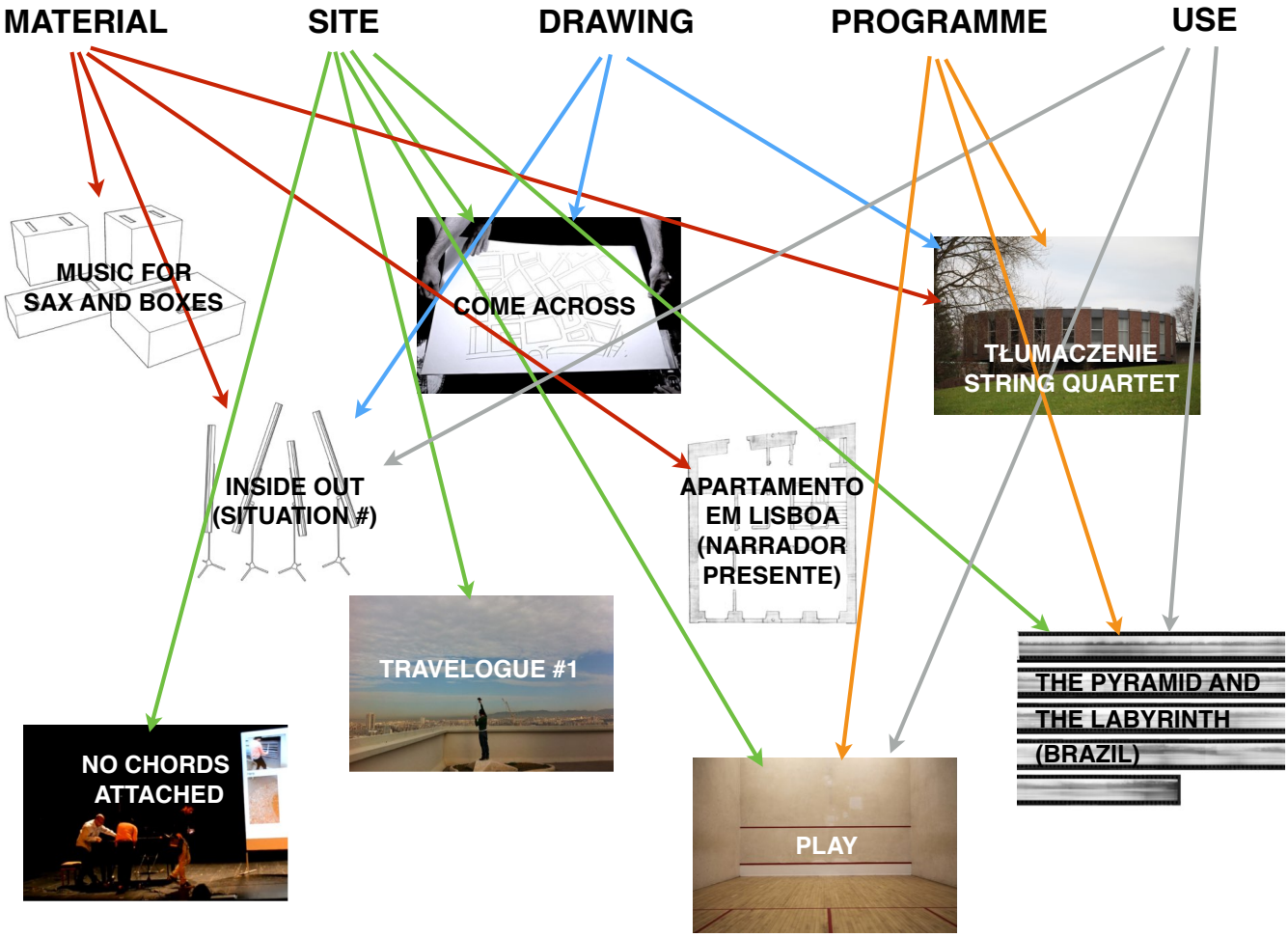

Fig. 1 - Diagram illustrating the relation between the theoretical framework of the research and the portfolio works.

Parts of this text were developed from papers presented in conferences during the research period. The following table lists all the paper and poster presentations:

Paper	***Event***	***Date***
Playing Notated Space	*Notation in Contemporary Music: Composition, Performance, Improvisation*, Goldsmith's University London	19 Oct 2013
Music and Architecture - Towards a Shared Approach	*Composition in the 21st Century,* Trinity College Dublin	6 Mar 2014
Composition Beyond the Score	*Espacios Sonoros*, Universidad Autónoma de Madrid	4 Dec 2014
Composing Spaces of Inquiry	*Compositional Aesthetics and the Political*, Goldsmith's University London	20 Feb 2015
Music Through Architecture - a few experimental works	*Mind the Gap! A national workshop on practice based PhD research in the creative, media and visual arts*, National College of Art & Design, Dublin.	17 Apr 2015
Trigger Place - A Game of Music and Architecture (with Matilde Meireles)	*BEAST FEaST 2015: Music – Space – Architecture – Place*, Birmingham University	2 May 2015
Poster	***Event***	***Date***
Come Across (video version as a *poster* presentation)	*The Global Composition Conference*, Hochschule Darmstadt	28 July 2012
Music and Architecture - Towards a Shared Approach	*Music, Digitization, Mediation: Towards interdisciplinary music studies*, Oxford University	11-13 Jul 2013

Table 2 - List of paper and poster presentations.

Introduction

1. Sound and space, music and architecture

The relations between music and architecture are many, and have been, for a long time, explored not only by musicians and architects, but also by other authors in different fields of study. These relations have been made on several different levels, some of which impose particular definitions of each discipline, based on specific aesthetic or philosophical notions or motivations. In this research I try to bring the focus towards the praxis of both disciplines, where many theoretical concerns are relativised and others emerge as more significant than would be assumed.

I will start with one of the main differences between music and architecture—their blatant material contrast. It is surprising that the two sister disciplines constitute two such opposite materialities that are reflected so deeply in both their production and in the experience of their objects: "sound is lightweight, inexpensive (or free) and leaves no (or few) lasting traces, while buildings are heavy, expensive, and more or less permanent" (Ripley, 2007, 7). This fact is related to a generalised differentiation between the two from the side of perception. As Colin Ripley adds, "Sound and vision therefore stand on two sides of a cultural divide, with the sonic arts—music and sound art—on one side and the visual arts—including architecture—on the other" (ibid). Music, as an art of sounds, could be considered invisible as sound is invisible, but it is clear today, also because of the growing interest in sound by architects and planners, that architecture is not simply visual.

1.1. Beyond the visual and the aural

If music seems to appeal only to the hearing, architecture calls for several sensations simultaneously. In fact, its "perception has evolved in the direction of a complex perceptional experience: the visual, the tactile, kinaesthesis…, even the resonances, the variabilities of light, multiple topologies and radical oppositions—Summer/Winter, South/North, day/night—that, happening over matter, imprint it with virtual formalisms" (Rodrigues, 2002, 46). The experience of architecture is generally seen today much more in this broader perspective that encompasses all senses, and that acknowledges a complex interference of multiple factors beyond a linear relation between object and subject. The shift of perspective, from regarding architecture as an

object of contemplation—as something to be seen—to consider instead the rich interactions between the body of architecture and the human body, is related to the growing interest in recent decades towards a phenomenological approach to architecture. Yet, sound seems to have been delayed in taking part of that journey: "The modern architect is designing for the deaf.... The study of sounds enters the modern architecture schools only as sound reduction, isolation and absorption" (Schafer, 1994, 222).

On the other hand, we can see the same phenomenological tendency happening in musical practice and discourse, where sound as material, as a physical phenomenon, seems to replace more symbolic concerns in a notion of music as language or representation. Could we now say that the experience of music is exclusively aural? Do we not experience music through time but also in space, the same space that our bodies occupy and where they experience a number of other simultaneous phenomena? Aren't we, by saying that music is an art of sound, reducing it to an *object of aural contemplation* while ignoring so many other fundamental experiences?

1.2. Sound and space

Every musical experience is held in a specific space, and the perception of sound is always affected by the properties of that space, be that a concert hall, our living room, a church, or a free field. "No sound exists outside of space and no space is truly silent. [Both] are mutually reinforcing in our perception" (Ripley, 2007, 2). Thus, listening to sound is always listening to space. We can extend this to say that there is no music without space, and no architecture without sound—each qualifies the other. Furthermore, music is modulated by the architecture that houses it, as both are experienced simultaneously. Thus the question becomes: why do we separate musical experience from architectural experience, how can we even conceive music as an autonomous object, detached from that which is part of its constitution?

This research aims at acknowledging the heteronomy of musical practices, and particularly of composition as an exercise that integrates, and is integrated in, a broad notion of space.

1.3. Problematic oppositions

On a text about Xenakis' work, Sven Sterken notes that, generally speaking, the speculations about the relation between music and architecture occur on two levels. One is the *intellectual* level, that

> dates back to ancient Greek thought and is linked to the problems of form and structure. The most elaborate paradigm here is 'the theory of harmonic proportions'. This synthesis of rationalism and metaphysics knew its peak in the Renaissance when numerous architects and composers tried to shape architectural and musical form according to the same numerical principles (Sterken, 2007, 21).

The other is the phenomenological level in which "the expressive quality of art is central. Here, beauty does not arise from the intricate structure of the work of art, but from its aesthetic effect and its immersive power" (ibid).

An analysis based on these two levels sets the ground for this text. If on one hand, it seems to reduce a complex matter to an oversimplified duality, on the other hand it exposes the old problematic opposition of mind to body, with its consequent hierarchical implications. The two levels might be useful to analyse Xenakis' work: the first, in which *number* is the common element between music and architecture, organises his early work, approached "from a scientific and mathematical perspective"; his later work shows a more pragmatic approach, where *space* is used "as a means to articulate the complexity of the musical language and enhance the sensuous experience of sound" (ibid, 22-23). The problem with this view is that it can lead to the illusion that works fall under one *category* or the other, as if any work could be independent of its sensuous experience, or as if it could *determine* that experience. This discussion will be developed throughout this text by engaging in an effort to complicate the duality beyond binary thought, to reconfigure it into other more complex structures that could respond better to a practitioner's questions. It is important nevertheless to note how the practice of both architecture and composition are traditionally concentrated around the first level, where the composer and the architect, born as we'll see, with (from) the process of writing/ drawing, become identified with the coding of symbols that are much better able to represent mathematical operations, than sensuous experiences.

1.4. Spatial compositions

The acoustics of rooms has always been acknowledged by musicians who, more or less consciously, adapted their performances to best fit specific conditions. Important architectural changes had an impact on musical composition, as can be seen in the relations between the reverberant roman and gothic cathedrals and gregorian chant, the small protestant churches and Bach's masses, and more recent adaptations to dry concert halls (Blesser, 2009, 111). It is noteworthy that "[i]n all cases, the acoustical properties of the space originated from social forces unrelated to the aural arts—industrial noise in one case, religion in the others. Composers simply adapted to the prevailing spaces" (ibid).

The deliberate use of spatialisation as a tool in musical composition is not a recent phenomenon. During the sixteenth century, the Venetian poly choral practice known as *Cori Spezzati* (broken choirs), developed antiphonal forms in spatialised settings. It was a manifestation of spatial compositions that emphasised spatial dialogue between different choirs, enhancing the immersive quality of music. These compositions were matched only in the 20th century by monumental orchestral works such as Stockhausen's *Gruppen* (1955-57), Xenakis' *Terretektorh* (1965-66), or Berio's *Formazioni* (1985-87), among many others that came to spatialise orchestration. Electronic music has in turn emphasised and developed the location (or spatial distribution) of sound through more flexible tools, until that became central to its aesthetic[1], and in turn influenced instrumental music. Spatialisation developed from being a way of clarifying polyphony (Boulez, in Harley, 1994, 130), thus allowing a more complex counterpoint (as with Henry Brant, cf. Taruskin, 2010-V, 421), to assume the position, according to Stockhausen (1988, 86), of the fifth characteristic of sound in Western music (topical), after dynamics (fourth), timbre (third), duration (second) and pitch (first). Stockhausen's view is but one example of how what started as a consideration of the sensuous experience of space, is captured to become another controlled parameter for combinatorial operations. But other ideas of spatialisation, such as Varèse's *trajectoires sonores*, suggest different orders of spatial expression, more concerned with an immersive experience of sound in space.

[1] particularly in acousmatic music (Smalley, 2007, 35).

1.5. Xenakis - composing sounds and spaces

Varèse's *Poème Electronique* was spatialised by using 325 speakers distributed in a specific space[2]—the Phillips Pavilion (1958). The movement of sound was not dependent of the position of the listener who was also moving—it was related to the space that enveloped it. That particular space was a milestone in the history of the intersections between music and architecture, not only because of how Varèse's music occupied it, but also because of the way Xenakis designed the building. The parallel between his *Metastaseis*' score (1953) and this building reveals one single *design idea*, a search for "a 'general morphology' beyond the disciplinary boundaries of music or architecture" (Clarke, 2012, 214). This idea, developed through drawing—not a representation of the final artwork, but as a creative process, a *way of thought*—was then materialised in different bodies: glissandi in music or ruled surfaces is architecture. However, *Metastaseis* is not related to the Phillips Pavilion in any other way—it was never played there.

In other collaboration in the office of the architect Le Corbusier, Xenakis' design ideas can be found in the 'undulating glass panes'[3] found on several buildings, of which the most known is the La Tourette convent. This project posed the particular problem of translating or transposing rhythmic elements from music to architecture, from a temporal structure to a spatial structure. Despite Le Corbusier's enthusiasm for what can be considered a naive view of music as a linear model for a sequential experience of architecture (the archetype for his *promenade architecturale*, cf. Clarke, 2012, 222), Xenakis would give up on a simple transposition of the musical elements from *Metastaseis* to the façade's panes, using a more complex approach (Solomos, 2013, VI, 3.1,9). From his perspective as a composer, Xenakis valorised instead the non-linearity of architectural elements, that unlike traditional music, could be experienced synchronically, and implemented this idea in his music (Clarke, 2012, 221).

His later works, the *Polytopes*, tried to create a synthesis of multi-sensory perception by composing space, light and sound. Although these were conceived as "spectacles … designed for a given locale" (Kanach, 2008, 247), his last realisation of this type included his own design for the physical structure that was to house the event: the *Diatope* was first presented for the inauguration of the Georges-Pompidou Centre in

[2] (cf. Tazelaar, 2013, 159-62)

[3] or 'musical glass panes' as Le Corbusier preferred to call them (cf. Kanach, 2008, 41).

Paris, but was conceived to be itinerant. The structure was dismounted and reassembled for the second and last time in 1979 for the Bundesgartenschau Festival in Bonn. This interpretation of a *gesamtkunstwerk* involved a different composition for each medium, a "total dissociation between visual and aural perception" (Sterken, 2007, 33) again suggesting his disinterest "in musical 'translations' of architecture or vice versa", for "addressing the same message to the different senses would result in a pleonasm (ibid, 32-33).

1.6. From music to sound

Xenakis is no doubt the most important historical reference in the recent intersections between music and architecture, and has most certainly influenced some of the thinking behind my work, if perhaps not so much as could be expected in the portfolio that this text accompanies. His approach is also at the frontline of what Makis Solomos has called a paradigm shift in music culture, in which we are changing from a *tone* centred musical culture to a sound culture (Solomos, 2013, INT, 2, 4). This shift has been thought of by some musicologists as equivalent to a phenomenological reduction (ibid, 6). Nevertheless, Solomos argues that despite the fact that phenomenology still provides a valid explanation for many musics, the refocus on sound should instead be thought of as *emergence*—something that comes from a progressive evolution internal to music, arising from a growing complexity, that can generate new properties (ibid, 7). This idea does not necessarily mean that music based on sound will replace the one based on pitches: these are still used—as is the case of spectral music—but the work on pitches, with its higher complexity, produces objects that are not perceived as chords but as *composed sounds* (ibid). This shift, to be further discussed in the first chapter, has pushed musicians and other artists to grow an interest towards architecture, conceived as an extension of their interest towards space, for *the emergence of sound is equally the emergence of space* (ibid, INT, 3, 9).

1.7. Architectures for sounds

An interest in space and architecture has manifested itself in various forms in the work of many contemporary musicians and sound artists. The concern with the relation between sound and space, has emerged from different areas beyond music, forcing it to re-situate itself in the landscape of creative practices, to which this work is but a small contribution.

The Phillips Pavilion and the *Diatope* are not the only milestones in the relation between musicians and architecture. Other famous examples include the German Pavilion in Osaka's World Fair of 1970 (Fritz Bornemann and Stockhausen), *Prometeo*'s ark of 1984 (Renzo Piano and Luigi Nono), and the Swiss Pavilion for the Hannover Expo in 2000 (Peter Zumthor and Daniel Ott). These three examples, together with the Phillips Pavilion show different typologies not only in the building itself, but in the relation between the architect and the composer. If Xenakis ended up assuming both roles[4] in his pavilion, the other buildings were created by architects with more or less intervention from the composer.

The Swiss Pavilion is a work of architecture conceived by Zumthor, to which Daniel Ott composed music. The *Sound Box*, as it is known, aimed at exploring all the senses in one complex space, converging in its project literature, fashion design, gastronomy and music (Soriano, 2008, 195). Despite a clear control of all the levels of experience in the conception of the space, the music was composed after the building was designed, and explores both structural and mathematical aspects as well as a more experiential driven approach. The music enhances the experience of the building as an instrument, and is dependent on it, but it did not affect the design in a reciprocal way. Zumthor is known for his care for sound in his projects, as is the case of the therms building in Vals, Switzerland, where the several bath rooms resonate the sounds of the water in different ways. There is even a *sounding stone* room, where sounds of percussed stones[5] immerse the visitor's body from every direction, and a *sound bath* that creates very strong and lasting standing waves from its geometry, vigorously amplifying and extending any discrete hum. His work is an example of an architecture that includes music and sound in projects not specifically programmed for that.

Prometeo is a different case where the composer approached the architect to design a structure that would configure a new relation between musicians and audience, between sounds in space. Renzo Piano's structure consisted of an ark that was to be

[4] It should be mentioned that the project was commissioned to Le Corbusier who conceived the idea, in a floor plan sketch, of a building in shape of a stomach. Being too busy with projects in India, he put Xenakis in charge of the project who then conceived the ruled surfaces from his *Metastaseis*, cleverly adapted to Le Corbusier's initial floor plan. Le Corbusier only later publicly recognised what he admitted to be a mere collaboration. But Xenakis' hand is clear in the most part of the project. Moreover, not only did his musical thought influenced his design, he also composed a small work (*Concrète PH*) to be played in between sessions (cf. Clarke, 2012).

[5] a recording of a piece written specifically for this room by composer Fritz Hauser.

assembled inside existing buildings. It is a kind of music-specific architecture—designed for a specific musical work, it became part of it[6].

Stockhausen's contribution for Bornemann's design was more related to the interior, that he saw as a perfect space to create a full surround sound system, a perfect abstract space to create an immersive sound field. With more than fifty speakers in six layers, the sphere housed a number of concerts showcasing German new music. In contrast with the other examples, this project is more iconic as a concert hall, showing a functional approach towards the presentation of new music, and not so much a specific relation with one musical work. It would nevertheless push the development of this architectural typology—the contemporary concert hall. Many other projects today illustrate the variety of approaches and tensions between different conceptions of auditory spaces. From IRCAM in Paris (1978), to SARC's Sonic Lab in Belfast (2004), or the ZKM Kubus in Karlsruhe (2006), the tendency of these places is towards a variability of the architecture to respond in different capacities to the qualities of the music performed. They are the perfect laboratories to experiment and develop specific technologies, techniques and aesthetic approaches to sound, by enhancing or diminishing their acoustic interference.

1.8. Sound installations

Not all composers or architects have the opportunity to build their own music pavilions, and thus the relations between music and architecture found their development in other streams of the sound-space culture.

Sound installation is one of those streams, if itself multiple and branched. In many cases more connected to the visual art world, it became central within the sonic arts, precisely because of the relation between sound and space. The intrinsic spatial qualities of sound make it difficult to be manipulated into forming a *sound sculpture*, which inevitably opens a relation to the specific place where it is *installed*. Some authors define two types of sound installations: that of the visual artists, that constitute an extension of the art installation, where sound operates as an additional element, valorised for its *plastic* qualities; the other is the work of musicians, where temporality, although less important than in a concert work, is determinant (Solomos, VI, 3.2, 2). Nevertheless, beyond what might be considered a rigid distinction, sound installations

[6] subsequent realisations of *Prometeo* happened without Piano's ark, and specific adaptations were made (Soriano, 2008, 151).

work around the relation between a *device*, a space, and many times, the people who explore or interact. From Max Neuhaus' seminal urban interventions to Bernhard Leitner's explorations of *sound architecture*, or La Monte Young and Marian Zarzuela's *Dream House*, and David Tudor's *Rainforest*, sound installations have helped to blur the margins of the different disciplines working with sound.

One of the important contributions of installation art—and it is not by chance that it developed alongside conceptual art—is its relation with context. By acknowledging and incorporating its space of presentation, installation art can more easily investigate and expose the relations rooted in space, from its institutional dependence, to the social and political implications of its production and fruition, in what can be called a site-specific work. "The site-specific artwork is contextually aware, producing not so much an object of attention but a set of conditions by which context is brought into focus" (Labelle, 2006, 15). On the other hand, technology has created new possibilities of exploring the sound-space relation beyond the mere distribution of sounds, engaging artists in ever more unpredictable experiments.

1.9. Experimental music

Music could not be indifferent to the revolution in the many fields of art that happened mainly in the late 1960s and 1970s—of which installation art is but one manifestation—and indeed many musicians explored the limits of their practices, diversifying more and more the fields of music and sound art.

> By pushing the envelope of musicality to an extreme, found objects, audience, and social space coalesce in an unstable amalgam of input and output, technologies and their inherent ability to arrest and accentuate sonic detail, and the performing body as situated within found environment come to initiate a vocabulary by which experimental music slips into sound art (LaBelle, 2006, xiii).

In a diversified landscape of sound practices, the figure of the experimental composer appears as an alternative to more traditional approaches to composition that insist in maintaining their autonomous position ignoring the conditions they are nevertheless embedded in. "In the experimental 'open work,' musical arguments are replaced by processes that result in 'music', and the writing of music is supplanted by the creation of situations" (ibid, 7).

The experimental composer, as a creator of *situations*, expands the traditional craft of score writing, to engage with a broader network of disciplines as is the case of architecture. The case of Alvin Lucier is particularly relevant to this research, as he not only focused on the act of exploring sound and space as an expressive performative quality, but he also engaged with sound as material, the physicality of which is intimately related to the physicality of architecture. "Thinking of sounds as measurable wavelengths, instead of as high or low musical notes, has changed my whole idea of music from a metaphor to a fact and, in a real way, has connected me to architecture" (Lucier, 2005, 88).

Lucier concentrates many of the concerns felt in the art world at the time, from the implicated body, the experience of everyday spaces and site-specific explorations, to technological experiments, conceptual approaches, and interdisciplinary synthesis. Brandon LaBelle's description of the act of listening to a voice in a space, is an enlightening starting point to an analysis of Lucier's too often mentioned work *I am sitting in a room* (1969):

> … what we hear is less the voice itself and more the body from which the voice resonates, and that audition responds additionally to the conditions from which sounds emerge, such as the chest and the resonance of the oral cavity. And further, the sound source makes apparent the surrounding location against which emergence occurs, from outside the body and to the very room in which the body is located. This slight shift overturns the source as a single object of attention, as a body of sound, and brings aurality into a broader field of consideration by introducing the *contextual*. Sound not as object, but as space (LaBelle, 2006, 123).

1.10. Soundscape

Another field of study that converges sound and space, and has contributed to the expansion and multiplicity of sound practices stem from the notion of soundscape. Coined by R. Murray Schafer in the late 1960s, the term can be understood as an expansion of awareness from the notion of an acoustic space towards a sonic environment. Again, context becomes central to the listening act, with the acknowledgement of our ambivalence as listeners and sound-makers. This initial step opened the way to new different disciplines based on the relations between sound and environment, many supported by always improving recording technologies that allowed new approaches to analysis. It is significant that the initiators of this endeavour are

composers for they expose not only an acute concern with everyday sound, but also traditional music's neglect of it. "[T]he discovery of the acoustic characteristics or, more exactly, of the characteristic structures of living spaces" (Böhme, 2012, 14), not only contributed to the expansion of musical material, but also de-emphasised the role of the composer, focusing on sounds' ability to refer and affect. This will be further discussed in the second chapter.

1.11. Changing landscapes

In view of the current panorama of sound art practices, composition seems blurred into a variety of practices that challenge any fixed definition. In fact, it seems counterproductive to try to define such a changing practice. Composition, originally rooted in writing, is moving beyond literacy as its central concern. The development of so many variants of musics not dependent on scores, and of sound practices distinct from music come to question the role of the composer. In a transforming landscape that includes jazz and popular musics, experimental music, free improvisation, sound installations and other forms of sound related art, soundscape and field recording practices, algorithmic composition, network music, and so many new and still unnamed practices and genres, the composer either disappears or becomes something else—a performer, a sound artist, an architect; a mediator of 'processes that result in music'. This research aims at finding one in many possible routes in that expansive compositional landscape, while accepting and contributing to a blurring between the fixed categories of the several actors of musical creativity.

In this first section I have exposed some of the main areas of intersection between music and architecture that have informed this research. The remainder of this introduction discusses more concrete problems that were raised in, or that motivated, the works presented in the portfolio. They introduce the concerns that will be further developed in the next chapters.

2. Confrontation as methodology

The analogous reading of music and architecture can sometimes seem futile. Many aspects of each discipline are not related and there might be no advantage in even comparing them. It can even be "a means of sidestepping what really counts":

> The affinity and the exchange between the arts is no doubt both important and noteworthy. But the disposition to speak about architecture in a way derived from the other arts is not only detrimental to the reception of architecture, because it obscures its own genuine concerns in a fog of metaphors; it is also a danger to architects. It leads them astray with a borrowed self-image; it beguiles them into basing their work on an understanding of the artistic that has been lifted from other arts (Böhme, 2005, 399).

The affinity in this case, has however been revealing itself "a fruitful heuristic procedure for the architect and an enlightening metaphor for the beholder" (ibid), questioning musical ideas and suggesting new approaches to musical composition. By confronting concepts, methodologies, aesthetic developments and pragmatic concerns, it seems that each discipline can take advantage of the other's developments, even if the comparison reveals contrast and opposition. Composition is less constrained to experiment than architecture, for reasons already mentioned, and thus it is the privileged field in this endeavour.

The common ground between architecture and music is, as we will see, so encompassing, that confrontation goes beyond analogy or metaphor, actually suggesting that a work can indeed constitute both music and architecture. By deconstructing some of the definitions and dualisms that resist in the practices and discourses of both disciplines, we find the plurality of possible practices outside the strict barriers of disciplinary definitions.

This can be done both theoretically and through practice—through the creation of work that resists or/and questions traditional concepts and motivations, or historically reified notions of what a work of art is. By expanding the field of activity of the composer towards a broader conception of sound in/ and space, practice can reveal different and new conceptions and directions to explore.

Thus, the recurrent use of parallelisms between architectural and musical ideas are part of the method of deconstruction of the notion of musical composition as well as the building blocks of a different, expanded conception of music that can also *become* architecture, and not a mere translation.

3. Composers and architects

To compose does not necessarily mean to write music. To compose is to put things together, organise, arrange them in a relation that is somehow balanced, coherent, or meaningful. This does not apply only to music, but to architecture, painting, choreography, or any other creative activity. In any case, it is traditionally related to concepts like measure, proportion and scale, and finds its grounds in drawing and writing. But the architect or the painter do not call themselves composers. They compose as a part of their work, which includes many more activities. Composition is embedded in many aspects of their work without ever claiming the main role. One could ask why that is so in music. Why has the composer become associated with such a narrow procedure like organising notes on a piece of paper?

According to Richard Taruskin (1995, 353) the thousand-year-old development of the compositional act through writing, was not only responsible for distinguishing the role of the composer and the performer, but also for giving music a "physical reality independent of the people who made it up and repeated it" (ibid). This was, Taruskin argues, the first stage towards the objectification of music as "art". The second was printing, that allowed the creation of a market, emphasising the notion of music as thing. "The durable music-thing could begin to seem more important than ephemeral music-makers" (ibid). Following this, the Romantic mind frame created "the idea of the transcendent and autonomous art—art that was for gazing and not for doing". Composers, working outside real time, and perhaps the real world, "were not doers but creators, and became the object of the reverence that is an immortal's due" (ibid, 354).

Thus, until the development of electroacoustic music, the craft of the composer defined itself through writing. The creative process developed mostly in that act, in the production of a *text*. And so this growing importance of the musical score, enhanced with the reification of music and the idea of the transcendental creator, emphasised the preconception of the work, its design, its intricate structure. The score, previously a means to perform, a medium between creators (the composer and the performer), becomes an art-object in itself, subject to appreciation, analysis and criticism. Thus, the emphasis turns to the sending of the message (poiesis) instead of the receiving (esthesis), constituting what Taruskin calls the "poietic fallacy: the conviction that what matters most (or more strongly yet, that all that matters) in a work of art is the making of it, the maker's input" (Taruskin, 2004, 10).

The last stage in the objectification of music according to Taruskin is recording. It takes the music-thing to a new level, while also creating a "whole new category of music-gazers" (ibid, 1995, 354). Recorded music becomes a commodity, and makes "possible the idea of a definitive performance" (ibid), contributing further to the illusion of authenticity. A bad performance becomes an unfaithful performance, one that does not respect or *understand* the original "objectified musical work-thing to which fidelity is owed" (ibid, 10, 12). Thus, "performance was regarded as a 'function of a text which it attempted to interpret'"(Dahlhaus cited in ibid, 12).

Taruskin's arguments illustrate the tensions that still exist in traditional Western art music between text and act, that can be transposed to the ones between composers and performers. With the reification of music as object, and the creation of what Lydia Goehr called the *work-concept* (to be discussed in chapter five), composers detach themselves from the works, but also from the people who perform them, and the people who listen (or dance) to them.

Nevertheless the practice of architecture shows inevitable links to activities other than composing drawings. Architects have to engage with clients, promoters and users as well as materials, construction techniques and technologies, sites, and many other factors that take them away from the 'drawing board' into the *world*. Understanding how architecture defines itself beyond the production of drawings, or the composition of formal elements, in its multiple cultural, social and political relations, could help to see composition beyond the narrow notion of organising notes or sounds into objects, while reframing the practice by intersecting it with the many sound art practices mentioned above.

Composition refers to a plan before the action, a programme. The composer, much like the architect, plans a particular *modulation* of space *used*, thus their main production is not an object but a situation in space. Furthermore, a broader notion of space, as the common ground between music and architecture, allows the development of an approach to composition that reconfigures music away from object, dispersed in multiple spatialities.

4. A space of multiple spatialities

In *Music, Sound and Space*, Georgina Born (2013) identifies the use of the term 'space' in relation to music, as often ambiguous and metaphorical. Nevertheless, one can identify

“three broad ways of conceptualising space in/and music: ... three distinct lineages of practising and cognising musical spatiality” (Born, 2013, 9) The first refers to the “pitch space”, a “dominant, formalist approach to musical spatiality, allied to score-based, visual and graphic representations and analyses of music, [that] limits itself to a concern with the internal operations of musical sound” (ibid). This includes time (duration, tempo, rhythm) as one of the spatial dimensions of the score, and subjugates all other dimensions like articulation, dynamics, timbre. The immersion in this space could be seen as the principle of the autonomous work, while also leading to Taruskin’s poietic fallacy.

The second lineage concerns the “practices and discourses of ‘spatialisation’ associated with multichannel techniques of studio recording and manipulation and loudspeaker projection as they developed in both popular musics and electronic, electroacoustic and computer art musics from the 1950s onwards” (ibid, 11). We could interpret a phenomenological dimension to this approach, the conception of a space that both our physical bodies and sound can inhabit. But the fact that there are no “score-based modes of analysis for these mainly non-notated musics” (ibid, 12), doesn’t mean that they cannot undertake a formalist construction, as we have seen with Stockhausen parametric approach: “As the serialist's objective is to apply the same means of structuring to all the different features of sound, these characteristics should be clearly isolated from each other and manipulated separately” (Harley, 1994, 154). Thus, “[l]ike ‘pitch space’ formalism, this second discourse of space in electroacoustic and computer music invokes notions of spatial and musical autonomy” (Born, 2013, 12).

But music involves a third, much broader and “anti-formalistic” conception of space. “Space in this third lineage moves out beyond the musical or sound object to encompass ‘exterior’ spatialities: the spatialities configured by the physical, technological and/or social dimensions of the performance event or sound work” (Born, 2013, 16). This includes soundscape composition, sound art and experimental music and brings to the fore a number of concerns that have been ignored (not absent) by the practices of Western art music. This conception can be divided into three main areas:

> First, those events and works that focus experimentally on the performance space or situation; second, those events and works that encompass the wider sounding environment or acoustic ecology (‘natural’, built, architectural or human), as well as those attentive to a specific site or place; and third, those events and works that by

> means of digital technologies such as mobile telephony, the internet, virtual environments, massive multiplayer game networks, GPS or ubiquitous computing technologies configure several simultaneous and shifting locations or virtual spatialities (ibid).

Understood as having emerged as a conscious concern between artists and theorists mainly in the last decades, this last lineage reflects a deeper understanding of space, one that includes its makers and users, their relations and movements in everyday lives. If sound has become a central material for composition, consequently so has space. "Being inventive in relation to space, site and movement has become integral to the creative imagination" (ibid, 17).

5. The Pyramid and the Labyrinth

Going back to Taruskin, music as text, to which performance is subjugated, ignores this last conception of space, placing the 'sacralized' work of art "above the human plane—and ourselves below" (Taruskin, 1995, 358). This notion finds a parallel in Bernard Tschumi's dematerialisation of architecture into its ontological form (Pyramid) and its sensual experience (Labyrinth). Borrowing these terms from an analysis of Georges Bataille by Denis Hollier (1992), Tschumi argues that "in contemporary urban society, any cause-and-effect relationship between form, use, function, and socioeconomic structure has become both impossible and obsolete" (Tschumi, 1996, 5). The Pyramid represents the ideal architectural conception, a perfect mental creation that "ensures the dominance of the idea over matter" (ibid, 38). This is architecture as text, as ideal. On the other hand, the Labyrinth is where we lose ourselves in search of the Pyramid. It symbolises the experience of space, where

> one can participate in and share the fundamentals of the Labyrinth, but one's perception is only part of the Labyrinth as it manifests itself. One can never see it in totality, nor can one express it. One is condemned to it and cannot go outside and see the whole.... the nature of the Labyrinth is such that it entertains dreams that include the dream of the Pyramid (ibid, 49).

There is a paradox between these two dimensions: they are "interdependent and mutually exclusive" (ibid, 48). For Tschumi the paradox of architecture lies in "the impossibility of questioning the nature of space and at the same time making or experiencing a real space."

> Indeed, *architecture constitutes the reality of experience while this reality gets in the way of the overall vision. Architecture constitutes the abstraction of absolute truth, while this very truth gets in the way of feeling.* We can not both experience and think that we experience…; the concept of space is not in space (ibid).

The idea that we can predict experience or determine behaviour is naive (Le Corbusier's *promenade* comes to mind again), as much as we cannot experience the totality of the space that conditions us. "The sensual architecture reality is not experienced as an abstract object already transformed by consciousness but as an immediate and concrete human activity—as a praxis, with all its subjectivity" (ibid, 50-51).

The analysis of architecture either as Pyramid or as Labyrinth is no different (ibid, 43-44). But the existence of this complementarity "raises questions about how such equations can go beyond the vicious circle of terms that speak only of themselves" (ibid, 44). Tschumi argues further that "a common accusation of analyses or even of works that concentrate on the specific nature of architecture is that they are 'parallel', that is, they fold and unfold in some Panglossian world where social and political forces are conveniently absent" (ibid). This could be a reason why architecture can be "the faithful production of dominant society", instead of a "catalyst for change" (ibid, 7). To clarify the analogy: while ignoring a broader conception of space, one that includes the 'exterior' spatialities mentioned by Born, and immersing in the 'autonomous space' of the Pyramid, the composer lets music be lost in the Labyrinth, subjugated to power structures independent from the artistic creation, becoming "an obscure artistic supplement or a cultural justification for financial manipulations" (ibid, 47). On the other hand, practices that acknowledge a broader conception of space emphasise experience and promote change by incorporating elements of their context, of everyday experience, of its social and political forces, mapping a part, if minimal and ephemeral, of the Labyrinth, and its many elusive pyramids.

6. Synthesis

> [C]onstellation, an astronomical term Adorno borrowed from Benjamin to signify a juxtaposed rather than integrated cluster of changing elements that resist reduction to a common denominator, essential core, or generative first principle (Jay, 1984, 14-15).

Sterken's view that the relations between music and architecture are generally analysed either through a rational or a phenomenological perspective, either through number or through space, reinforces Tschumi proposal of the paradox. Music can neither be reduced to its formalistic operations, nor to its sensuous experience, as its sounds emerge, always capable of generating something new: an unexpected meaning, a contradictory feeling, a different space. Thus the duality disintegrates into many small and incomplete maps of a constellation of possible spaces. The "post-formalist" musical space indicated by Born "is conceptualised therefore not in terms of the internal operations of musical form, nor in terms of the perception of evolving musical or sound objects, but as multiple and constellatory" (Born, 2013, 16), where number and space, pyramid and labyrinth, coexist and transform each other.

> Just as eroticism means a double pleasure that involves both mental constructs and sensuality, the resolution of the architectural paradox calls for architectural concepts and, at the same instant, the immediate experience of space (Tschumi, 1996, 71);
>
> [T]he solution of the paradox is the imaginary blending of the architectural rule and the experience of pleasure (ibid, 51).

Chapter 1 - Material

1. Ideas and things

The term material comes from the Latin term *materialis*, which is the adjective of *materia*—matter (noun). In English, material and matter can be synonymous, and both show a significant ambivalence of meaning. Material can mean "the matter of which a thing is or can be done", or it is "information or the ideas for use in creating a book or other work"[7]. Matter, in turn, can mean "physical substance in general, as distinct from mind and spirit" or "a subject or situation under consideration", "the substance or content of a text as distinct from its style or form", thus nothing physical after all. This duality between the *physical materials* (*physical things*) and the *abstract* or *intellectual materials* (*ideas*) is a central point in this chapter.

We generally identify architectural materials as physical matter (stone, wood, bricks) and musical materials as intellectual conceptions (pitches, melodies, harmonies), since they are not physically palpable. But this relation is not well grounded: architects also work with concepts and ideas, and sound is always also a physical phenomenon. The question here is how do these concepts materialise? What is the relation between the ideas and the physical materials?

> In many disciplines, ideas and things are placed in a hierarchy that either states that one determines the other or allows each to be considered separately. But how something is made informs what is made. In The Manhattan Transcripts Bernard Tschumi states: 'In architecture, concepts can either precede or follow projects or buildings. In other words, a theoretical concept may be either applied to a project, or derived from it' (Hill, 2003, 3).

In this chapter I will look into this duality of materials, how it has been considered in musical and architectural discourses, and how it compromises practice. While trying to find a common ground between architectural and musical materials, I will try to put into perspective traditional conceptions and show how an integrated approach to it was articulated in some of my work.

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[7] Oxford Dictionary of English online.

2. Architectural materials

> As a present object, architecture is a material reality available at a cognitive order and an aprioristic order (Rodrigues, 2002, 41).

Many definitions populate the history of architecture, some more inclined to theoretical and abstract considerations, others tending towards a more pragmatic approach to its concrete reality. Some focus on it as a useful object, some emphasise its aesthetic dimension, while others concentrate on its technologies or tectonics. Perhaps architecture can be defined by the multiple combinations of these and other views. However, the architectural work as *material presence*, a body between bodies, and thus occupying an analogous space to that occupied by the human body (Rodrigues, 2002, 40), seems to lay the foundations for its complex nature. If, today, new techniques and technologies, as well as theoretical discussions allow us to conceive much wider conceptions of architecture, the practice is still very much centred on the construction of *material bodies*. While acknowledging that architecture cannot be reduced to its materiality, we can recognise this dimension as the grounds for a consideration about its materials.

Architects develop works that are conditioned by many factors, of which materials play a central role. In the end of the design and construction process, buildings have a physical palpable existence, which is what we firstly perceive and identify as architecture. Thus we can generally accept that materials condition and qualify architecture's very existence. This has not been always the case in architectural practice and discourse. In fact, recent discussions have been reinforcing again the attention given to physical materials as a central preoccupation in architectural thinking and design, in what can be understood as a consequence of a phenomenological turn. It arises in reaction to the approach that has dominated architectural thought, and that gives an "over-emphasis on the intellectual and conceptual dimensions of architecture, further [contributing] to a disappearance of the physical, sensual and embodied essence of architecture" (Pallasmaa, 2006, 29). This approach concentrates on formal problems, establishing "the architect as a form giver" (Thomas, 2007, 2).

Architectural materials are of many kinds and forms, each better suited for specific situations, under considerations that can be practical (functional, economical), aesthetic, or even to serve conceptual or symbolic discourses. From raw materials (timber, stone, clay) to formed ones (a beam, stone cladding, bricks), materials seem to

be subject to processes that combine (compose) them in hierarchical structures or forms: timber becomes a frame that holds a roof; stone is made into tiles used for flooring, clay is turned into bricks that make walls, etc. But architects don't work with these materials, only representations of them: "the very method we use to develop architectural proposals—orthographic drawing—describes only form, and relegates material to the empty space between the lines" (Thomas, 2007, 2). The idea of the limitations of the use of drawing finds a strong parallel in musical notation, which I will develop in chapter three. For now, I want to stress how formal operations can lead to the use of architectural materials even independently of a consideration of their physicality. If materials always have a form, the latter can be conceived independently from the former, and thus the privileging of form can prevent materials from being "examined beyond its aesthetic or technological capacities to act as a servant to form" (ibid).

Shifting the focus from material as inert matter, "as that which is given form" (ibid, 3), towards "material as part of a network of forces and actions" (ibid, 5), could "open architectural discourse up to social and political questions of material practice, rather than simply providing us with some new form-making techniques which are inflected by their material realization." (ibid, 3).

3. Musical materials

In the twentieth century we saw an accelerating expansion of the materials used in music, and consequently of the approaches to music itself. From Russolo's *noise-sounds* to Varèse's *liberated sound*, from Xenakis' sound masses and Penderecki's *sonorism* to the spectralists' *timbral chords*, from *musique concrète* to soundscape composition, from Cage's everyday sounds to so many branches of experimental music, material expanded to encompass a great variety of what had been previously considered non-musical sounds. This relates to Makis Solomos' idea of a shift of paradigm *from music to sound*, where music focuses on sound as its central concern. Of course there are still musical trends today, where sound is taken as an 'inert material', formed by traditional notions of melody, harmony, rhythm and instrumentation (Solomos, 2013, INT, 2, 2), however, as we've seen in the introduction, the landscape is diversifying. In order to develop a discussion around musical materials, we should look at how they have been conceptualised since the last century.

3.1. The notion of musical material

Solomos proposes the architectural metaphor of a building to represent tonal music, where three different floors communicate with each other: material, function (language or syntax), and form (Solomos, 2013, V, 5.2, 1). Despite having some autonomy, each level is constrained. This constraint is a result of tonality's own effort to affirm itself (ibid, V, 1.1, 1), and that is the reason why musical material of the period when tonality is particularly stable (the classical period), is less rich than in previous ones. The notion of material itself is recent; it is a diffuse notion in musical history until the twentieth century, when, around the 1930s, it was made explicit, mainly by Adorno (ibid, V, 1.1, 6).

For Adorno, musical material is a cultural and historical product, not a natural one. He opposed views that saw tonality as having natural foundations due to the principle of resonance (ibid, V, 1.1, 4), which implied the "natural characteristics of tones for all periods" and "a universality of psychological responses to music" (Paddison, 1997, 67). Rather, "In dealing with the material the composer is dealing with historically sedimented conventions" (ibid, 93), as well as creating new interactions that will sediment in new materials. Thus, material changes over time, it evolves and expands. By recognising the historicity of material, tonality's building starts to degrade, as the focus concentrates on that one level.

Musical material in Adorno's view is

> what the composer controls and shapes, ranging from sounds (as pitches, timbres, durations, dynamics), through connections of any kind made between them (as melody, harmony, counterpoint, rhythm, texture), up to the most advanced means available for integrating them at the level of form (ibid, 151).

The complexity of musical materials, then, progresses from the most simple elements of *musical* sound, up to form itself, through compositional procedures, techniques and technologies (ibid, 151). It is important to note here the mention Adorno makes to sounds—as pitches, timbres, durations, etc., which brings out their pre-formed character as opposed to a natural origin: the notions of pitch and timbre are already conventions. In tracing back the development of Adorno's theory of musical material, Paddison (1997) equates it to Ernst Bloch's idea that music, and musical materials are "raw materials permeated by 'Spirit'":

> It is not a question of 'sound (*Ton*) as discussed by physics, as a natural material, but rather a case of music as the 'metaphysics' of sound. That is to say, in music 'sound' is more than simply 'what it is' (ibid, 76).

Sound, then, as being simply 'what it is', and thus "outside" music, constitutes the *stuff* that can be "permeated by Spirit". This "raw material", or *sound matter* (physical, acoustic), does not constitute the musical material, but a simple starting point that material transmutes (Solomos, V, 1.3, 4).

3.2. Orders of complexity

According to Solomos, the main characteristic of musical modernity is the refocusing on the level of material, which takes precedence over the other two levels, language and form. This is why we say the building of tonality collapsed (Solomos, V, 1.2, 2), making it difficult to distinguish material, form or language. In fact, in the debris of the collapsed structure, there is no reason to differentiate them anymore (ibid, 4).

For Adorno, material and form are indeed intimately related. If *sound matter* is not the artistic material, it is because it hasn't been formed yet. Musical materials, on the other hand, are socially predetermined, pre-formed. In fact, they can be formed independently from sound. "Meaning is already present in the pre-formed material, in the form of socially and historically mediated aesthetic norms and conventions" (Paddison, 1997, 150). Meaning then, is constructed through form: materials go through a formal, *rational* undertaking to become form, which in turn "can become material" (Adorno, 2002, 148), in a progressive complexity.

This progressive rationalisation that Adorno identifies, could explain the tendency of material to become more abstract, less tangible, less *material* (Solomos V, 1.3, 2-3). In Adorno's view, physical sound as "simply what it is", is not culturally formed, thus has no meaning and cannot constitute musical material. There is an increasing complexity in the treatment of materials to the level of form, but the starting point in a composition is always already a *complex form of material*. Thus, the rationalisation of material is the reason why *sound matter* isn't material, or why material isn't natural; it tends to be fully *composed* (ibid, 4).

This notion of musical material conforms to a hierarchical view, where progress tends towards a more complex state. We've seen this hierarchy when talking about

architecture earlier, and it is evident here too. For example: pitches form melodies that in turn form counterpoint, harmonies, texture, etc. This progression can extend to include procedures, technologies, even genres and styles (Paddison, 1997, 151). Melodies are composed of (formed by) pitches, and fugues are a combination of melodic, harmonic and technical material. As society progresses, the complexity of the materials progresses too: "[T]he actual musical material available to a composer at any particular historical moment is that at the most advanced stage of its development—that is, at the most extreme intersection of expressive needs and technical means" (ibid, 87), and not "the sum of all acoustical possibilities and associated compositional techniques to date" (ibid, 83).

In this hierarchical view, raw materials (physical, untouched) are given less importance, while a growing complexity moves up towards the top of the rank, to find intellectual, idealised materials. This hierarchy tends to bring out formal and conceptual materials as more important, or *meaningful*, and leaves behind a consideration of *sound matter*. Here the parallel with architecture is again useful—the composer, as the architect, is seen as a 'form giver' and materials tend to 'act as a servant to form'. Materials are not allowed to 'speak for themselves', since composing (form giving) is seen as the main tool to create meaning.

This hierarchy seems to have dominated theory in many disciplines in the West, as a problematisation of body and mind, expression and reason, or matter and form, with the latter traditionally favoured over the former. In music, this "tendency to privilege reason over the senses as a suppression of the body" (Bonds, 2014, 30) constitutes what Susan McClary considers a "conceptual barrier, grounded in the mind/body metaphysics that have dominated thought about music since the nineteenth century" (McClary, 1995, 92). This discussion is far-reaching and takes us beyond the scope of this research. But it is important here to understand how this barrier helped to reduce the scope of material, how it kept sound matter—and thus 'noise' or everyday sounds—out of the musical realm for so long. Paraphrasing Pallasmaa—an over-emphasis on the intellectual and conceptual dimensions of music, further contributes to a disappearance of music's physical, sensual and embodied essence[8].

[8] (Pallasmaa, 2006, 29). I understand essence here not as *the* essence of music, but as one of its many essential aspects.

5. The listening act

Once we bring back the body into the discussion of musical material, we start to move away from an idea of music as object, towards one of music as experience, where the body is implicated. This turn brings out the listening act as central in the making of music, and allows a change of perspective from the more abstract notion of material. For example, a distinction between non-musical, or everyday sounds (raw materials), and musical, or manipulated sounds (musical, formed materials), may be understood as centred on a reading of the material itself as objective, and not on the subjective listener (Dibben, 2001, 2003). The everyday and the musical "may be two kinds of listening which operate simultaneously but which the listener privileges in different ways according to his or her needs and preoccupations" (Dibben, 2001, 162). We listen to both the acoustic characteristics of sounds (matter), and their referential source attributes (form), when recognised[9]. This view maps the creation of meaning in a distributed landscape of relations between culture and personal histories and experiences, instead of in sound itself, or its idealised form.

> The question … of when and why listeners hear sounds in one way rather than another … is addressed through the notion of "affordance" (the way in which the meanings of things are a function of the mutuality of organisms and environments) and captures the way in which the meanings specified by sounds are always meanings for someone rather than being properties of an object (Dibben, 2003, 197).

Material then, affords meaning not (only) through its formal relations, but through its listening, by relating to the listener's previous experiences—his or her personal history, and present conditions, needs and concerns. This is a step away from Adorno's view of the sedimented meaning in material which could be seen as "an analytical convenience —an averaging out of interpretations of material arising from an assumed common cultural context" (ibid, 199). Meaning is not inherent in material, "It is at all times a function of the relationship between listener and material" (ibid, 2001, 186).

[9] Dibben shows that listening modes tend towards musical listening in a reduced way (autonomous, acousmatic) when the sources are not identified nor recognised.

Thus, an idealised conception of materials, one that privileges concepts, abstraction or a progressive rationalisation, is not hierarchically superior to a conception of material as sound matter, to sound as 'simply what it is', for both have, through the listening act, the same potential to affect and create meaning. Sound, as a physical phenomenon, relational and dynamic (cf. LaBelle, 2006), affects the listener even before any convention has been constructed.

6. Musical material as medium

By acknowledging that meaning is not inherent in material, we could argue that any *composition*, any organisation of sounds would be futile since it wouldn't be able to convey any predictable meaning, and thus even question the role of the composer. However, if material is not a container, it can be a medium, a mediator of sensations and ideas.

The concept of mediation is of central importance in Adorno's theory of musical materials: mediation is "the point of intersection between the individual and historic/ collective Subject" (Paddison, 1997, 115). Nevertheless, while he articulates this dialectic of the individual and the social on different levels, his concept of mediation is not clear and "remains highly elusive" (ibid, 146-8). Paddison suggests that it "converges with his concept of the dialectic of musical material through the concept of form" (ibid), where material's sedimented meaning arises from it being formed by composers and history. As pointed out earlier, this notion of material lies in a position that seems to claim meaning before perception, which accounts for, and depends on, knowledge or a language that needs to be learned. Learning this language has indeed been the task of many composers of Western art music, although with the collapse of the tonal building, the very possibility of a language was called into question (Solomos, VI, 3.4, 24).

Material can be understood as a means, and not an end in itself—not a container of meaning or a language that symbolises ideas but a medium that is but one of many agents in the production of meanings, integrated in a complex and distributed network of mediations. This idea conforms to more recent views of a music sociology that acknowledge that "there is no single privileged location of musical meaning, but that it may be distributed across and configured by the relations between its several mediations" (Born, 2005, 9, cf. Goehr, 2007, 278). Thus, the composer organises the possibilities for meaning to emerge by participating in that configuration.

Material then, is here understood not as an abstract operation over sound, perhaps not even sound itself, but *sound potential, sound affordance*—a complex relation between sound matter and its ability to mean and affect, not idealised, but concretised in listening. It is the point of intersection between the listener and the work, as it mediates meaning in a constellation of concrete experiences, intentions and readings, implications and potentialities, subjectivities and actualities.

7. Architectural material as musical material

> Sound and space are inextricably connected… This plays out in acoustical occurrence whereby sound sets into relief the properties of a given space, its materiality and characteristics, through reverberation and reflection, and, in turn, these characteristics affect the given sound and how it is heard (LaBelle, 2006, 123).

In this research, the approach towards material, informed by architecture, explores the materiality of sound as implicated in the materiality of physical objects, architectural elements, acoustic environments, and the body. Sound as a consequence, not only of actions, but of other agencies that are routed in the same elements that organise our body-space: Walls, floors, ceilings, their texture and porousness, their dimension and position, are all modifying agents of the sound that instruments produce within them. In fact, they are part of those instruments.

A simple model of acoustic instruments defines them as having two main components—a sound source and sound modifiers (Howard, 2009, 168), where the *output* sound is the one resulting when the *input* sound (produced in the source) passes through the modifier—a *system* of resonant chambers and materials that extend and modulate the sound. This model allows the extension of the circuit (input—system—output) to include a second system—the room where the instrument is being played. The output of the previous system becomes the input of the second one, and the new output is what we listen to in a concert situation. It is interesting to recall Schafer's remark about the "modern architect [who] is designing for the deaf" (1994, 222), for many times composers also ignore the sound of rooms when writing a score—the acoustic behaviour of a space is seen as something to adapt to in the performance, not an essential component to include in the composition. However, "[w]hen a musical space is considered to be an extension of musical instruments, ... it becomes a tool to be used by composers, musicians, and conductors" (Blesser, 2009, 7).

The musician or the artist is, in most cases, very limited when it comes to transforming performance spaces, but if we don't want to neglect an inevitable agent of the musical experience, it is important to find strategies through which to take advantage of architecture as an extended material. This can be one of the extended roles of the composer.

7.1. Loudspeakers

Before I move on to analyse how these ideas manifest in my portfolio, it is important to introduce a discussion about loudspeakers, as they appear to belong to an unstable ground of not quite being an instrument or a material, yet they are a sound-source sometimes with no apparent system, present in most of my works.

Electronic music and digital technologies have transformed the relation between instrument, body and sound production in several ways since they have (further) departed the body from the production of sound. In the last stage of digital sound production, the loudspeaker is the *anti-material* or the *pseudo-instrument*, as we hardly perceive the relation between its body (or our own) and the emitted sound. Of course this is not completely true, for we can recognise different acoustic signatures for different speakers[10]. In any case, the ideology of the *real sound* (or high-fidelity) implicit in the loudspeaker (mostly in commercial contexts, but also in many artistic ones) establishes it as an invisible or ignored mediator between sound and listener. By pretending it is not there, we are rejecting it as part of the mediation network. "[T]he impersonality of the speaker ends up negating the intention or message because we have no physical or emotional anchor with which to evaluate it" (Wright, 2007, 146). Once we accept its presence and engage with its physical body, we can start to use the speaker as a mediator of meaning, and thus, as a musical material.

> Redesigning and rearranging speaker components are the preliminary steps in the emancipation of the speaker. Freed from the restrictions of the cabinet, the speaker can become an integral and autonomous component of the installation or space, adopting a sound/ object personality and intensifying the overall experience. This new self, detached from conventional function, creates an

[10] and we accept and celebrate amplification as having a powerful impact on the body (cf. Prior, 2007, 128).

> unpredictable interplay or dialogue between itself and the participant (Wright, 2007, 147).

Hence the loudspeaker is a useful tool to start a dialogue between the musical materials, the audience and the space that contains them.

8. In practice - extended musical material

In light of all of the above, musical materials and architectural ones meet in their material presence, in their physical manifestation, and in their ability to affect. As sound implicates space, musical materials as rooted in sound matter are implicated in their architectural setting. Thus, architectural materials also *form* musical materials, or even *become* musical materials, as they are *what the composer controls and shapes*. This expands the possibilities of composing to encompass architecture itself.

All the works presented in the portfolio deal in some way or another with material as sound. In *Apartamento em Lisboa (Narrador Presente)* and *Travelogue #1* the materials are made of recordings of spaces and the subtleties of their aural architectures. The latter, emphasises the referential dimension of the material. In works of the *Unlikely Places* ensemble, live transmissions or recordings of soundwalks are the materials that become musical narratives, where their form is the form of the walks—conditioned by urban structures. In *Play* all these elements are used in a synthesis of music and architecture, where material extends beyond the resonances and reverberations of the space, to include the soundscape of its surroundings. In *A Pirâmide e o Labirinto* the materials produced during the residency period were turned into materials to play to, as scores or tape parts in an improvisation setting.

I will now focus on four works that expose this notion of extended material in their compositional process.

8.1. Music for Sax and Boxes

In *Music for Sax and Boxes*, specially constructed boxes become a hybrid between a loudspeaker and an instrument. They reproduce the sounds of the saxophone while transforming their spectral content. They are made of a specific material that filters the

sounds, giving them a very different colour from that of the live sound of the sax. Thus, they are modifiers—their reproduction of the sound is a transformation, even if that only becomes clear when there is an 'original' sound to compare with. The difference between their sound reproduction and production (transformation) becomes blurred because the sound emitted by the boxes is always a different one, with its own timbre.

The boxes are simple objects, all similar except for one attribute—their dimensions. Hence that perceivable physical attribute reveals itself responsible for creating acoustic differences (timbral) that are also perceivable. These objects and their resonant frequencies informed the musical material of the piece. A thorough analysis of the spectral characteristics of each box, provided the specific pitch content used in the score. The saxophonist plays those notes, establishing a harmonic context that is related to the boxes' materiality. As the sounds are played through the boxes, and with deviations in tone, the resonance phenomenon is revealed—the amplitude of the boxes' sound projection increases as the pitch meets their resonant frequencies.

Moreover, the acoustic behaviour of the boxes is not a simple one where specific pitches resonate and others simply don't. There is a small frequency band within which each box resonates and emits sound in different directions. Bending a pitch slightly might make it sound more through the corners of a box, than through the middle of a side surface. This is related to the behaviour of vibrating plates, and became an intentional gesture in the composition (the irregular line in the score).

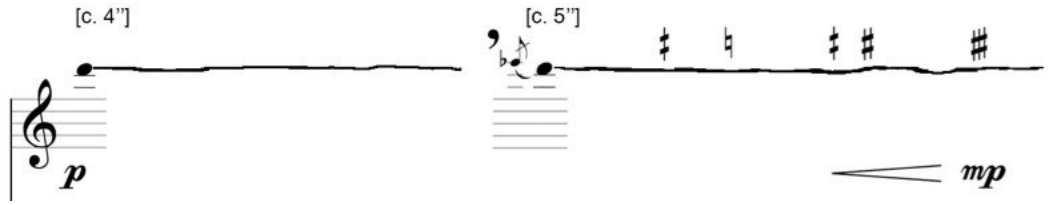

Fig. 2 - Excerpt of the score for Music for Sax and Boxes, showing the irregular line indicating pitch bending and microtones (page 2, second system).

This emphasises the relation between the materiality of the box and the sound it produces (its timbre and its directionality—its idiomatic qualities), but also with what is played by the performer. Thus, if on the one hand the boxes provide the musical material (they are used to compose the piece), they become musical material themselves (they are composed) for they are inseparable from what the performer is playing—they are implicated in the "pitch space". This is one way to link musical material to physical material, to make that connection explicit to the listeners, giving them the opportunity to witness and experience 'where the material comes from'.

Furthermore, the boxes' composed position in the performance space adds another layer to their function. They situate each of their different acoustic profiles in a different position in the space. The idea is to create a specific performance situation, different from the traditional *stage in front of audience* situation, or *loudspeakers surrounding audience*. This spatial distribution of timbre implies that the sound is affected not only by the boxes material characteristics, but also by the way they are distributed in space, for it creates specific spatial-sonic relations to the listener while also enhancing the specific architecture of the performance space: the boxes are thus also implicated in that space.

In *Music for Sax and Boxes,* the saxophone is extended in a diagonal across the room, both in a spatial and a sonic way. Sounds not only surround but cross the audience, emphasising that there are different perspectives in the perception of each listener—no sweet spot. Spatial localisation is implicated in the performance beyond the traditional spatialisation by composing the actual space. This is not quite a site-specific piece: instead of using the architecture of the space to compose, the design of the performance setting adapts to the site and implicates it in the work.

8.2. Inside Out (Situation #...)

This piece works with similar principles to those explored in *Music for Sax and Boxes*, but the space of the performance is also related to the structure of the piece. I followed the same strategy of using resonant objects, this time pipes. As resonators, pipes behave in a simpler way, allowing a rigorous prediction of the resonant frequencies. Hence they can be changed to meet a specific instruments' range, or adapt to a specific space.

In this piece the resonant frequencies again inform the musical material, but on the performative level, rather than the compositional. The pitches are indicated on the score not as a prescription of what to be played, but as indicative information—'if you play theses pitches, this or that pipe will resonate'. Thus the focus turns towards the choices and explorations of the performer. This exploration of the resonances is also implicated in the space. The pipes, as the boxes, are situated in a specific location, but the form of the piece is structured around that, as the performer plays the different sections facing different pairs of pipes. If the piece is played in a triangular room, it will have three pipes and three subsections, etc. (see instructions score).

Furthermore, as the performer moves and directs the sound to different parts of the space (of the audience), the sound will have a different relation to each listener. Thus not only the sound resonates 'here' or 'there', but the performer plays towards 'here' or 'there', increasing the plurality of timbral diversity through the spatialisation. As the sound varies from positioned, direct, or reflected, the architecture of the performance space becomes more embedded in the work as a material. The piece ends with a bass drone of three sine tones with the frequencies corresponding to the three main resonant modes of the room. Resonance here moves from inside the pipes, out into the room. The idea is to generate such a resonated vibration that elements of the room such as loose cables, lamps or window fixings, are turned into musical materials too, as they actually vibrate and produce their own noises.

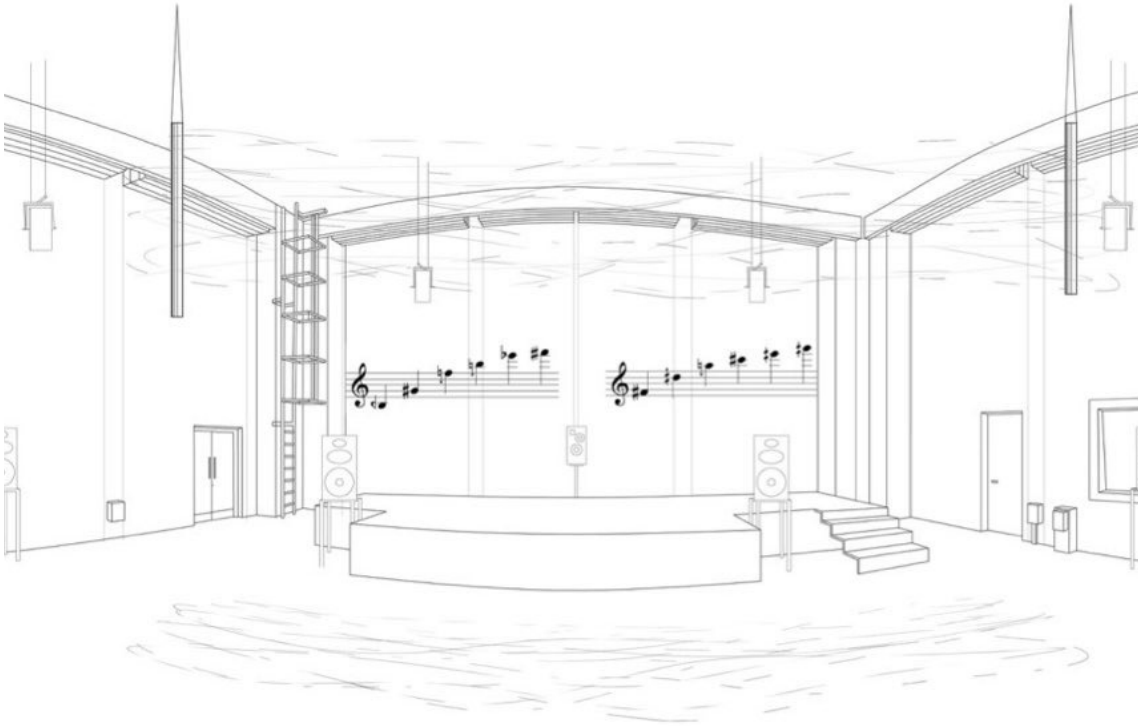

Fig. 3 - Excerpt of the score for Inside Out (Situation#2) - section 3a.

8.3. Apartamento em Lisboa (Narrador Presente)

This piece inverts the use of material, from the almost haptic view of the boxes and the pipes, to referential elements that suggests a perception of a remote materiality, a remote space. An apartment, unknown (yet located), serves as a laboratory for the exploration of space through sound. The listener builds up an image of the space through the various types of sounds—of the environment, of the internal spaces, of the movements and actions of a 'narrator' in that space, all things that together reveal the

personality of its aural architecture. The narrator becomes the listener who identifies the movements of a body exploring the several rooms in the apartment, and identifying different materials, textures, even the 'passive objects and spatial geometries' (Blesser, 2009, 17). Moreover, the sounds suggest the intimacy of a home and the domestic space of its everyday life (even the sounds of electromagnetic fields disclose the presence of the household appliances). "The home … expresses interiority by becoming an intimate reflection of life and its private rituals." (LaBelle, 2010, 50). Thus, musical materials are merged with architectural materials: the 'music' is composed from them, or they become music, while referring to things beyond themselves. And even if some moments tend towards abstraction and develop a more acousmatic approach, it becomes difficult throughout the piece to separate the sound from the *matter*, and from the references it brings about. It affords meaning while being 'simply what it is'.

8.4. Tłumaczenie

In an inverse sequence from that of the performance, the materials for this piece were defined from the last section towards the first. For the third section, the resonances of the space were used as the basis for the sound score. They were then analysed and their pitches used in the other two sections. The second section provided another kind of material: As the blue line crosses the different materials of the building, the performer is asked to interpret the architectural materials through a kind of haptic transference, where form, gesture and texture come to the foreground.

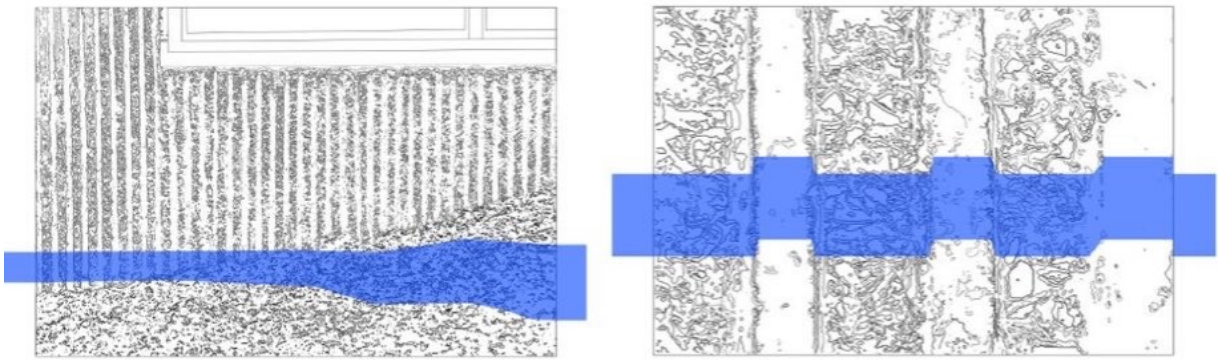

Fig. 4 - Excerpt of the score for Tłumaczenie (part II) showing the blue line, inspired by Edward Krasiński's work.

These elements are reflected back on the first section, which in turn can be used to inform or suggest the performers a vocabulary of possible materials to be used subsequently.

The first section is based on Penderecki's music, particularly his second string quartet (1968), for several reasons. One relevant to this chapter is that Penderecki's work is a landmark of what has been called *Sonoristic* music, where sound is treated almost as a plastic material, as a mass that is shaped, emphasising more sensorial qualities instead of the traditional compositional elements such as melody or harmony. In line with Solomos' view of the focusing of material towards sound, this becomes a fertile ground for a parallel between sound and architecture, one that creates an analogue relation between textures, shapes, gestures, instead of structural, formal and conceptual elements.

Chapter 2 - Site

1. Object and situation

> …'the experience of literalist [minimal] art is of an object *in a situation*—one that, virtually by definition, *includes the beholder*' (Fried 1968: 125), minimalism enters into a quintessentially theatrical practice antithetical to the values of an autonomous art" (Kaye, 2000, 3).

The concept of autonomy is part of along-standing debate around the idea that art can refer only to itself and be independent of external forces. It has been, if only briefly, touched in the previous chapter, when questioning the material's ability to "refer" beyond itself. From Kant to Adorno, autonomy becomes a central discussion in modern art and a focal point of contest in post-modernism. Although this debate in not resolved, as the actual concept of autonomy keeps being questioned, there is a growing acceptance and recognition that art is never independent of its context, of the circumstances that surround its production and reception. This does not necessarily mean that all art is heteronomous, certainly not intentionally as we can still find many artistic works that ignore their context or reject an explicit relation to it. Nevertheless the fact that we tend to classify art as either autonomous or heteronomous can reduce the debate to a simplified duality, again a set of binaries "falsely polarised" (Jackson, 2011). "An autonomous artwork is often considered bounded as opposed to the heteronomous artwork's porousness" (ibid). This opposition can assume a perspective in which we have to choose "between the aesthetic rigour and form of a great work and the social efficacy of a social work" (ibid). However, both elements of this opposition seem to escape these simplistic definitions: on one hand, an intentionally heteronomous artwork —one that claims social relevance or engagement—is always prone to becoming compromised by its heteronomous engagement (ibid); on the other hand, can we ever claim autonomy of any work? Is a work ever unrelated to its context?

In the period after the Second World War, for example, material autonomy, as part of the ideal of 'absolute music', was favoured by Western composers as a way to guarantee ethical autonomy. This was a reaction to "Eastern bloc regimes [that] denounced as "formalist" any art that was not socially engaged" (Bonds, 2014, 297). This 'formalism' nevertheless ended up serving Western ideologies of purity and individual freedom during the Cold War (ibid).

In this chapter I discuss the relation between music and site, and the extent to which the composer can incorporate ideas about site into the compositional process. Again, I will draw on architectural notions of site to investigate constructive relations with composition.

2. Architectural site

Architecture can be a privileged discipline for an inquiry into *site*, not only because buildings are always located in a specific place, but also "the work of physical design also necessarily depends on notional understandings about the relationships between a project and a locale" (Burns, 2005, viii). Such understandings affect the creative process from the start. If materiality can be said to be a main constituent of architecture, one that conditions and qualifies it, it is also integrated into a set of design choices; on the other hand, site is usually not chosen by the architect: it is a point of departure.

> A specific locale provides the material ground for action in design practice, and ideas about the site provide a theoretical background against which such actions are taken. Such received understandings of the subject—even if unnoticed, unexamined, or inarticulate—inevitably precede design action (ibid).

Only recently have these concerns become paramount in the start of the design process. The site was frequently seen as something the project has to adapt to, and not to adopt: it was "understood in a quantitative, 'functional' sense, with implications such as spatial distribution and dimensioning" (Norberg-Schulz, 1996, 415). This can be equated to Carol Burns' concept of the 'cleared site' which "is based on an assumption that the site as received is unoccupied, lacking any prior constructions and empty of content. It posits space as objective and "pure", a neutral mathematical object" (Burns, 1991, 149).

The cleared site conception is typical of modern architecture whose functionalist approach leaves out "the place as a concrete 'here' having its particular identity" (ibid). Even the names given to modern architecture -"'the International Style' or 'functional modernism' … betray a concern for universalizing issues unrelated—even opposed—to those arising from the specificity of a given place" (Burns, 1991, 148).

It is that specificity of *place* that becomes central to architectural theory and practice in certain trends of post-modernism that react against a "definition of architecture as a formal or stylistic manipulation", "as an object of contemplation", where

"form still follows form" (Tschumi, 1996, 117). "Place offers a way to resist the relativism in modern theories of history through the engagement of the body and its verification of the particular qualities of a site" (Nesbitt, 1996, 49). This change is inscribed in the phenomenological turn mentioned earlier, where architects move their concerns towards an understanding of the forces that compose the specific site in relation to the body, and away from functionalist or ideal conceptions of architecture (absolute, autonomous) that have excluded "the body and its experience from all discourse on the logic of form" (Tschumi, 1996, 117). And thus, "…foregrounding site as a subject of inquiry and a domain of action becomes part of a larger contemporary critique of the isolated, autonomous object in design" (Burns, 2005, xxv).

The architectural work, then, is not autonomous, but situated—it has a context. It relates to the site's materiality and experiential aspect, to its history, surroundings and social scope—its identity, its *place*. We can go further and say that work and site become blurred: "To attempt to detach the building from the site, in practice and in theory alike, is to deny that any work of architecture is a work of site, to suppress that the work is political, ideological, and temporal, and to forget that it is implicated in the history of architecture" (Burns, 1991, 165). The work is thus merged with the site, as a constituent of place. The making of place, becomes the task of the architect.

Finally, the idea that the work becomes the site, echoes notions of ecology where both interact and construct each other in a "relational condition": "Design does not simply impose on a place. Site and designer engage in dialogic interaction… Therefore we claim the site as a relational construct that acquires meaning and value through situational interaction and exchange" (Burns, 2005, xv).

3. Place and atmosphere

Theories of place in architecture, arising from phenomenological approaches to the discipline such as Christian Norberg-Schulz's, are concerned with "the 'concretization of existential space[11] through the making of *places*" (Nesbitt, 1996, 29). Beyond site, place is its qualitative totality, irreducible, a "'total' phenomenon". It is "made up of concrete things having material substance, shape, texture and colour. Together these things determine an 'environmental character'" (Norberg-Schulz, 1996, 414). It is this character that denotes "the general 'atmosphere' which is the most comprehensive property of any

[11] "'Concretize' here means to make the general 'visible' as a concrete, local situation." (Norberg-Schulz, 1996, 417).

place" (ibid, 418). Atmosphere is an impression, a mood, a feeling we experience when we are immersed in the environmental qualities of a place, in the presence of its character.

The notion of atmosphere has been developed, notably by Gernot Böhme. It occupies the centre of a new aesthetics, and it is an emblem of certain architects as it carries a set of values that evoke a certain way of being in the world. "The extraordinary advantage of this aesthetics of atmospheres is that it is able to connect to a large reservoir of everyday experiences" (Böhme, 2012, 11). For Böhme, on one hand, the "old aesthetics is essentially a judgmental aesthetics, that is, it is concerned not so much with experience ... as with judgments, discussion, conversation", and on the other hand, the new aesthetics of atmosphere "is concerned with the relation between environmental qualities and human states" (ibid, 1993, 114). Atmosphere is the "intermediate phenomenon" that happens in the relation between object and subject (ibid, 2012, 11), blurring the boundaries between them. It is "the common reality of the perceiver and the perceived" (ibid). What is relevant to the aesthetics of atmosphere are not the properties of things, but the "ways in which a thing goes out of itself and modifies the sphere of its presence" (ibid, 12). By doing this, things affect us by affecting the spaces (the places) we share with them.

If this idea is conceivable in architecture, it is much more so in music—"the fundamental atmospheric art" (ibid, 13). As noted in the previous chapter, the last century saw an expansion of musical material, but also what Böhme calls an enlargement of the essence of music—when its temporal conception was "relativised by the discovery of music as a spatial art" (ibid, 12). This brings out again the interdependency of music and space and opens the way to think about atmosphere in music. Musical space is not simply geometrical, it is also affective: if "to hear is to be outside oneself" (ibid, 17), as our bodily space expands through listening, it is affected, modified, "shaped and articulated by music" (ibid, 13).

To think about atmosphere is also to think about place—the environmental qualities of the site and how they affect us. Both architecture and music, as atmospheric arts, modify sites, modify places. Atmosphere as a property of place, is a common reality between architecture and music. But what then, is the *site* in music?

4. The place of music

In music, the problem of site is posed in a significantly different way from architecture. Does music have a site? What is the place of music? If each work of architecture can be understood in relation to a specific place, the relation between music and place takes multiple forms and perspectives.

Autonomous music has no place, it is universal and independent of local idiosyncrasies. This is the claim of Western art music of the so called "classical" tradition, that evolved into an ideal musical object separated "from its mundane embodiment or mediation: in performance, music notation or score." (Born, 2005, 9)[12]. It stands in opposition to a 'popular' art form, that presents different connections to specific places. In this opposition, it rejects its own locality, and the possibility of becoming embedded in the specificities of everyday life. It is not my intention do discuss the differences between these conventions, but to note that they account for different categories of place:

> To label music as 'classical' as opposed to 'popular' places music in a value system based on a geographical categorization. In conventional accounts classical music contributes to the development of a progressive, abstract western high culture; universal, self-justifying, ostensibly placeless. Popular music, in its appeal to everyday emotions and immediate circumstance, is by contrast bound to particularity; a 'merely local' form making no contribution to an autonomous realm of musical language (Leyshon, 1995, 425).

In an effort to expand a geographical work on music, Leyshon et al. analyse *the place of music*, beyond the idea of *venue*, suggesting different spatialities that are "formative of the sounding and resounding of music", and highlighting "the mutually generative relations of music and space. Space produces as space is produced" (ibid).

Thus, site can become a tool to overcome the binary 'classical' versus 'popular', through the construction of different and meaningful places, thus allowing, new and plural kinds of music to emerge. In a conception of music as experience and not as object, the musical event (performance or diffusion) is where the experience *takes place,* and the ideal, autonomous and self-contained object is replaced by a situated construction of meaning.

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[12] again referring to Lydia Goehr's *work-concept* (cf. Goehr, 2007). This will be discussed in chapter five.

As the work of architecture, the musical work interacts, merges with its site and becomes a constituent of place.

5. Musical venue as architectural site

As suggested in the previous chapter, the performance site can be seen as a musical instrument, since it works as a 'modifier' of sound. When this function is brought into the compositional process, site becomes material. But under a wider notion of architectural site, we can look at concert halls and other musical venues as imbued with character, identity, political and social contingencies. By ignoring these, many compositional processes bend towards the autonomous agenda, embracing the concept of the 'cleared site': "The cleared site conception, which is apparently nonpolitical and nonideological, implies that the mechanisms adapted by the planning disciplines are equally neutral in ideological terms, equally unengaged with issues of power" (Burns, 1991, 150). Nevertheless, "The apparent neutrality of the site—linked to the lack of comprehensive assessment—is a mask for issues of control" (ibid, 165).

Musical performance evolved side by side with concert hall design in a way that sometimes is difficult to tell which influenced which. It is interesting to note the convergence in uniformity between musical spaces and musical works, where both tend to stabilise in a fixed format, manifest in several typologies: the traditional classical concert halls that try to optimise a "naked" listening; other more contemporary rooms that try to simulate a free field acoustics—avoiding the condition of sound modifier as that is already conceived in the loudspeaker; or the extreme example of the rock/ pop concert, where the PA system flattens the modifying chamber into the proscenium *surface* (Prior, 2007, 128). In most cases, a main characteristic is pronounced: how performance spaces organise musical performance in a two-dimensional, musician-listener relationship. It is striking that where this is not so much the case—spatialised electroacoustic music concerts where sound sources surround the audience—there is usually an emphasis on virtual spatialities as opposed to the present experienced spaces of the room's architecture. Instrumental spatialised music is not the norm, as it usually faces the difficulty of dealing with the rigidities of the institutional establishments of performance spaces, but even this exception conforms many times to the autonomy paradigm, thus relating to the space only functionally, as is the case with Berio's *Formazioni*, or Xenakis' *Eonta*, where the design of the musicians' positions or movements is still limited to the stage.

Several authors have argued that the evolution of these spaces is more related to visual aspects of space, than to sound: Schafer says, "We are always at the edge of visual space... But we are always at the centre of auditory space… Visual awareness faces forward. Aural awareness is centred" (as cited in Mavash, 2007, 60). And thus, not only an understanding of space derived from "ocular culture" imposed itself on the design of the concert halls (Prior, 2007, 127), but also those same spaces helped to stabilise the practices of musical performance into a two-dimensional, stage-audience opposition. This was a "reversal of the medieval situation of musicians waiting on an audience" (Leyshon, 1995, 425), contributing to an "objectification of performance" (ibid, citing Durant), that differentiated professionals from amateurs, and producers from consumers. Moreover, "auditorium design eliminated variability in listening, giving the illusion of unmediated contact with the music through the performer" (ibid). Thus, the concert hall helped to conceive music as an object contained in a space, in a 'clear site'.

6. Site-specificity

… the site is a social product (Burns, 1991, 164).

Incorporating the site of performance as part of the compositional process, by reconfiguring its spatial structures, helps to change or question the social and political structures embedded in specific types of performance spaces. Most musicians are far away from the possibility of building new spaces for the performance of new works. Besides the examples mentioned in the introduction, where this was actually the case, the possibilities at hand to the worldly musician, involve either conventional performance spaces, where specific structures impose themselves on the production of the work, or unconventional spaces that establish new relations to the work, creating other *intensities of place,* by emphasising and transforming specific qualities of the event situation, or the environmental qualities of the space (atmosphere).

Site-specific art has become an important area of artistic practice and research, where ideas about site or place, its social and political forces, constitute the new artistic materials. Emerging with minimalist and land art in the late 1960s, it started as a way to force a reversal of the modernist paradigm, of the placeless, autonomous, self-referential objects (Kwon, 2004, 85), by "relocating meaning from within the art object to the contingencies of its context" (ibid, 86). Some authors emphasise the theatricality in site-

specific art (as Fried in 1967[13]), or even the performative qualities of its perception or reading, a "work against the stabilities of site and location" (Kaye, 2000, 3), as the object or event is "singularly *experienced* in the here-and-now through the bodily presence of each viewing subject, in a sensorial immediacy of spatial extension and temporal duration" (Kwon, 2004, 86).

Perhaps this could be seen as a discovery of sculpture as a temporal art, converging with music's spatial recognition mentioned by Böhme. Nevertheless, this endeavour of moving beyond the gallery space to the places of the everyday, is not so much paralleled in music as it resists to be influenced by the forces of its own circumstances.

It is true that many forms of sound-art are engaged with site, some are even site-specific, and many implicate music in its relation to context. And of course, some musics are also related to site in particular ways, but if we pose the problem from the compositional point of view, how can the site become an integral part of the composer's endeavour? Can the composer, like the site-specific artist move beyond the normative concert hall?

Like the gallery, "the concert hall still has currency both as a benchmark against which other listening environments must compare and as a social space" (Prior, 2007, 132). Moreover, the site of music is not just the venue of musical performance. Like the site of art, it encompasses "a relay of several interrelated but different spaces and economies, including the studio, gallery, museum, art criticism, art history, the art market, that together constitute a system of practices … open to social, economic and political pressures" (Kwon, 2004, 88).

To recognise non-conventional or everyday places as musical sites, is to diminish the conformity of institutional and commercial forces, while acknowledging an ever increasing varieties and possibilities of musical expressions. It is to

> decode and/or recode the institutional conventions so as to expose their hidden yet motivated operations—to reveal the ways in which institutions mold art's meaning to modulate its cultural and economic value, and to undercut the fallacy of art and its institutions' "autonomy" by making apparent imbricated relationship to the broader socioeconomic and political processes of the day (Kwon, 2004, 88).

[13] As indicated by Kaye (2000, 3).

In what can be called site-specific music works, the matters of place become integral to the composition process as well as the performance, distributing the work throughout the elements that compose and situate our everyday lives.

7. Soundscape

> Music is of two kinds: absolute and programmatic. In absolute music, composers fashion ideal soundscapes of the mind. Programmatic music is imitative of the environment… (Schafer, 1994, 103).

Despite this seemingly narrow and polarised view of music, Schafer, in a central chapter of his seminal book *The Soundscape: Our Sonic Environment and the Tuning of the World*, points out many relevant connections between music and our sonic environment. In his view, "absolute music is disengaged from the external environment … [and seems] to gain importance in direct ratio to man's disenchantment with the external soundscape" (ibid). For him, it was the concert hall that, while allowing for a concentrated listening that noise pollution from outside had forbidden, also generated a tradition of "imitating nature" through music. But the Industrial Revolution changed the soundscape completely, and the reflections of that in music, were felt both in that imitation process (Russolo's *Rumori* of modernity) and in technological developments (the invention of sound recoding devices). Schafer recognises a "blurring of the edges between music and environmental sounds" (ibid, 111) in the works of pioneers such as Russolo, Cage—when he "opened the doors of the concert hall to let the traffic noise mix with his own" (ibid)—and particularly Pierre Schaeffer and his colleagues who, with the invention of *musique concrète*, made it possible to "insert any sound from the environment into a composition with tape" (ibid). Music then, goes beyond the binary absolute-programmatic, for its relation with the environment becomes more than either abstract or evocative—it surpasses representation, symbolism or even metaphor to merge and *become* the environment.

Today we can expand the notion of soundscape to include a wide variety of concepts, practices and disciplines. From acoustic ecology, to soundscape composition, soundwalks, field recording, and so many other forms of phonography[14], the soundscape is not a stable concept, as it keeps being reassessed, but has become a field of inquiry

[14] understood here as "a broad range of sonic arts practices which take the phenomena of recording as their point of departure" (Prior, 2007, 131-2).

about our relation to the environment through listening. It is in this quality that it belongs to this chapter for it can constitute a methodology for the understanding of place.

From an architectural perspective, soundscape studies become tools that, more than expand simple acoustic analysis, allow a less 'ocular' reading of space. Of course this has to include natural and urban landscapes, as well as interior spaces, widening the scope of disciplines involved.

For the composer, the sounds of environments bring new and enhanced meaning potentials in their reference to everyday life. The many different approaches to recorded sound material only reveal the potentiality of this technology to reshape and question musical practices. From "composed versus natural structures" (Barret, 2007, 249), to acousmatic versus referential sounds, soundscape composition became a wide territory that encompasses a questioning of the possibility of autonomy (through reduced listening), and the enhancement of environmental listening and of the awareness of our role as sound-makers (Westerkamp in Barret, 2007, 249). Soundscape composition can be a practice that "enhances our understanding of the world, and its influence carries over into everyday perceptual habits" (Truax, 2000).

It is precisely for this reason that the notion of soundscape is of most relevance to this research, for it embraces fundamental questions of both music and architecture—material, form, meaning, autonomy, context, place, atmosphere, listening, etc.

Soundscape comes from the "discovery of the musicality of the world itself" (Böhme, 2012, 14), and that "music no longer needs to be man-made" (ibid, 16). By expanding their craft to include the sounds of the environment, composers are not only sharing their decision making with the 'exterior spatialities' enunciated by Born[15], but also contributing to the collective endeavour of other sound artists and ecologists, to fight against "an average practice of 'listening-away'", while developing the act of listening as "a manner of participating in the life of the world" (Böhme, 2012, 15).

[15] see the introduction, section 4. A space of multiple spatialities).

8. In practice - multiple sites

Music for boxes, and *Inside Out*, discussed in the previous chapter, are two examples of reconfigurations of the performance space that alter the traditional relations between stage and audience. This way, the focus turns to the relation between audience and sound and raises questions about the structures of conventional spaces.

On the other hand, *Apartamento em Lisboa (narrador presente)* and *Travelogue #1* deal with site in a completely different way. *Apartamento* is an exploration of an aural architecture that is linked to an unknown site, by emphasising the referential dimension of the sound. In a similar way, *Travelogue #1* concentrated on specific soundscapes and aural architectures, but that anyone can relate to—they are part of public or iconic spaces, with a public history. Again, acoustic profiles are used to compose ideas about presence and place, while questioning notions of identity and memory, documentation and fiction, representation and presentation. The piece can be criticised as being a form of sound tourism, but if tourism is an operation that reduces the identity of a place to its potential for exploitation, I argue that *Travelogue* resists that reduction by emphasising the acoustic properties of places as dense spatial and temporal concentrations of identity, while asking questions about the listening process itself: How different would the piece be if we didn't know which places we are listening to?

These works are electroacoustic fixed pieces, intended to be presented in auditoriums with four channel systems. The approach to site here is made not through reconfiguring or stressing the site of performance, but in a general way of inquiring about place. Moreover, the atmospheres of other places, contaminate the atmosphere of the listening space, the *listener's body expands* to a multiple affective space that merges remote places with present ones. Although I cannot avoid the possibility of these pieces suggesting a listening that is disengaged from the performance site, their attempt to stress the intensities of places might be a further contribution to create varied listening modes and 'participate in the life of the world'.

8.1. No Chords Attached

This piece tries to problematise the opposition between musical and everyday modes of listening, by integrating both in the same 'double performance' situation. The soundwalk brings into the concert hall the sounds of the local environment, around its physical location, contradicting its usual function of keeping them out. Through an interaction

between the soundscape and the piano, local, everyday sounds, happening live, become musical material. Furthermore, the urban configurations of the site impose themselves on the decisions of the soundwalkers, making an important contribution to the formal structure of the piece. Finally, the convergence of these sounds is also sent to the street, expanding the performance situation. In a mutual convolution, both sounds and performances move in and out, in a gesture that aims towards the deconstruction of the opposition between concert hall and outdoor everyday spaces. In this correlation between urban and musical form, everyday and musical material, this piece equates site as a dominant element of the composition.

8.2. Come across

To consider this work as a piece of music can be problematic. Nevertheless, we might argue that this *audio-visual performative work* not only demands a 'concert hall type listening', but also uses compositional strategies that implicate time and space. It can, therefore, be seen as belonging to—or even substantiating—an expanded territory of compositional practice through architecture.

As with *No chords*, this piece explores the everyday sounds of a place around or close to the performance venue. This time, there is a stronger emphasis on the structure of the (three) soundwalks, as they intersect or diverge, revealing contrasted or lagged soundscapes. It is more an exploration of a place, focused on the correlation between its sonic qualities and occurrences, and its urban layout.

8.3. A Pirâmide e o Labirinto

The project developed in Brazil was a complex endeavour that addressed many different aspects of sound art, and will be further discussed in the next chapters. Here I will examine how the topic of site was addressed.

What was intended to be a site-specific sound art installation, ended up being a group of experiments and explorations in sound and architecture, around two buildings —the CCSP and the MAC[16]— that concluded as a site-specific musical event.

[16] first, São Paulo's Cultural Centre (CCSP), where the residency took place, and second the Contemporary Art Museum (MAC), that housed the final presentation. See the portfolio section *Further info* for a full description of the project.

The residency period in the CCSP became a generative platform where a group composed of myself and five local artists and architects discussed and experimented different ways of understanding what was *the sound of that architecture*, and how that could be useful in the creation of an artistic work. We started testing a few ideas, recording sounds of the building in fixed positions or through soundwalks, and using speakers in different locations. It was soon clear that our approach needed to change from an object oriented one towards *interventions*. This meant not so much 'exhibiting' created sounds on loudspeakers to passive listeners, but engaging with them as also sound-makers. The site is made not only of its building, an open and fluid space, but of its users that transform the space into a highly characterised place, charged with social intensities. The CCSP building is a symbol of Brazil's post-revolution cultural freedom, and is a truly public and community space used by hundreds of people everyday for multiple, varied and unpredicted purposes. It is, like the Labyrinth, constantly being redefined, absorbing and transforming external forces into its own fluid constitution. Its intense qualities of place, made by the people who lived and shaped the space, were determinant to establish our activities.

The several interventions we did in the CCSP became a process of knowing and engaging with the place, and of expanding the understanding of this architecture. It was at the end of the process that we started to explore the relation between the CCSP building and the Contemporary Art Museum (MAC). This museum belongs to the University of São Paulo. It has a very large and important collection of modern and contemporary art that had just been moved to this bigger, and newly refurbished building designed by famous modernist Oscar Niemeyer. The two buildings are connected by a ten minutes drive on one of the main and busiest roads in the city. This route became important to our work, as it concentrated a very strong sense of both a link and separation.

The two buildings contrast in many aspects, most significantly in their use and ability to invite people. The MAC is a *white cube* type of gallery, with a very heavy institutional aura that constrains its use to an unengaged visit of artworks. Not only does the actual space foist a certain autonomy on the exposed works, revoking any possible relations to the everyday, but it also forges its own architectural idealised autonomy (like the Pyramid), by clearly defining its boundaries with the surroundings, and contrasting its spatial, clean and white qualities from the 'impurities' of lived spaces. In a typical modernist fashion, this museum perpetuates problematic power structures: like the

concert hall and other “signature spaces”, its walls “are social regulators, as much mental as physical, subscribing to the rhetoric of inclusion. But paradoxically they announce that the arts aren’t for everybody” (Brian O’Doherty in Tipton, 2005, 6). This quality became paramount particularly because of the confrontation with the CCSP, which constituted a total opposite, and for that reason was always full of people. The MAC was always empty, with very few visitors each day, lost in the immensity of that monolith.

Fig. 5 - São Paulo’s Cultural Centre - East entrance.

Fig. 6 - São Paulo’s Cultural Centre - roof terrace used by visitors.

After implementing some of the same strategies used in the CCSP to understand and engage with the space of the MAC, it became clear that what we needed to do was to break that rigidity somehow, to question that site by confronting it with the other, bring the Labyrinth to the Pyramid.

Fig. 7 - Contemporary Art Museum of the University of São Paulo - view from the bridge over the *Avenida 23 de Maio*.

Fig. 8 - Contemporary Art Museum of the University of São Paulo - the empty, white space of the interior (mezzanine).

8.4. Play

As was the case in *A Pirâmide e o Labirinto* and in *No Chords*, *Play* integrates site in all the perspectives discussed above: in reconfiguring an everyday space as a musical venue, working on the history and identity of the place, and incorporating its aural architecture and its surrounding soundscape. It is a truly site-specific work in the sense that it is about the site, and to be experienced on site.

The initial approach was to think about the squash court both in a functional way and in a more abstract way. This meant analysing its form, its visual and acoustic properties, and how its function structures the use of the space. At the same time, we began looking at its wider context, its integration in the urban landscape, its association with the University, and its history since its construction, implicating a whole set of complex concerns.

The exploration of the site was an intrinsic part of the actual performance. This was more explicit in the use of Alvin Lucier's piece *Vespers* (1968) as a structural element in the piece's form. *Vespers* is essentially an exploration of space, through listening to the returning echoes of the emitted clicks, that carry "information as to the shape, size, and substance of that environment and the objects in it" (Lucier, 2005, 304). On the other hand, Lucier's *I´m sitting in a room*, became a methodology for bringing out —more than an acoustic profile—a sonic identity of the space, immersing the audience in a shared atmosphere.

Krasiński's line was transposed here as a way of visually connecting the several layers of the site. From the idea of a continuous extension, the line was first introduced in the entrance, guiding the audience through the main PEC building to the squash annex.


Fig. 9 and 10 - The line indicating the way to the performance space, along the corridors of the Physical Education Centre.

Then, it revealed itself on stage, where it delineates the different game areas, but was soon extended to the backstage, and out to the external spaces to meet the brass ensemble playing on the bandstand.

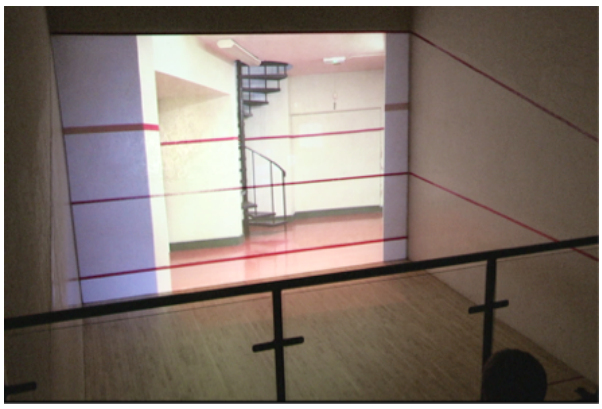
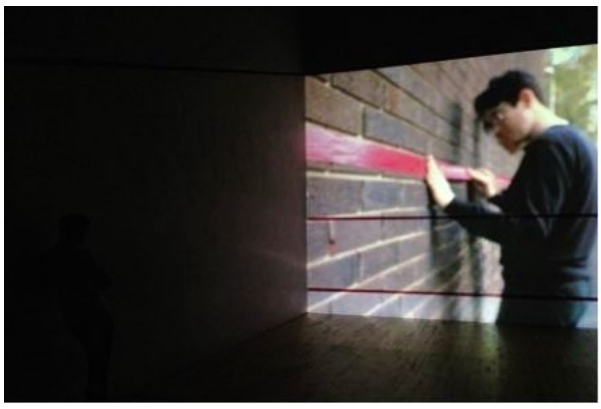

Fig. 11 and 12 - Projected images of the 'backstage' and outdoors showing the line in two different layers.

It crossed and thus exposed the space of performance, the informal space of its infrastructures (backstage), and the everyday spaces of the gym's corridors, the street and the park. As a result, it reconfigured and linked the different types of spaces, but also different temporalities, as it guided the people in the audience, through film projections, into the history of the building in which they found themselves.

The site was thus explored and its multiple layers disclosed, in an attempt to enhance and intensify the feeling of sharing a place. The audience became part of the

place, as they shared the experience of this peculiar event that added one more, if thin, layer to its history and meaning.

8.5. Tłumaczenie

Site in this piece, is not lived or experienced in the performance. The performers of the Royal String Quartet did in fact visit (and rehearsed in) the Stranmillis School's music department building, but that is not a requirement to perform the piece. The notion of site here differs from the other pieces, and was worked as an exercise of semantics. Perhaps with some similarity to *Travelogue #1*, it refers to a remote place in the perspective of enhancing the listening experience. The building in this site is a significant piece of architecture, a product of modernist ideology that so clearly expresses formal autonomy. At the same time, that same autonomy is put into perspective by its beautiful integration in the landscape. The building was selected for those qualities, but also because it is located in Belfast. By using it as a theme, source and tool for the composition, the piece engages myself, the performers and the audience in its context. It was important for me since the beginning of the process to find strategies of establishing a 'meeting point' for myself and the performers, and the fact that we are all foreigners to Belfast, but happen to spend time there during the same temporal window, seemed an interesting point of departure. Thus the building becomes a symbolic place of encounter as well as the foundation of the piece. In possible future performances by other quartets, the piece will evoke this moment in this site, expanding the semantic reach of its sounds.

Fig. 13 - Stranmillis University College's Music Department.

Chapter 3 - Drawing

1. Artefact and instrument

Drawing, like material or site, encompasses a very wide range of concepts and ideas, as well as disciplines and traditions. It has been, under many different forms, a part of our culture since the beginning, and used, in different ways, as a tool to understand the world. It is both an instrument and a document of knowledge, a method and a source, a process and an object.

> [Drawing] is slippery and irresolute in its fluid status as performative act *and* idea; as sign, and symbol *and* signifier; as conceptual diagram as well as medium *and* process *and* technique. With many many uses, manifestations and application" (Petherbridge, 2008, 27).

As an artefact, it concentrates experience and knowledge in material form. "Materially constituted, drawing is the phenomenal representation of a conceptual practice" (Robbins, 1994, 8). It functions both as a kind of collective memory or a deposit of information and ideas, and as an emanation of that knowledge, capable of changing its surrounding reality. It can be both an historical and an art object, with its own cultural and aesthetic value. But perhaps more significant than an object, drawing is also an action—it constitutes an act, a process, a means: "the act of drawing remains a primordial and fundamental means to translate, document, record and analyse the worlds we inhabit" (Taylor, 2008, 9). Translating, documenting or analysing are all drawing processes that convert and create concepts or ideas in the visual image on paper. Through drawing we separate our mind from these mental images, and visualise them *outside*, enabling us to engage our body (our hand) in a material relation with them.

> When sketching an imagined space, or an object being designed, the hand is in a direct and delicate collaboration and interplay with mental imagery. The image arises simultaneously with an internal mental image and the sketch mediated by the hand. It is impossible to know which appeared first, the line on the paper or the thought, or a consciousness of an intention (Pallasmaa, 2009, 91).

This dialogue of mind and paper though, is one of many dialogues that drawing generates. Another dialogue happens between the one who draws and the thing drawn

—an idea, an object, the world. Drawing can be threefold in that relation: as a learning method, in the observation and analysis of existing realities; as an experimental method, in the exploration of possible realities; and as a descriptive tool, in the representation of intended realities. Moreover, its capacity to represent ideas and realities is also its capacity to communicate them, and it is this ability to create dialogue between people that makes drawing, beyond a cultural object, a social instrument. From this perspective, it becomes most relevant to this research for drawing can constitute a tool to reconfigure the relations between the different actors of music creation.

Once again, here we can detect the forces of modernism unbalancing a duality: drawing as object over drawing as process, or drawing as artefact over instrument. It becomes an object of mystification and empowerment for the architect or musician, emphasising what it represents as the essence of the discipline, while hiding what it excludes. The idea becomes the art, and the phenomena its mere subordinate. But it is in its own powers as a dialogic process to regain balance and even deconstruct the opposition: "If drawing teaches artists how to look, then its everyday practice is an affirmation of the importance of outer as well as inner vision: the perceptual and the conceptual. This constitutes a new formulation of a very traditional duality" (Petherbridge, 2008, 32).

Thus drawing is neither only idea nor act, artefact or process, but always their relation, always a dialogue: "Drawing as idea and as act, embodies within itself the relation between society and culture, … realization and imagination, … object and subject" (Robbins, 1994, 8).

Drawing in architecture, unlike in music, is embedded in many different stages of the design process, and in many different forms. Although the relation between drawing and architecture might seem very different than that between notation and music, the confrontation between both practices shows striking analogies that suggest common grounds of inquiry. By analysing how drawing shapes and is shaped by architecture, its cultural forces and social dynamics, we can reassess the way music notation has been embedded in the compositional process, and perhaps contribute to a reconfiguration of that process, by exploring a wider field for notation as a dialogical force.

2. Architectural drawing

Today, architectural drawing has many different forms and functions. From the rough and freehand sketch, to more rigorous and formal drawings, it works as an "agenda and a mnemonic, a form of dialogue as well as a visual guideline", while providing "a common mode of discourse with which to deal with the many, varied and complex aspects brought to an architectural project by the many different actors who are a part of any architectural making" (Robbins, 1994, 3-4). In this process, it helps to define the role and function of architects, the object of their work, and their position in a wider social context. "Overall, the act of drawing, as well as the drawing itself, embody both the cultural practice of the architect and the social constitution of that practice" (Robbins, 1994, 35).

Drawing can be understood as one of the factors behind the historical separation between architect and builder. Advances in drawing around the Renaissance allowed architects to expand it beyond the mere expression of measure (ibid, 18), and to use it to as "a medium of representation to which both architects and laypersons could respond" (ibid). This allowed architects to distance themselves from the site, establishing a new conceptual basis for the discipline[17]. It is the recognition of drawing as a central critical instrument in architectural creation and production that transforms the architect from being a craftsperson into an artist (ibid, 10), while redirecting his/ her activity towards a more abstract and less material endeavour. The architect does not so much connect the design with the construction process, but rather turns to architecture as an art of form and ideas. Nevertheless, "an emphasis in conceptual drawing can result in the devalorization of craft and of the more material and mundane side of architectural practice and thought" (ibid, 30).

This emancipation of drawing contributed to the division of labour that composed the network of actors in architectural production. In this division, the status of the architect is also defined by the status of the drawing as a central piece of the project. Even different types of drawing define different positions in the hierarchy of architectural practice, where the more conceptual and abstract drawings of the first stage of development—the idea—are made by the chief architects, at the top of the labour rank, while the 'development' and particularly the 'working drawings', closer to the building process, are made by other, less empowered designers, or in some cases

[17] this can be argued to have started in the fifteenth century (cf. Robbins, 1994, 17-18).

even the builders themselves[18]. Thus, the farther away from the material production of architecture, the more powerful the actor, whose drawings provide authorship, proof of intellectual property, and are the basis of a contract that protects the legal rights over the *work*. It is this authorship that allows architects to exercise their power, while absent, on site, as the "drawing provides a disembodied but authoritative architectural presence" (Robbins, 1994, 36). Thus, architects are usually more empowered than the other actors of the construction process through the use of drawing as both a conceptual authority and a legal contract: "It is both the instrument of cultural command, through which architects as subjective creators and conceptual makers produce their designs, and the instrument of social power, through which they direct the translation of that conceptual production into material production" (Robbins, 1994, 48).

The emphasis on the cultural dimension of drawing over the social dimension, could contribute to a certain kind of autonomy, a withdrawal from a broader discussion of the role of architecture in society. This process is part of what Robbins has called the 'essentialization' of drawing—when drawing becomes essential in architectural practice and thought: "by essentializing drawing, architects have shifted the discourse about the built environment to issues that drawing can and does address best; i.e., formal, aesthetic, and cultural issues." (ibid, 49). In this contribution to "architecture's own ideological mystification … the drawing hides its own historical specificity and the social construction of its 'essential' nature and place in architectural practice" (ibid, 47). It hides its own limitations, and claims itself as the work of architecture, while forgetting or neglecting the building, its production and its use by a complex network of different actors.

It is this network of actors that can perhaps constitute the foundation of a dialogical practice in drawing. The drawing not seen as a claim for authorship and authority, but as the heuristic process of inquiring, experimenting and communicating; of exposing thought processes, exploring new territories and exercising dialogues as both an object and a process, a percept and a concept, a cultural artefact and a social instrument.

> The drawing allows the architect to compose a design, to orchestrate it, and to conduct the many players who will realize it. But like any good conductor, the architect must balance between the cultural and

[18] when this is the case, builders usually have to submit their design of construction details to the architect's approval.

> the social control that drawing gives and the need to be receptive to the many and often discordant voices that go into the making of architecture. In the final analysis this demands not only control but restraint, and the ability not only to command but to be commanded (Robbins, 1994, 300).

To concentrate on dialogue, could perhaps mean to shift communication away from the conventional drawings (like orthogonal projections), towards more expansive and experimental forms, that are able to deconstruct hierarchies, and generate different and always changing configurations. Because "drawing conventions limit ideas of space", "architecture will never move beyond the Renaissance world view, unless it challenges representation" (Peter Eisenman cited in Nesbit, 1996, 65). An alternative, proposed by Jonathan Hill

> would initiate a threefold investigation of the architectural drawing. First, to consider how the drawing and architecture are similar and different; second, to develop new ways of visualising the qualities of architecture excluded from the drawing; and third, if these cannot be drawn, to find other ways to describe and discuss them" (Hill, 1998, 34).

3. Musical drawings

Although most of what has been said above, can be transposed to music, we should differentiate architectural drawing from musical notation[19], in order to frame their analogies. Musical notation is generally associated with a formalised system of symbols that allow communication between those who can interpret them (Bent, 2015). It works to some level as a visual analogue of musical sound through transposing acoustic and temporal elements into the spatial extension of the paper. It is because of that ambivalence of symbolic and graphic (analogue) elements that it can be said to have many aspects similar to both writing and drawing. Thus I refer to notation here in its wide reach of different forms, graphic or symbolic, drawing or writing.

As discussed in the introduction, the separation between composer and performer can also be traced back to the development of the musical score. From rough sketches to increasingly symbolic systems, notation began as a way to record music. But once it finds itself in written or drawn form, the dialogic process between eye and hand,

[19] By musical notation I am referring here generally to its written or drawn form, and not to what can be called 'oral notations' (cf. Bent, 2015).

or mind and paper begins. Notation becomes a tool to observe, analyse, question and disseminate. In this process, the score distances itself from the performance and develops its own autonomy as a practice (the mystified composition) and as an object (the work[20]). It is not my purpose to dwell here on the history of musical notation, however it is useful to understand how notation is deeply embodied in what we consider compositional practice to be. Just as the role of the architect has been established from the autonomous drawings, so has the composer's art been outlined in the score, itself a product of wider phenomena in society, such as the development of literacy.

3.1. Musical literacy, preliteracy and postliteracy

Western musical literacy is believed to have began in the Roman church. The first examples of notated music we find in Europe are not only sacred and liturgical, but also vocal and monophonic (Taruskin, 2010-I, 1), despite this not being at all representative of the general practice at the time. This means that Western musical literacy started with the writing of one very specific type of music, embedded in a very specific institutional power. In other cultures, notations developed other forms and uses as a result of the different social and cultural contexts (Bent, 2015). Moreover, literacy was not a natural process that emerged from necessity: "Nobody thought of [music] then as an event worth recording, and that is because this innovation—momentous though it may appear in retrospect—was the entirely fortuitous by-product of political and military circumstances"[21] (Taruskin, 2010-I, 1). Thus, this music was not selected for its inherent quality, but for extra-musical reasons. And although these documents are an indisputable contribution to the development of Western music in making it what it is today, they are also the only ones, affecting our understanding of what music was and became, by neglecting all other practices that kept being practiced in parallel to musical literacy. Written notation, as a phenomenon of literate social classes (Bent, 2015), eclipses preliterate musics and the actors involved in their production. Thus, music literacy is at the same time a powerful creative tool, and a tool for the creation of power: it allows the development and dissemination of more abstract and elaborate ideas, while also establishing a permanence through the score, forging the *cannons* as crystallised works from non-musical values, and creating authority and exclusion. The score, as a

[20] The idea of the musical work will be developed in the last chapter.

[21] Taruskin refers to the migration of the jurisdictional centre of the church during the eighth and ninth centuries where the repertory had to be unified, fixed and moved.

product of literacy, can represent only the music it also helped to create. Thus it has limited access to the possibilities that have been explored, for example, in electronic music and other postliterate musical cultures.

3.2. Postliterate musics

The emergence of electronic music is, according to Taruskin, the harbinger of a postliterate age (cf. Taruskin 2010-V, 52). By not using a score, it allowed the manipulation of sounds beyond the possibilities of its representation system. Taruskin draws the notion of postliterate music around the many musics produced without the use of a score. Many different practices keep emerging, reconfiguring the landscape of music creation, while undermining the score as its core. The resistance of literate culture to accept postliterate practices (often deemed *illiterate*) could be embedded in the capacity of the latter to dismantle the structural forces of the former, for example, by replacing the hermetic scores with more approachable recorded material, or even determined harmonic content with unwritable (uncontrollable) noise. But in fact postliterate culture is a product of the literate society, and both have been forming an important dialogue—if sometimes mutually exclusionist—that has been helping to shake rigid practices. Written contemporary music has been influenced by nonliterate musics from other cultures, and by electronic and popular musics, which themselves have been drawing influence on the literate tradition. Perhaps we can conceive postliteracy as including literacy, not replacing it, but absorbing it as part of a whole, for the annihilation of literacy could imply a deeper transformation of our society:

> The end of the literate tradition will require the end of all its social uses, and of all social relations based on literacy. Such a society is beyond present imagining (Taruskin, 2010-V, 210).

4. Redefining composition through the score

Postliterate musical culture can then provide the possibility of cultural and social reconfigurations, questioning traditions and exploring new territories beyond the traditional score. A first new social configuration in music was found in electroacoustic practices where the elimination of the score was related to the elimination of the performer, creating yet another type of autonomy, and even an “utopian individualism” (Taruskin, 2010-V, 210). On another level, certain types of collective ‘free’ improvisation, dispense with the score, in an opposite gesture of eliminating the

composer—or absorbing the composer's role in the performance (as real time composition), while focusing on *sociality itself* as their main musical material.

Both these examples can present problems to a traditional definition of the composer's practice: If the first, by encouraging an "asociality" (ibid), could fall victim of an anti-sociality (as the lack of audience might demonstrate), reinforcing the isolation of the composer in the autonomous ivory tower; the second renders the authoritative composer simply unnecessary for its self-sufficient configuration, in spite of failing so many times to achieve its democratic or anarchist promise.

What, then, is the role of the composer, in a postmodernist, postliterate age, if the figure of the composer was created and developed around the score? One answer lies in converging once more—as in preliterate times—composer and performer, which can be seen not only in the improviser, but also in the increasing number of composers who perform live electronics side by side with other performers. Another answer could lie in the score itself—not in the perpetuation of the institutionalised notation system, but in its subversion, through the continuous renovation and pluralisation of its landscape. By reconfiguring the score as medium, the composer can explore different modes and socialities of music making, instead of succumbing to specific and imposed structures, inherited from non-musical factors, perhaps forgotten, perhaps even ideologically charged.

5. Drawing the score

Much has been written about open or graphic scores. Since the end of the Second World War, these scores have been emerging in very different formats, proposing different conceptions of music, of performance, or of listening, many of them borrowed from developments in the visual arts. Some can be seen as extensions of the strict, finite closed notation, as attempts to overcome their inadequacy, and their overwhelming influence on performing practice (Grella-Możejko, 2007, 451). Others as further opening up different possibilities in the distribution of the creative process and authorship. In these more 'indeterminate notations',

> …one finds that activities which were once viewed as precompositional and outside the realm of structure are now being integrated directly into a composition's framework. The very concept of musical notation has been extended, then, to include not only the symbolic representation of form, but also the delineation of all of the

> compositional methodology from which such a form issues. More and more the composer finds himself facing the problem of notating the activities of composition, rather than any specific sonic result (Grella-Możejko, 2007, 459).

Here, drawing as *notating the mind's activity* (Tschumi, 2014, 6) infiltrates the score, undermining the symbolic content that hides the actual process.

Many composers have used drawing (sketches) as a way of developing musical ideas, and in some cases those drawings have been made public, and even fetishised. Graphical methods employed by Xenakis, for example, became his trademark as a composer. "Drawing was primarily a tool to fix his ideas, enabling a constant feedback between the hand and the ear" (Sterken, 2007, 28). His specific explorations with graphics allowed him to develop novel musical territories. And although his approach is "no more than a generalization of the traditional musical notation system: vertical axis represents pitch, while the horizontal axis represents the flow of time" (ibid, 29), he nevertheless "engendered a major conceptual step" (ibid)—by drawing lines on graph paper, he was able to work beyond the discrete intervals of the temperate scale creating his now iconic glissandi. Furthermore, his work shows how a graphical approach to composition, inherited from architectural thinking, "engenders a global conception of the musical form" (ibid)[22].

Xenakis would then translate these drawings into traditional notation, which involved some further decision making and symbolic specification. He wouldn't use his sketches as final scores—in fact, he openly opposed the 'intuitionists' or "'graphists', who exalt the graphic symbol above the sound of the music and make a kind of fetish of it." (Xenakis, as cited in Kanach, 2010, 105). This not only shows his authorial grip on his work[23], but also perhaps a poor understanding of what was then still a recent form in development. Yet, can we deny that his drawings engage and provoke a deep sonic imaginary, as much as, for example, Earle Brown's or Cornelius Cardew's scores?

> The synesthesia inherent to graphic gestures made while searching for new sounds (in contrast to the mere analytical approach of

[22] which relates to the possibility of the synchronic experience, mentioned in the introduction.

[23] He argued "that the right of any such performances be duly reverted, at least partially, to the performers, who, in essence, 'author' them more or less freely." Despite being a provocation at the time, today we might not see any problem with that.

> traditional notation) certainly played a role in liberating Xenakis' musical imagination" (Kanach, 2010, 113).

If he used drawings as a method of liberating his imagination, why not share them with the performers who actually play his music?

Architectural 'working' drawings, destined to be used by builders, are in some sense still graphically close to the free sketches that originated them, but they need to work as a contract, conveying both technical and legal information, and therefore are forced to a rigid format. The plan, the section and the elevation, convey important information for the builder and the lawyer, but are not the best way to trigger the imagination on the experience of a space. The traditional musical notation system can be paralleled. If composers, like Xenakis, start their work with sketches, the transcription into standard notation can aggressively break the link with the original ideas. In this translation into a potentially alien, adverse, and perhaps even unnecessary representational system, the performer is left with a lesser byproduct. This is why so many performers insist on seeing the composer's sketches, as they allow them to

> "*see* or, at least, we have the impression that we are seeing the thoughts of the composer at the stage of the working process. … Furthermore, this graphic visualisation is very often the origin of the piece. … This yields a completely different kind of information for the performer that you could not get out of the printed version of the final score (pianist Paulo de Assis as cited by Douglas, 2014, 207-8).

To open the score to the rich processes of the free, non symbolic drawing, is to diminish the semantic communication and invest on the visual (cf. Hanoch-Roe, 2003, 154), expanding the possibilities of the score as medium, and consequently, of the relations between composer and performer. This could be done through Hill's method proposed above: by analysing what in the score is similar and different from the music, what it *excludes,* by developing new ways of visualising those excluded qualities, and to find ways to describe those that drawing cannot access.

The performer, then, has a different relation with the ideas materialised in the drawing. The score is not just interpreted but perceived as an object that *suggests* and *affects*, and thus the performers' actions are guided by their own *reading*[24] in a dialogue with the score, while the sonic imaginary is created in that triangle between composer,

[24] The notion of the *reader* will be developed in chapter five.

score and performer. The fact that the score can have an aesthetic value in itself, could be seen not so much as a fetishisation, but as the composer's way of giving the performers who will *experience* it, "a meaningful place in the construction of the work. Composers who work with such notation, where the distinction between symbol and drawing are blurred, hope that it may excite the performer's imagination" (Hanoch-Roe, 2003, 154).

6. Dialogue between composers and performers

Thus, many new types of scores explore different forms of authorship and sharing of the creation process between composers and performers. There is nevertheless a tendency to distribute these types in a linear configuration between the 'totally strict' and the 'totally indeterminate', creating a simple scale of degrees of determinacy that situates the composers as closer to one extreme or the other. Inevitably this narrow conception tends towards problematic views of ideological stands in the composer's practice: the composer is either a 'genius' and the performers are his/her 'slaves'[25], or he/she ceases to exist altogether, absorbed or dismissed by the performers. This type of discourse also tends to reduce the performer to a generalised idea, neglecting him/her as an active individual participant of the musical creation. Some performers like to (or even only) improvise, while others don't (can't or even dislike). Sometimes the composer is confronted with performers who impose their will, in a clear determination of hierarchical superiority; other times, the composer is asked by performers to write them a piece, in fully strict notation, because that is what they know and love. Thus, not only the variety of composers should be producing different types of scores, but also these scores should reflect the variety of performers. Working with only one type of score could mean generalising an ideal type of performer (professional? virtuoso? white? male?). Composers can explore through the score different modes of engaging with and relating to different performers, with an almost performer-specific score, a more personalised relation. Of course this is easier when working with a specific performer, not so much when working for a generic performer, with a score that will be published for *general use.* Nevertheless, the score and its plural variations, can be a platform to expose and question the *generalisation of the user* (to be discussed in chapter five), and a site to create new configurations outside the hierarchical scale of closed-open, mapping one more constellation of possibilities instead of a linear connection between binaries.

[25] As Cage would say (cf. Taruskin, 2010-V, 68).

7. In practice - drawing differences

7.1. The rules of Play

The scores written for the brass ensemble in *Play* were conceived in a way as to suggest a parallel to the squash playing. The performers are players as well, and, although there is a *theatrical* dimension to this piece, it is only asked of them that they *play* their instrument as they normally do. The score consists of a set of short 'games' with different rules, some based on ideas derived from squash, but also evoking the impact sound of the ball against the wall or the racquet, and the long resonance of that particular space. Most of the brass players were not improvisors, but the strategies designed in the score created the space to experiment, share decisions, and react to the others, engaging them in a playful game where there are no winners or losers.

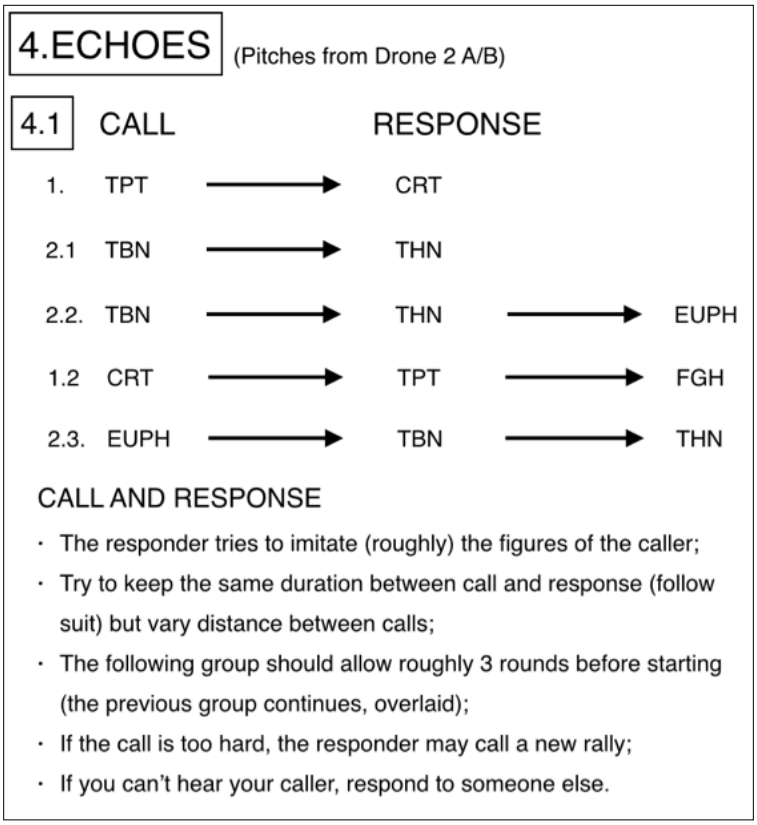

Fig. 14 - Excerpt of the score for *Play*, (part 3).

7.2. Scoring space

The score for *Inside Out (Situation #...)* is a non-linear graphic score. As suggested by Hanoch-Roe, the breaking of the temporal linearity of the score can be done by giving the performer freedom of choice:

> The choice of movement ruptures the linearity of the score inherent in the performance of a musical composition up to that time, and resembles a silent reading of a score in which the reader may stop, turn back, return and do as he pleases. In this, the process of performance becomes similar to that of a movement within a structural space, where the observer chooses his way about it (Hanoch-Roe, 2003, 148).

Although Hanoch-Roe's notion of the user of architecture as *observer* can be seen as limited and inadequate in her article, the metaphor is strong. In *Inside Out*, the performer is given a space to choose, to search, to perform.

The score consists of a representation of the performance space from the point of view of the performer, whose position is enhanced by the fisheye perspective of the drawings. It is a site-specific score. Nevertheless, it is more than a representation or an indication of that space, it operates a metaphor for an *open space of performative exploration*, in which the performer, more than choosing a route, may *dwell*.

The drawings also indicate the position of the tubes and their resonant pitches. Thus, instead of indicating what to play, they indicate what resonates, therefore suggesting an interaction between the performer and the tubes. The performer does not read written instructions, but performs gestures as a consequence of his/her own choices in the exploration of that space. The score becomes an improvisatory device, or stimulus. The performer can improvise freely if he/she wishes, but knows that when playing those specific pitches, they will resonate strongly in specific locations.

The choice of line drawings created with computer assisted design (CAD) software, relates to the wish to remove any personal expressivity of the hand of the composer. The CAD lines become less expressive, and the focus turns to what they represent and what they omit. The difference between the real space of the performance and the represented space is enhanced by the rigidity of the inexpressive lines, that do not represent the irregular textures, the variable lights and shadows, the moving bodies

of the audience. In this tension between the represented space and the presented space, the subtracted elements also gain focus, while the drawing asks to be completed.

Moreover, a third layer of information is added to the drawings, not to complete them, but to further the plot for improvisation. While the representation of the space and of the tubes should respond to certain specificities described in the piece's instructions, this layer can vary in a wide range of forms, but generally consists of an *alien* graphic element that suggests a particular operation or atmosphere. This should vary according to the specific site, situation and performer[26]. In the example shown below (figure 14), the image was progressively multiplied and overlaid to create a denser game of lines and movement. This element also works as a performer-specific layer, that tries to respond to each performers' different preferences and habits of improvisation. I believe this score is not for improvisors only, rich as it is in performative material. Non improvisors too might find interest in exploring this space.

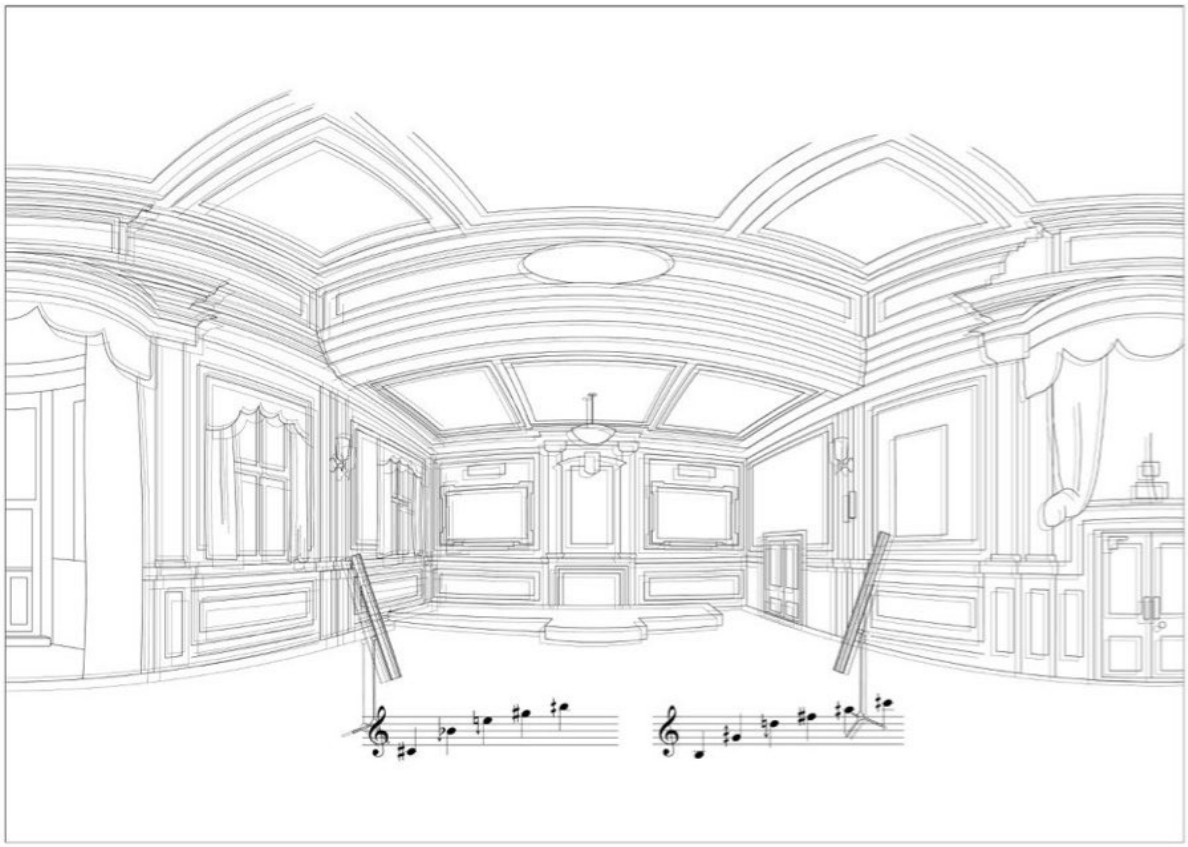

Fig. 15 - Fourth page of the score for *Inside Out (Situation#3)*, performed by Franziska Schroeder at Deptford Town Hall, Goldsmiths University London, October 2013.

[26] The examples in the portfolio show different realisations.

7.3. Mapping encounters

In *Come Across*, as the three soundwalks are drawn on the map, the spatial reference of sound is taken further. The soundwalks are not only spatialised by distributing the sound files through the speakers, but by conferring them other spatialities through the map: the streets are narrow or wide, long or short; we pass through a square, or an alley; we turn a corner, go up a staircase; we come across each other. The map brings a spatial correspondence to the temporal dimension of the sound, measured in paces on the streets. In this work, the performers are also listeners, carefully drawing each route with lines and notes on the map. They try to recall the details of their walk through the memories that are triggered by the sounds. As the map gets filled with lines and comments, with the traces of the lived experience of those spaces, it becomes a kind of *score in the making*, a visual register of the listening process. The map is a score for the audience, who confronts it with the sounds, not interpreting signs, but enhancing the experience.

Fig. 16 - View of *Come Across'* presentation at Sonorities 2013 - drawing on the map.

7.4. Translating architecture, translating subjectivity

In *Tłumaczenie* (*Translation* in Polish), three different types of score were explored, each corresponding to a materialisation of different notions of translation. One of the main exercises in this piece was to understand how architecture can be translated into music. This contrasts with the whole methodology of this research, which is not based on translating one discipline to the other, but on confronting and comparing. But for that

very reason, this approach should not be left out, for it shows that any attempt to translate is as arbitrary as the compositional act. What do we translate? Form? Spatial structures into temporal ones? Personal subjective experience?

These scores do not themselves translate, but create a space of inquiry where the different subjective approaches (the performers', the composer's and the listeners') are exposed and dialogue with each other. What we hear is not unfrozen architecture[27], but a combination of elements of evocation, representation, interpretation, expression.

The first section uses a more traditional score, where nevertheless graphic elements extend the notation symbols suggesting a more flexible reading of forms and textures. The Royal String Quartet's familiarity with this kind of repertory was used as a bridge to engage with the next, more open sections.

The second, was created from drawings that represent particular views of the building, in a sequence of eight images that get gradually closer to it. If the beginning of the sequence describes more formal aspects, by the end, the views get so close to the building materials, that the drawings lose reference to form and reveal texture. Moreover, Krasiński's blue line is used to create a visual path that guides the reading of the score in a linear way, flattening the perspective of the drawings. The formal elements of the sound thus, are created not directly by the form of the building, but by its relation with the selected points of view. The line simulates an interaction with the perspective, suggesting different possibilities of interpretation that the performer will have to decide. For example, a horizontal line represented in perspective will be oblique in the flat surface of the paper.

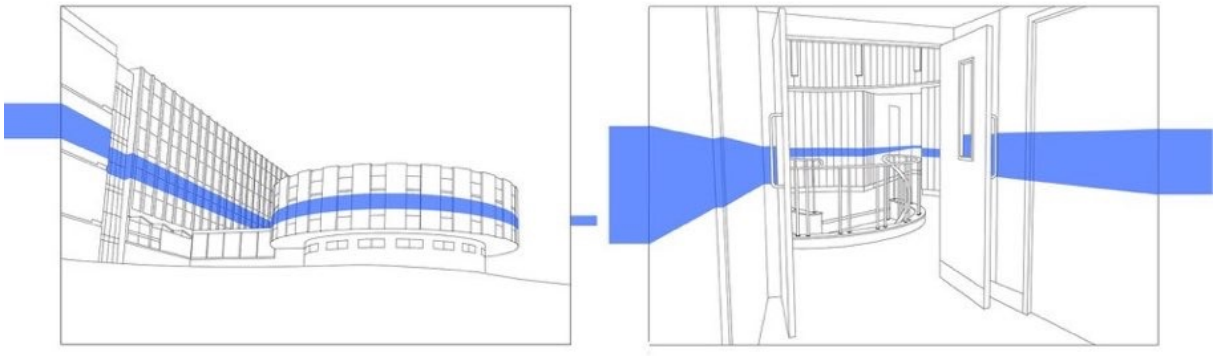

Fig. 17 - Examples from the score for *Tłumaczenie* (part II), showing different distortions created by perspective projections of the blue line.

[27] after the famous quote by Goethe "I call architecture frozen music" (Goethe, 1852, 282).

Finally, in the last section, the score transposes the visual drawing to work on the level of the listening[28]. By changing the medium, this *sound-score* breaks more deeply with traditional notation, and explores how the performers translate those sounds into their instruments. The score is as much a work in itself as the drawings or any score would be, it could be fetishised and be presented as an electroacoustic piece, but that is not the intention or the point. It is intended to be used to expose the different ways the performers listen, what they choose to listen to, to memorise and to reveal. Using sound as a score raises important questions about the traditional process of mediating musical ideas through visual means. Electroacoustic technologies today allow us to reimagine this medium in the audio domain. Just like the preliterate oral traditions used to transmit music from generation to generation through the voice or the instrument, we can now explore this type of transmission, but in a medium that can reproduce much more than just melodies, rhythms, or text. By concentrating on a more *sonoristic* approach to sound, these 'postliterate scores' ask for a deeper and more personal 'reading'—a listening—that, through the filter of each performer's memory and decisions, will reinvent these sounds, not possible to be fully reproduced by their instruments. The performer's reinvention is thus part of a dialogue with the composer through the score that distributes the creation of the work more evenly between its actors.

[28] accepting Hill's third proposal of transcending the drawing (see end of section 2 of this chapter).

Chapter 4 - Programme

1. Plan and realisation

The notion of programme might seem disparate when it comes to establishing a parallel between music and architecture. It suggests different meanings or processes, but a confrontation might help us review even further traditional conceptions of compositional practice.

A common feature between architectural programme and musical programme is its temporal relation to the work. A programme is something made ahead, in the beginning of a process, something that *plans future events*[29], or organises future activities. It is a projection of a particular dimension of what will happen, that might be reflected or not in the final realisation. A programme is a *framework*, it establishes an orientation. It promotes an organisation and optimisation of action, while identifying conditions. But it can also be an anti-creative force by defining limits and constraints. It asks 'what is the object or problem of the work?' and 'how to solve it?', or, in a more general view, it can establish *what the work is about.*

Programming as a project management instrument with scientific contours was developed particularly since the Second World War and during the Cold War as a way to accelerate technological progress and optimise resources in a context of fierce competition. The development of specialised methodologies alongside computer technologies opened a new discipline of efficiency. But the specific context in which these methodologies were developed asked for functional models or systems, in a clear prioritising of economic concerns. The expansion to different areas would become problematic for imposing an extreme functionalist approach to the way things work, while neglecting the cultural and social aspects of production.

This process is clear in late modernist architecture, in the development of its own discipline of programming. In music though, programme has other meanings and implications, as it is debatable what the function or the object of music is. In this chapter I will discuss and compare architectural and musical programme, and analyse how some problematics of architectural programme can become useful in rethinking compositional practice.

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[29] Oxford Dictionary of English online.

2. Architectural programme

If drawing is the base of the architect's activity and production—it constitutes the core of the architectural project—programme situates itself on a previous level. Both drawing and programme can be considered *projects* in themselves, in the sense that they project information into the future, but the programme works as a kind of *framework* that precedes and structures the development of the project. It often constitutes a distinct phase, and can be realised by different actors such as the client or a consultant. Its specialised character confers its position as a precursor of the design, defining "the scope of the project, and the criteria for a successful solution" (Cherry, 1999, 3). Programming starts with the development of lists, charts, and diagrams that try to identify and integrate the client's needs, wishes and budget. This leads to a synthesis of information in the form of "statements that summarise the problem to be solved by design" (ibid). We can thus distinguish two stages in the projects: the programme as an identification of a problem, and the design as a process that tries to solve it. The programme can be said to be related to quantitative concerns, establishing *performance specifications*—what needs to be achieved (cf. ibid, 10), while the design finds possible solutions that can embody different qualitative approaches. But the interaction between these two stages can be problematic. Some authors suggest that the programme "shouldn't anticipate what a project looks like or what it should be made of, [but] describe the desired performance and leave to the designer the development of forms to accommodate those performances" (ibid, 11). Nevertheless, this is sometimes not the case. For example, the public image or even the function of a building can be charged with political implications that motivate promoters and investors, introducing qualitative aspects into the programme. On the other hand, the actual specifications of the programme can limit and compromise the design beyond the architect's power.

Moreover, the reverse problem is also raised—should the architect interfere with the creation of the programme? Again, opinions diverge. Some believe that architects should be equipped with the tools and knowledge to formulate a programme, and thus offer a complete service from the beginning to the end of the project, as normally happens with small scale projects (cf. Cherry, 1999, 12). But this could also generate a conflict of interests as the architects define the problems they themselves have to solve. Another view states that the programme is a starting point that should not be questioned, but fulfilled, and fiddling with it is even not very creative—it presupposes

that the excellence of the way things work is the architect's responsibility (Graça Dias, 2006, 56). According to this view, the task of the architect lies after the programme, in an eventual reinterpretation or reinvention of the *typology.* Thus, the architect's critical view should aim at the *type*, and not the programme—at what solves the problem, and not what defines it.

The crystallisation of typologies can be attributed to modernist agendas, where functional models prevailed. The failure of many urban projects of the 1960s to respond to the needs of growing populations triggered suspicion and discussion about the benefits of these models (cf. Cherry, 1999, 7). New programmatic models started to introduce information collected from the populations for which the projects would be destined, integrating social variables into the equation. This movement is of course linked to the emergence of postmodernism, where the recognition of the modernist de-humanisation of architecture constituted one of the key motivations for a phenomenological approach to design. A building or a city must not only be functional, it must respond to a more complex set of needs—it is not only used, it is lived.

This perspective increased the complexity of the programme that soon would reach a point of no resolution—how to deal with ever changing populations, urban contexts, political and economic landscapes? Most of the spaces we use today were created from programmatic premises that are very different from their current use (Cannavò, 2006, 20). Thus, one way out would be to address the factors that contribute to making a project inflexible and protracted: on one hand there is an external condition —the slowness of the bureaucratic processes; and on the other hand, an intrinsic condition—the architect's difficulty to let go of the univocal character of space's formal foreshadowing (ibid).

Tschumi takes the problem to a different extent—from inflexibility to disjunction: "programs are by definition unstable. … programs have long ceased to be determinate, since they change all the time—while the building is designed, during its construction, and, of course, after completion" (Tschumi, 1996, 20). As a consequence, there is "no necessary causal relationship between function and subsequent form, or between a given type and a given use" (ibid, 115). Tschumi's radical perspective, apparently leading to a dead end, was nevertheless very important in raising awareness and discussions about how programmes are created, by whom, and how they can embody ideological agendas in the determination or control of social behaviour.

> Historical analysis has generally supported the view that the role of the architect is to project on the ground the images of social institutions, translating the economic or political structure of society into buildings or groups of buildings. Hence architecture was, first and foremost, the adaptation of space to the existing socioeconomic structure. It would serve the powers in place, and, even in the case of more socially oriented policies, its programs would reflect the prevalent views of the existing political framework (Tschumi, 1996, 5).

Hence his question: "How could architects avoid seeing architecture and planning as the faithful product of dominant society, viewing their craft, on the contrary, as a catalyst for change?" (ibid, 7). Tschumi's conclusion some years later was that "Architecture and its spaces do not change society, but through architecture and the understanding of its effect, we can accelerate processes of change under way" (ibid, 15). He would then propose some strategies for the 'deconstruction' of programmes by "showing that the program could challenge the very ideology it implied" (ibid, 199). This can be seen not quite as fiddling with the programme, but as subverting it, creating contradictions in the programme itself, that will parallel the contradictions in the real use of spaces. Thus, the programme becomes a theme—an investigation into the disjunction between architecture and its use, its plan and its realisation, between its idealisation and its experience.

3. Musical programme

The notion of programme in music is not as straight forward. If in architecture the programme is concerned with a future *use*, in music, *use* is an evasive concept, and *function* a problematic one, which leaves programme in a contentious position of assuming what music *is for*. The problem of *use* will be addressed in the next chapter. Here I will discuss the idea of musical programme, as a projection of control over what music *is about*.

3.1. Programme music

> Properly speaking, … programme music is music with a programme (Scruton, 2015).

The term was coined by Liszt in 1855, and refers to music of a narrative or descriptive kind, or even "all music that attempts to represent extra-musical concepts without resort

to sung words" (Scruton, 2015). The concept came from some of Berlioz works, and his idea that the "distribution of the programme to the audience at concerts … is indispensable for a complete understanding of the dramatic outline of the work" (cited in Tucker, 2015). There are several implications in this idea, the most relevant, perhaps, being that music is not able to fully convey the composer's intended message. This evokes Taruskin's idea of the poietic fallacy where the composer's intention is considered more important than the actual experience of the work. But the definition is not so narrow:

> The term 'programme music' came to be applied not only to music with a story but also to music designed to represent a character (Strauss's *Don Juan* and *Don Quixote*) or to describe a scene or phenomenon (Debussy's *La mer*). What is common to all these is the attempt to 'represent' objects in music (Scruton, 2015).

Through the programme as a "preface" to the music, "the composer intends to guard the listener against a wrong poetical interpretation" (Liszt cited in Scruton, 2015)—the composer's *intended* interpretation being the 'right' one to understand the objects represented. Here we can draw a parallel to Tschumi, by acknowledging that any cause-and-effect relation between programme and musical content is obsolete, or in fact, a fallacy. We could only say that the interpretation is *wrong*, if we believed the work has no value outside the composer's intended meaning. If, as discussed earlier, meaning is constructed in the listening, then the relation between the intended, *projected* image of the composer, and the experience of the work, is close to arbitrary. It is exactly for that reason that the programme needed to be known in advance—to establish an artificial relation between unrelated ideas and percepts.

Programme music became a widespread idea in the nineteenth century, and a strong contestant to absolute music where

> the 'specifically musical composer',… places value only on 'using material'... a 'formalist', a 'mere musician', who is 'capable of nothing better or cleverer than to use, propagate, arrange, and occasionally develop that which has already been achieved by others.' The composer of program music, by contrast, is a 'tone-poet' who draws on ever-new sources of inspiration (Bonds, 2014, 210, citing Liszt).

The extra-musical references or ideas were understood by the composer of programme music as a way to guide the listener "to a state of transcendence" (Bonds, 2014, 214),

that the self-contained, absolute music could not. Nevertheless we could argue that the opposition between programme music and absolute music did not solve the problem of autonomy, as both tended to work on a level detached from the conditions of their own production and presentation. A programme, as a work of literary fiction, can in fact become a device to bring the attention away from what the music is really about—be it its performance, its experience, its complex social arrangements, or even how it reflects and affects the tangible world.

3.2. Soundscape's programme

It is not surprising that Murray Schafer is considered one among a few contemporary revivalists of programme music (Scruton, 2015 and Tucker, 2015), as his approach to soundscape as a composer reflected back on his instrumental work. But to consider soundscape composition as programme music is not accurate. In fact, the disputed balance and ambiguous position it retains between an acousmatic and a more representational approach to sound (cf. Drever, 2002) is still in debate[30]. It does, however, often present a narrative approach that could be described (and sometimes is) in some kind of programme notes. But a main difference lies in the fact that soundscape compositions use recordings as their main materials to represent or refer to the world, while programme music used traditional musical techniques and devices to conduct an indirect or symbolic representation of things, "by suggesting [their] emotional reality" (Scruton, 2015). If the former relies on the listener's "recognizability of the source material" and "knowledge of the environmental and psychological context" to "complete the network of meaning ascribed to the music" (Truax, 2000), the latter projects the composer's own emotions and vision of the world onto the work, claiming a predetermined meaning that needs to be *understood* (the 'right' poetical interpretation).

Perhaps we could conceive soundscape composition as a different kind of programme music, where the programme is not seen as a predetermination of *content*, but of *concern,* indicating what the work *is about* and not what it *imitates*[31]. The narrative is not proposed before the music, but revealed by it, as the environmental sounds are not "arbitrary as is the semiotic sign" (Truax, 1996, 52). "Environmental sound is decoded by the listener" and "its meaning is inescapably contextual" (ibid). The

[30] Truax for example, points to the French acousmatic school's critique of less abstract uses of sound objects, pejoratively called "anecdotal" or "programmatic" (Truax, 1996, 52).

[31] As per Schafer, see Chapter 2, section 7.

difference is significant because it regards the intention of the composer as an open framework, a suggestion of context, a participant among others, in the creation of meaning.

3.3. Programmed musics

Other important participants in the creation of meaning, or even in the conditioning of the work, are the external programmes established by actors other than the composer. They can be of many kinds, and their programmes have different implications in the outcome of the work.

One such case can be observed in what is usually called utility music or *Gebrauchsmusik*. Initially describing music that was composed for specific educational or social purposes, it came to generally mean all music that served any end that wasn't *music for its own sake*. Thus it includes music composed for dance or cinema, as well as music to be played at ceremonies, or by amateurs. Once more, it was a rise against autonomous music, this time through a focus on the *purpose* of music, its function, its relevance. The term Gebrauchsmusik was adopted in Germany in the early 1920s and soon became one half of a binarism, dependent of its conceptual antonym—autonomy (Hinton, 2015). Loosing ground to its opposer specially in the years after the Second World War, when "lack of absolute autonomy became synonymous with a lack of artistic value" (ibid), utility music was considered a minor, simpler art. Although it is not relevant to discuss here the terms of this hierarchical view, it is important to consider the relation music has to its programme in terms of dependency or autonomy.

As mentioned earlier, programme music opposed absolute music because of the latter's autonomy, in the sense that it *didn't refer to anything but itself*. Programme music claimed value in transcendence through its artistic *sources of inspiration*, but it nevertheless had no different *purpose* from the absolute music it opposed, as both were limited to a concert hall ideology. Gebrauchsmusik, on the other hand, was relevant for fulfilling different purposes, for being useful and directed towards its use. However, those same purposes are its Achilles' heel, for they betray an eventual subservience. Just as a hymn celebrates its subject of praise, a work commissioned by a government for a social festivity, for example, does not have the freedom to criticise its own patron. In a more intricate example, a musical work that serves a film or a dance piece, is usually subjugated to the pre-established narrative's own durations, managements of tension, form, etc., thus limiting the freedom of the composer. It has a purpose, though it might

not be the composer's. Again, we can recall Shannon Jackson when she asks "how or whether the art object becomes compromised by its heteronomous engagement" (2011) deepening the discussion of autonomy versus heteronomy. Moreover, and as we've seen in the chapter about site, we could invert the problem and question the autonomy of any work—is any work ever unrelated to the context of its own production?

We can identify other kinds of programmes that condition music, for example, that of the commission. Be that the ones made by an institution, a patron, a film director, or a performer, composers are usually presented with a certain programme that delimits their work, in a similar way the architects are. The 'client' asks for a *piece* with a certain *instrumentation*, *duration*, for a certain *fee*, and to be performed on a specific *date*. There can be more or less flexibility in the programme, but it establishes enough parameters that can be either constraints, or helpful points of departure. It is therefore important to question how these external programmes are responsible for perpetuating specific *types* and *codes* that reflect specific power structures. The same happens with many composition competitions that call for specific formats and durations, and ultimately with the music market that measures quality against sales. All of these clients or promoters impose programmes that can contribute to a reduction and convergence of the landscape of musical production to specific, *canonical* models, under which academies, record labels, and even governmental institutions *programme composition.* By making sure composers 'use, propagate, arrange, and occasionally develop that which has already been achieved by others' (paraphrasing Liszt), they delimit the composer's field of action to a controllable scope—a *repetition*.

> Today, repetitive distribution … has become a means of isolating, of preventing direct, localized, anecdotal, non repeatable communication, and of organizing the monologue of the great organizations (Attali, 1985, 122).

We can return to Tschumi once more and transpose his question into musical terms: 'How can musicians avoid seeing music as a faithful product of dominant society, viewing their craft, on the contrary, as a catalyst for change? (paraphrased, 1996, 7). From architecture we can contemplate alternative routes already delineated above. One is to acknowledge that freedom might not lie in the negation of the programme, but in the reinvention of the *type*—'I'll fulfil your program but not as you'd expect'. Another, is to subvert the programme altogether by "showing that [it] could challenge the very ideology it implied" (Tschumi, 1996, 199). For this, the composer needs to take a step

back: “One must then no longer look for the political role of music in what it conveys, in its melodies or discourses, but in its very existence” (Attali, 1985, 122). To look for the political role of music “in its very existence”, the composer needs to create a distance from its core, from its internal operations and concerns, and turn towards what links it to the world—its frame, its margins.

4. Programme as frame

We can thus expand the definition of programme, one common to both music and architecture, beyond the simple establishment of a problem to be solved.

To define programme as a framework, something that *frames* the work, is also to address other forces beyond the artist’s ones. Like on a painting, the frame, by enclosing the content of the canvas, also indicates what is *outside*. The frame is constructed in an interaction between external forces (social, political or economical), and the artist’s response to them (artistic intentions).

Thus, and because music’s programmes are more flexible than architectural ones[32], it is easier for the composer to manage and use that flexibility in his/her favour —perhaps by letting go of an univocal character of sound’s potentialities in responding to the programme (broadly paraphrasing Cannavò, 2006, 20, cited above).

The frame of a work can thus become an heuristic tool, that helps to inquire and understand the limits of control—be that of the client or patron, or of the composer—and the limits of the *subject* of the work—what it is about, what it reflects.

We can conceive the frame of music as the idea we have of what a work of music is, or what it is about—both before or after we read the programme notes; as being those very notes, the objects indicated; or the concert hall; the instrumental formation, the duration, and the title; all those things in relation. Lessons learnt from conceptual and performance art, the frame is always expandable, malleable, invertible, *reframable*. Perhaps never destroyed as without it “the picture’s form is undetectable”, and “the work leaks indiscernibly into the world” (Kim-Cohen, 2009, 243). The frame sets the limits of the work, that constitute the “‘strategic areas of [music]’[33], the base from which one can launch a critique of existing conditions” (Nesbitt, 1996, 150, referring to Tschumi). The

[32] mostly because of the “extreme dissimilarity” between music and buildings pointed by Ripley, see Introduction, section 1.

[33] ‘architecture’ in the original.

limits cease the condition of boundary, to become *margins*. Lessons learnt from poststructuralism and deconstructionism, "the contents of the margins (of texts or disciplines) are more important than their location indicates" (Nesbitt, 1996, 150). It is on the periphery that internal and external concerns meet, where the 'internal operations' expose external ones. The programme becomes a device to bring the attention *towards* the music and what it *is really about.*

The programme is not a *mould* for repetition (cf. Attali, 1985, 40), but one part of the conception of the work, where composers exercise their ability to *compose conditions* for musical situations to emerge, instead of conditioning performance to a pre-established goal. Programme and composition become indistinguishable in this perspective, part of the work, not the work itself, perhaps a *site* for the work. Music is thus allowed to present itself, its *situated* manifestation, instead of trying (and failing) to represent something else.

Composing is programming as framing, and the margins are the permeable site that provides the compositional material, converting context into content, *allowing the world to leak into the work.*

5. In practice - reprogramme

There are always limitations that condition the creation of any work. But a programme is not a limitation—it defines the limitations and the conditions of the work, through the establishment of concerns and intentions. In this research, it becomes a conceptual tool to explore the margins, collapsing internal and external concerns and expanding the field of composition.

Music for Sax and Boxes and *Inside Out* are a more traditional approach to programme: I was asked by specific performers to write for a specific instrument, with a specific duration and for a specific date, thus the initial conditions were set. To introduce my own programme, I questioned the use of the space and of the instrument, exploring the overlap between a musical performance and a sound installation, through the ideas explained earlier about material, site, and drawing. *Inside Out* nevertheless, engages a more open programme, as it is more focused on creating a situation where different events may occur.

The pieces developed with the *Unlikely Places* group present a different case. They were conceived from our own intentions of developing specific ideas, not from an

external programme[34]. In these pieces our programme problematised the limits of traditional formats. By opening the concert hall to the street, and merging urban form with a musical one, we aimed at subverting conventional listening types, etiquettes and habits.

Apartamento em Lisboa and *Travelogue #1*, could be equated with a kind of programme music as mentioned above—one that indicates a concern, and doesn't impose a narrative. They explore the ambiguity at the limits of musical and everyday architectural sounds. *Travelogue*, particularly questions the very fact that the listening experience (hence the construction of meaning) changes if the listeners know which spaces they are listening to. And thus the programme extends the work from being about the composer's personal perspective of certain spaces and places, to being about what sounds cannot convey, and how the listener's experience of those sounds changes by knowing where they come from.

A Pirâmide e o Labirinto could be seen as a confrontation between architectural and musical programmes. The actual programme of the museum space: so tidy and silent, was subverted by the intrusion of a loud performance. The programme of the performance was to generate a contradiction or a disjunction between the space's programme and its use. This will be discussed further in the next chapter.

5.1. Playing the programme

In *Play*, although there was no external programme to start working from, there are several different layers that can be analysed through this wider idea of programme. Through an apparently linear narrative (also suggested by the continuous progression of Lucier's *Vespers*), the listener is guided through a process of constant *transgression*, where limits become windows. An initial indicator reveals the process—the projection of an image of an abstract squash court soon becomes the projection of images of the *present* squash court, that is finally overlaid with itself, merging representation with presence. The same process happens with the squash and the brass instruments—the sounds of squash are replaced by the presence of real squash players—and the sounds of the brass instruments slowly transgress the condition of a *soundtrack* to compete as the main event when the real players play inside the courts. By transgressing the condition

[34] although we could argue that an imposition of duration from a conference call for works had some influence and therefore could be considered a kind of programmatic conditioning.

of a representation to that of presentation, *Play* stresses the present situation of the listener that shares the same space. That space is not a stage—in fact it is not just a squash court, or a sports building. It is a work of architecture, thought and lived. Thus, not only the architectural programme is being subverted—as a cinema room, as a concert hall—but the programme of the piece is indicating that very subversion.

The idea of the line is used here as a device to work through the process of deconstructing the rules of the game and, hence, the use of the space. The line as the marker of game areas, is a manifestation of the boundary—that which separates and delimits. Soon, it starts to emphasise a linearity, traversing and connecting the different layers of space—the stage, the back-stage, the exterior, even the past. The marker line of the court becomes a transgressive line. Borrowed from Krasiński, the line is the unfolding of the frame. It is the flattening of all levels of reality, that collapses art with the everyday, indicating that the work is always about something more.

5.2. Fourfold programme

In *Tłumaczenie*, the external programme is a paradigmatic one: the string quartet. As one of the most iconic formations in classical chamber music, it is generally considered a privileged medium for composers to develop more intimate ideas, but also as a particular social model of music making. Developing from the original conception of chamber music as "music to be performed for its own sake and the enjoyment of its players, in private residences (usually in rooms of limited size), perhaps in the presence of a few listeners, perhaps not" (Bashford, 2003, 3), it still maintains to strongly emphasise the idea of "music for friends, an intimate and tightly constructed dialogue among equals" (ibid, 4), where the performers spend much time working together without the intervention of a conductor as mediator of interpretation, as happens in larger ensembles or orchestras. Thus, the performers have a closer relation with the work, and tend to exercise a deeper reading and a more intense investment as creative interpreters.

But the string quartet also came to represent western classical music's elitist ideology reinforcing its claims for a higher culture, social autonomy, and supporting the idea of the composer-hero and the authentic text.

My approach to this programme was, thus, an investigation into how a traditional form could challenge its own limitations, and promote a different perspective

beyond the repetition of the old values, without changing its 'external' format—perhaps what could be seen as reconfiguring the traditional typology. To do this, I developed a dense programme that uses architecture as a pretext to expose and question different musical problems, while investing in the collaborative creativity of the quartet.

By defining a complex network of extra-musical references, the programme suggests different layers of concerns. First, the building, as a guide to explore a translation of architectural elements to musical ones, becomes a site of inquiry into the mode, and even the very possibility of that translation. The listening experience is contaminated by the speculation of how that process is being pursued. Some gestures might suggest a certain type of more or less direct formal or rhythmic translation, while texture provides a rich analogue, but the parallel is inevitable frustrated by the impossibility of a linear narrative that describes architecture *musically*. If the first part tests that narrative in the form of the traditional score, where the performers interpret the composer's formulation, the second passes the task of translation on to the performers. Through the graphic score, the decisions on how to translate forms and texture are given to the performer, distributing the creative input. The third part works on yet another level of meaning: the actual sound of the building that becomes the score, refocusing the translation exercise towards the aural, further transferring the creative input.

Moreover, the references to the three Polish artists, are used not only as methodological approaches that inform *how* the process is being carried out, but also as concrete historical references that suggest or indicate other layers of meaning (perhaps a *meta-programme*), namely: that there is a strong phenomenological approach to the work (Penderecki's *sonorism*); that there is also a conceptual proposition where the content is constantly re-situated (Krasinski's line); and that there is a reaffirmation about the impossibility of translation, for there is no simple or single interpretation to a message, or reading of a text (Lem's indecipherable letter). Furthermore, the coincidental date of these four references (1968), hints at a larger sphere of conceptual connections that rose from that particular hinge of history.

Chapter 5 - Use

1. Contemplation and experience

> Whether successful or not, the repeated attacks on the autonomy of art have had a two fold agenda, first, to diminish the authority of the artist and the art institution and, second, to transfer some of that authority to the viewer (Hill, 2005, 2).

This chapter can be understood as an extension of the previous one. Both programme and use relate to an idea of function that could be addressed by the question: what is the work for? But if programme is something that precedes the work, a framework created in advance that establishes what the work is about, use is something unpredictable that happens after the artist's plan, beyond the artist's agency. Use goes beyond the idea of function to embrace notions that flow towards more complex and transformative human needs. Beyond utility, use is an existential postulate that aims at the possibility of the free act.

To dwell on the notion of use, implies inquiring about a definition of user. In architectural discourse and practice, this definition has been changing and embracing different conceptions, some more flexible than others. The different notions of what constitutes the user have reflected back on the way architecture is produced, its definition and even on the architect's role. In any case, the user is central to a conception of architecture beyond the building, beyond its constructed materiality.

In music the problem is put in a different perspective, since the absence of a clear material existence seems to evade a distinction between work and use. If the work was to be separated from its use, what would be left? What constitutes the work before its use?

Architecture is used to provide protection, to dwell. More specifically, it is used to work, walk, sleep, to cook and to eat, to listen to and play music. But it is also used beyond its programmed function, an improbable place to meet, of urban rituals, a space to hide, to reinvent dwelling, to reinvent society. Musical works on the other hand, constantly resist fixed definitions because of their fluidity of use: as listening, as reading,

as dancing, as performing, or as ritual, as consumption, assertion of identity, social cohesion, political subversion, etc.

Use is the ultimate negation of autonomy, where the work always finds a purpose. Even the most useless work, or the idea of art for art's sake becomes something that affects, and is *appropriated* in unpredictable ways. Beyond the architect's or the composer's reach, use redefines the work a posteriori, reconfiguring any assumption we might have of its meaning or ontology.

2. Architectural use

Utility is a central part of the architectural project. If the programme specifies and organises predicted needs, it is through design that architects materialise how those needs are satisfied. As we've seen in the previous chapter, the programme can limit and constrain the way we occupy architecture in unfavourable ways; it is usually limited to specific functions and can never accommodate all human needs. There are too many ways of "occupying" architecture that escape the reach of programme or design. It is the user that will expose the different and unpredictable ways in which architecture can be occupied. "[T]he production of architecture relies on both concrete knowledge and latent imagination of how it is used. But utility also governs an unknowable universe of everyday experience that remains outside of the designer's direct control" (Cupers, 2013, 1). Thus, the use of architecture and, more generally, of space, cannot be reduced to predicted utilitarian considerations.

2.1. Redefining the user

A deeper understanding of the user reveals contradictions and conflicts generated in architectural design, that still sees it as "a stable, centralised and passive subject" (Hill, 1998, 24). The old functionalist approach to the notion of user is nowadays condemned for reducing it to idealised types—for example, the user as machine, dehumanised. Yet further attempts to personify the user ended up reflecting problematic social unbalances: the gendered user, stereotyped; white, middle class, segregated, etc. Not only are these types not representative of the variety of people that make up society, they reflect the factions that usually retain the economical and political power. Thus, the generalised user type is not only a social problem, it is a political one.

Furthermore, phenomenological perspectives have “approached use in as much as they replaced function with sensory experience, but did so by reducing it to a transhistorical intention of architecture” (Cupers, 2013, 3). Nevertheless, “the user is both a historical construct and an agent of change” (ibid, 2). The construction and simplification of a generalised user is a necessity of architects, policy makers and other actors to define their own professional role and protect their power. They exercise control over the user by attributing it “forms of behaviour acceptable to the architect” (Hill, 1998, 18). Thus, this definition of the user satisfies the needs of the people who decide, not the people who use. “[A]rchitectural discourse includes the user under controlled conditions. To consider the inhabitation of architecture, architects appropriate, from other disciplines, forms of experience more manageable and limited than the ones evident in the everyday occupation of architecture” (ibid, 22).

To overcome this problem, it is necessary to conceive the user and his/her needs in a broader, always transformative context, discarding deterministic notions of use, and expanding beyond a limited conception of architecture: “the user is neither a timeless humanist category nor a simple externality of design. It has a history of its own, both within and beyond architecture” (Cupers, 2013, 2).

If one possible approach is to replace the notion of the *use of space* with *lived space*, a far further reaching one is the idea of the *production* of space: “it is not a matter of ‘localizing in a pre-existing space a need or a function, but, on the contrary, of spatializing a social activity, tied to a practice as a whole, by producing an appropriated space’” (Lefebvre cited in Stanek, 2013, 146). Lefebvre’s notion of space as a social construct, had an impact on architectural and urbanist discourse and practice, by suggesting that “spatial practice is, precisely, *acted* and not read” (Hays, 1998, 175), and thus transferring some of the decision power to the people who produce the space by *living* it, and not by *designing* it. Architecture does not define *empty areas* where certain activities take place: not only does it affect how those activities take place, but it is also defined by those activities—“the inhabitant transforms the spaces in order to make them comply with his or her cultural model” (Stanek, 2013, 146). By acknowledging this, the architect’s task changes from answering to predefined needs, “to interpret possible practices”(ibid). The architect, as an *interpreter* of use, becomes but one of many actors in the production of architecture, for “a lot of architecture's meaning is made not on the drafting board but in the complex lifeworld of how it is inhabited, consumed, used, lived or neglected” (Cupers, 2013, 1).

2.2 Redefining Architecture

The idea of the production of space shares roots with Tschumi's idea that there is no architecture without *event*, for Tschumi was influenced by the Situationist's concept of *Les événements*. These "were not only events in action, but also in thought" (Tschumi, 1996, 255). By creating subversive situations where spaces were 'misused' (ibid, 6), or combined with unlikely events, "all hierarchical relationships between form and function cease to exist" (ibid, 255). This is the starting point for Tschumi's disjunction between buildings and their use, between spaces and events.

The notion of architecture as event opposes the conception of architecture as building, or object—as a commodification that turns the user into a consumer. It situates architecture in a distributed position that includes the building and the action that takes place it in, that *intrudes* it, that *happens* in it: "[A]rchitecture—its social relevance and form invention—cannot be dissociated from the events that 'happen' in it" (ibid, 139). Thus architecture *happens*, it becomes *temporal*, "it ceases to be a backdrop for actions, becoming the action itself" (ibid, 149). In this perspective, Tschumi sees the user as an agent, not an occupier—a body that moves, a person that acts, that makes things happen, and thus, that changes and produces spaces. "Bodies not only move in but generate spaces produced by and through their movements. Movements—of dance, sport, war—are the intrusion of events into architectural spaces. At the limits, these events become scenarios or programs, void of moral or functional implications, independent but inseparable from the spaces that enclose them" (ibid, 111). Thus,

> the static notions of form and function long favored by architectural discourse need to be replaced by attention to the actions that occur inside and around buildings—to the movement of bodies, to activities, to aspirations; in short, to the properly social and political dimension of architecture (Tschumi, 1994b, 13).

Tschumi goes on to expand the definition of event, drawing from Foucault and in dialogue with Derrida: event as a turning point, as action-in-space, as invention (cf. Tschumi, 1996, 257). Unlike the programme—"a set of instructions on how the space is going to be used" (Tschumi in Rebelo, 2003, 34)—the event is unpredictable, "an incident, an occurrence; a particular item in a program" (Tschumi, 1994a, XXI).

In another perspective, Jonathan Hill expands on a definition of architecture that is not quite event, but seems to further merge work and use: “a certain type of object and space *used.* Within the term ‘use’ I include the full range of ways in which buildings and cities are experienced, such as habit, distraction and appropriation” (Hill, 2003, 1). Although different from Tschumi’s conception, this definition of architecture also states “that architecture is not just a building, a form, a stable entity with fixed dimensions” (Hill, 1998, 34). But instead on dwelling on the notion of event, which could be characterised as an exceptional occurrence, or “a self-contained temporal structure” (Rebelo, 2003, 43), Hill expands the definition of architecture through more general terms as *use*, *action* and *occupation* to argue that “architecture is, primarily, a particular relationship between a subject and an object, in which the former occupies the latter” (Hill, 1998, 34). It is produced by both the architect and the user to become “the gap between building and using” (ibid, 26).

A similar gap is identified by Jeremy Till and Sarah Wigglesworth, as separating the idealised architecture from the everyday:

> There is something inexorable about quotidian actions which architecture is helpless to resist. Any discipline which denies the everyday will be denied everyday, and for this reason, high architecture is unravelled by the habitual and banal events which mark the passage of time. There is a thudding disappointment as a gap opens up between the image of architecture and the reality of its making and occupation (Wigglesworth, 1998, 7).

This relates to Tschumi’s Pyramid and Labyrinth, where the latter generates forces beyond the architects prediction and control. To descend into the labyrinth could mean “to recognise what high architecture has previously suppressed (but was never able to exclude) by seeing the world from within rather than from above” (Wigglesworth, 1998, 7). Acknowledging the reality of architecture’s occupation, the architect recognises “the political and the social content of architectural production” (ibid, 9). Thus, architecture fills the gap between building and user: “a process that enjoys the contingency of the everyday will make an architecture able to accommodate the everyday” (Till, 1999, 119).

Moreover, in Hill’s relation between a subject and the *occupied object*, the latter “is not necessarily a building, but can be a space, a text, artwork or any other phenomenon that displays, or refers to, the subject-object relationships particular to architecture” (Hill, 1998, 34). If this definition seems to blur the limits of architecture—

which is in fact part of the agenda of the authors cited in these chapter—it also "threatens the profession" as it "recognises that architecture is much more than just the work of architects" (ibid).

2.3. Redefining the architect

If one way architects have to protect their power is to control the user, by attributing them acceptable forms of behaviour (Hill, 1998, 18), another is to remove the user altogether from their discourse and forms of architectural representation:

> "The most blatant denial of the user occurs in the photographs, which empties a building of its inhabitants. The absence of people from the architectural photograph is the physical manifestation of a deep fear of the user within the architectural profession, a condition also evident in the architectural drawing (Hill, 1998, 20).

These are the representations of the architects' Pyramid, clean, empty, as imagined. They are fortresses with which architects try to prevent any intrusion from the user "into the body of their architecture". With this, "architects assume that architecture is a physical phenomenon with specific materials and dimensions, a building but not any building, *their* building *unoccupied*" (Hill, 2005, 3-4).

If the intrusions of the user destroy the ideal images of architecture, Hill considers yet another threat to the profession—that of the *illegal architect*: "producing architecture is different from being an architect. The architect is protected by law, but architecture is not, a situation which implies that a person can make architecture but not be an architect" (Hill, 1998, 32). This means that the definition, and therefore the production of architecture can be constrained by the notion of what the professional architect is. Acknowledging architecture beyond its professional production means diminishing the authority of the architect and acknowledging other actors such as the user as creative co-authors, perhaps even more creative: "An architecture that responds to the creative unpredictability of the user is more likely to be initiated by an illegal architect than a professional one, because the former feels no antagonism towards the user" (ibid, 34). The idea of co-authorship is significant: Drawing from Barthes' seminal text "The Death of the Author", Hill suggests that "the author-text-reader relations, as a whole, are analogous to architect-building-user relations" (Hill, 1998, 26). What Hill proposes then, is to conceive an architectural producer unrestrained by professionalism, one that

> questions and subverts the conventions, codes, and 'laws' of architecture, and, therefore, can even be a registered architect critical of the profession. Implicit within this is the belief that the legal architect can learn from the illegal architect, for whom architecture can be made of anything, anywhere, anyhow, by anyone (ibid, 36).

3. Musical use

The use of music is an evasive idea as it embraces many different forms, always in change. But the discussion about how music is used reveals, as in architecture, several questions that implicate directly on the composer's activity. Drawing a direct parallel from the first part of this chapter, I will dwell on the notions of user, music and composer, aiming at reconfiguring the practice of composition to encompass a wider field of action, acknowledging limits, but also potentialities.

3.1. The user of music

The user of music and the user of architecture are similar—variable, individual and irreducible. The motivations behind the generalisation of the user of music are many, but generally related to the commercialisation of music. Here too we can argue that by defining the user, musicians can more easily define their own work and protect their position in the production chain of music. Ideas of user types not only define ways of making music (concert hall, dance club, digital format file, etc.), they also define musical genres. In an intense interaction between market research and creative processes, musical creation is many times captured in a network of forces that compromise its ways of production, its experience, its own transformations and the transformations it instigates. This process was analysed from the particular perspective of music's political economy in Jacques Attali's *Noise*, where music is seen through different lenses throughout history. For Attali, as noted earlier, music today is embedded in a structure of *repetition*, where its ritual and performative values are annihilated and replaced by its exchange value. When music is commodified, the user becomes a consumer, many times dictating production. If on the one hand the consumer is the 'silenced spectator', on the other it could be empowered by demand—the consumer is the reason to produce the commodity. Thus, to maintain the power of production, the music producer—not anymore a composer or performer—needs to predict, control, *produce* the user's wishes: "The essential aspect of the new political economy that this kind of consumption

announces is the production of demand, not the production of supply" (Attali, 1985, 103).

Nevertheless, from the composer's point of view, the user is not only a consumer. The user is a listener, a reader who experiences and questions the work, who shows curiosity and disinterest. This includes not only the audience (to which I'll come back later), but also the performer, the person who will accept the composer's work as a programme to put in action.

The user as performer is many times excluded from the composer's discourse. Although a parallel with the architect's relation to the builder is flawed and incomplete, as the condition of the performer is very different to that of the builder, it is nevertheless useful to denote how composers can neglect performers. By concentrating on the *score as the work* for example, composers relegate performers to mere interpreters or readers, who produce minor, ephemeral instances (representations) of the work. Half as passive as the listeners, the performers of this kind of music have no option but to limit their contribution to an interpretation of the text[35]. However, from Barthes we learned that "the journey from author to text to reader is never direct or one-way" (Hill, 1998, 26), and that the text is "a multi-dimensional space in which a variety of writings, none of them original, blend and clash" (Barthes, 1977, 146). Thus the performer is also a creative reader that always constructs "a new text in the act of reading" (Hill, 1998, 26).

By acknowledging the performer as this kind of reader, always different and unknown, the composer can develop the score as a platform for engaging in a creative relation with the variable and unpredictable performer. As discussed earlier in the chapter about drawing, it is not just the *level* of openness of the score, but the *kind* of openness, the different ways the score can integrate and engage different possible actions instead of imposing a subjugated interpretation, a single reading—the composer's own. A closed or strict score implies a constrained user; with it the composer protects his/her position as author by claiming he/she holds the key to understand the work, and the reader may fall into the illusion that the text is *decipherable*, a discourse to be understood (cf. Solomos, 2013, VI, 3.4, 24), even if he or she is incapable of doing it.

[35] This situation is reinforced in the orchestra where the conductor assumes the interpretation, and the performer is more an *effectuator*, closer to the powerless labour position of the construction builder.

Finally, the user is the listener, the audience, who is not involved in the production of the programme or the sounds performed. Nevertheless, the user is only a consumer if the work is a commodity. The user is only silent if the musician cannot listen.

The listener is the ultimate reader, all but passive, who constantly re-contextualises the work, puts it in the world and gives it new meanings and directions. To acknowledge the listener is not necessarily to engage him/her in direct actual participation. There are many ways to *remove the stage*, perhaps the first one is to open the space for different readings to take place. To acknowledge the listener is to interpret the listening, to become another listener, a reader, and to let all readings transform the work.

> [T]o listen to music in the network of composition is to rewrite it: "to put music into operation, to draw it toward an unknown praxis," as Roland Barthes writes… The listener is the operator (Attali, 1985, 135).

To acknowledge the user of music, both listener and performer, is to succumb to the death of the author, and welcome the reader. It is to accept that the work is a shared phenomenon, manifest in the present tense of the reading, the performing, the listening.

3.2. Musical Work

The more the composer invests the score with prescriptive and strict intentions, the more it seems to be equated with the work itself. Much has been discussed in the philosophy of music about the musical work and different views continue to coexist as the concept is complex and evasive.

In the introduction we followed Taruskin's view of the historical process of reification of music as art. His view plays in favour of Lydia Goehr's notion of the work-concept (Goehr, 2007). The fact that we have come to look at music today in terms of works is, according to Goehr, due to "a clear case of conceptual imperialism", where "the view of the musical world the romantic aesthetic originally provided has continued, since 1800, to be the dominant view. This view is so entrenched in contemporary thought that its constitutive concepts are taken for granted" (Goehr, 2007, 245). One of such concepts is aesthetic autonomy: "Without the notion of aesthetic autonomy the modern concept of fine art is unthinkable; and for music to qualify as a fine art, it had to be reconceived not as an activity but as a body of works" (Taruskin in Goehr, 2007, vii).

For Goehr, the work-concept is a regulative concept, "one that controls action because it confers value and contributes to the definition of a practice" (ibid). Thus, today, we not only speak of music as works, but also make music as works: "the work-concept with its conceptually dependent ideals of complaint performance, accurate notation, and silent reception has been adopted by many interpreters and producers of music of all sorts" (Goehr, 2007, 253). It made music into a commodity, and in that process, it contributed to the disjunction between composing and performing, between the programme and its use:

> In order for music to become institutionalized as a commodity, for it to acquire an autonomous status and monetary value … it was necessary to establish a distinction between the value of the work and the value of its representation, the value of the program and that of its usage (Attali, 1985, 51).

Furthermore, "[d]evelopments in copyright laws and publication helped 'institutionalize' works as commodities separable from their performances. Developments in notation helped free composers from involvement in performance" (Goehr, 2007, 229). This relates to the unbalanced division of labour discussed in chapter 3, where the composer, like the architect, by emphasising the conceptual score, devalorises its effectuation, and protects his/ her status as an autonomous (emancipated) artist. Outside realtime, the composer can perfect the idealised work, one that excludes the user—the unoccupied *Pyramid*—to which no performance could do justice. Thus, performers, to protect their position, must aim their performance at the level of the perfection of the work, avoiding any variability, or impurity, excluding "error, hesitation, noise", and leading "people to forget that music was once background noise and a form of life, hesitation and stammering" (Attali, 1985, 106).

The work-concept favours the notion of the author, his/her authority, and the authenticity of the work. Hence the problem with deconstructing the work-concept: the composer depends on it. How, then, can composers overcome this conceptual imperialism without annihilating themselves? How can they produce music without succumbing to the 'constitutive concepts of romanticism'? How can they compose scores, without imposing a single reading on an inevitably open text, a hierarchical power structure on the production chain? And without reducing the work to a mere commodity, the use value of which gets lost in its endless repetition and frivolous consumption? In

order to try to propose solutions to these problems, let us first try to deconstruct the musical work and follow with a redefinition of the composer.

If the architectural work lies between the building and its use, can we not formulate the same equation for music? Can't the musical work hover in and around the triangle between its composition, its performance, and its listening, like a magnet—both repelled and attracted by each pole? If we consider composition as a form of programme, and performance as an activity that puts it into action—with related but independent results—then the music is not a work, but the *event* that happens in the moment of performance, in the intersection of different readings, the shaping of different creativities. It is ephemeral, and unrepeatable—it can never happen in the same way. It is not the performance itself, it is enabled by it and by the listening. Tschumi's notion of event is clarifying when he compares it to musical improvisation:

> It is as if you were to determine a set of conditions in music and the musician were to play according to these conditions, without you determining what is played. You would indicate directions and their own subjectivity would introduce clashes, collisions or extraordinary reciprocities. Part of what the architect does is not conditioning a design, in the sense of packaging the building, but rather designing conditions. Those conditions quite often lead to what I would call an event, something that is unpredictable (Tschumi in Rebelo, 2003, 34).

This is different from certain forms of improvisation, where, as discussed earlier, composer and performer merge in the same person. Here the event is improvised in the sense that the actions are not determined by the score. The performer, as a user, decides how to move and act in the situation, or more meaningful, in a *building* designed by the composer. Further developing Hanoch-Roe's metaphor discussed in the third chapter, the score can be thought of as a building, where the occupiers make their own decisions as to how to use the space—producing it. It is an extensive metaphor for it can assume that non-scored musics move in the natural free-field, or the neglected and uncharted interstices of urbanity.

Thus, we can conceive an event to be the *music itself*, not an instance of a work, but an in-between, an occupation, particular actions created from a specific reading of the score. Music as event is at the basis of Christopher Small's notion of *musicking*—music as verb, as taking part "in any capacity, in a musical performance, whether by performing, by listening, by rehearsing, or practicing, by providing material for

performance (what is called composition), or by dancing" (Small, 1998, 9). But musicking is not event, it is an activity that enables it. It is dependent on the context of its occurrence—not only its programme, but its external conditions—and involves "all [the] different activities [that] add up to a single event, whose nature is affected by the ways in which all of them are carried out" (ibid, 10).

Beyond the composer or performer, meaning is perceived in the experience of the event as a whole. Thus music cannot be commodified, as no single object can replace the event. Any reified instance is always incomplete—a score, a recording. They become something else with their own different value. A new performance of the same score or programme is a different music, something even unrecognisable.

The difficulty exposed here, also enunciated by Goehr, lies in separating the idea of the musical work from the composer's work, the same way it is difficult to separate the idea of architecture from building. Nevertheless, the exercise is fruitful, as it makes us understand *music* itself in different ways, beyond the work-concept. By accepting that the composer produces scores as programmes—not musical works, but independent materials or activities that establish a situation, a site or a building for music—music becomes something that *happens*, not something that *is*. The notion of musical work is perhaps useful for analysing the types of music it has itself produced, but maybe not so much to move beyond that, to create something new. "Complex, vague, recuperated, clumsy attempts to create new status for music—*not a new music, but a new way of making music*—are today radically upsetting everything music has been up to this point" (Attali, 1985, 134). The concept of musical work is not only being dispersed, it is being dissolved in a conceptual web, as a *useless* concept.

Music as event, as a 'particular relation' between the composer's work[36], the performer's actions, and the listener's experience, allows us to conceive new ways of creating music, by 'redirecting our attention to the properly social and political dimension of music'[37]. In that interaction between different actors, the musical event produces a social space, one that includes error, hesitation, noise and the stammering of everyday life, in a transformative and unfathomable Labyrinth of invention and use.

Finally, what this parallel with architecture seems to suggests, is that a definition of music as event, as 'much more than just the work of composers or

[36] and here I include both the programme, and the free improviser's realtime decisions.

[37] paraphrasing Tschumi (1994b, 13).

performers', does not differ from a definition of architecture itself, as the latter lies in the same Labyrinth of the real, between its use and the object occupied—'not necessarily a building, but a space, a text, an artwork'[38]—a composition.

3.3. Redefining the composer

If music is a relation, an interaction, the composer is but one of its actors, not even a determinant one for music to happen. In fact, the composer is, as we've seen, a constructed category whose foundations start disintegrating as soon as we question its origin, so dependent it is on problematic if transient developments of musical practice. Nevertheless, I believe the composer has a place in the emergence of new musical practices. I am not (only) protecting my own threatened professional status, but expanding it, questioning, from within, its traditional concerns, its *ideological relations*, and exploring how it can avoid creating music as a 'faithful product of dominant society'.

If one important step, hopefully already taken above, is to conceive a more flexible and inclusive definition of music, it is also important to "avoid imposing conventional categories such as 'composer', 'interpreter', 'improviser', 'organizer', or even 'listener' in ways that often hinder how we perform, experience and ultimately understand music" (Borgo, 2007, 93). As shown above, the composer is also a listener, an interpreter, and an improviser as any decision is always taken in real time. In a changing landscape of music creation and *use*, these categories need to allow room for new ones, expanding the very idea of *musicking* towards the unexplored, for example "the uncertainties of systems that are too complex for human control" (Borgo, 2007, 93)[39].

Composers, unlike architects, are not protected by legal institutions that also control their actions[40]. But are they not also 'restrained by professionalism'? Many composers, emancipated from the performer, create musical works based on strict scores in the hope of being recognised as a validated authors, artists whose oeuvre is clearly identified, and marketed. This is the *legal* composer. Paraphrasing Hill, in *compositional* practice and discourse, the experience of *music* is the experience of the *composer*, who lays claim to both the production and the reception of *music* (Hill, 1998,

[38] as per Hill (1998, 34) see above, section 1.

[39] David Borgo exposes an interesting account of an expanded theory of musicking.

[40] Although the societies created to protect them as authors, dependent on royalties as they are, end up taking that role.

16). Nevertheless, “The ideological relations of a discipline are rarely criticized from within. Cultural practices police their boundaries by suppressing internal discussion that undermine their integrity or question their role, status and function in society” (ibid, 18). That could be the role of the *illegal composer*, one that questions and subverts the conventions, codes, and ‘laws’ of composition, even threatening his/her own status, in the hope that his/her practice and the understanding of its effect, “can accelerate processes of change under way” (as per Tschumi, 1996, 15).

Composition, as a practice is not emancipated but relational. Working beyond symbolic notation, through a wide variety of different activities, its ultimate material is use, unpredictable and transformative. Acknowledging use changes composition from being about ‘conditioning design’ to ‘designing conditions’, allowing the emergence of unpredictable relations and events.

4. In practice - using music as architecture

The different pieces in this portfolio show different possibilities of articulating use. If some are closer to traditional approaches still subject to the work-concept, others are more dispersed and multifaceted, allowing different configurations between the different types of users. Nevertheless, it is important to mention that in almost all I participated as a performer (the exceptions being the string quartet and the fixed media pieces, although even that is arguable). This allowed me to work in a closer dialogue with the performers, who ended up contributing to the composition.

4.1. Inside Out

In *Inside Out*, there is a strong separation between what the composer defined and what the event is, each time it is performed. As an improvisatorial device, the tubes installation and the graphic score can be used in a variety of ways that avoid the crystallisation of a work into some verifiable *message* against a ‘model’ (or repeatable through a *mould*). The focus is on how the performer takes action in that specific situation or site, inventing always something new. The variability of the use is in fact such that the actual programme is reduced to a minimum and it becomes difficult to assess what is inside or outside the work, so porous it is. For example, if the composer is not present, someone will have to produce the site-specific scores, distributing the authorship further.

4.2. Playing architecture

In the chapter about drawing, I mentioned how the scores in *Play* worked as game strategies, allowing the performers to engage in improvisatory processes that affected how they listened and reacted to each other. But by involving the space of the courts, the game is taken to a higher level. The same happens with the squash players who, by changing the spatial relations of the game (playing in different rooms, against the *wrong* wall), reconfigure the use of the space in ways that implicate on the construction of meaning—by playing *by ear*, trying to meet each other's rhythm, they are engaging in a collaboration instead of a competition, much like the musicians are. In this work, the use of space becomes a main compositional tool that also involves the audience. The space was reconfigured by the manipulating of actions and of how those actions happened in it. Through the use, these events become more than a musical performance, they become architecture because they are implicated in its body, its sound, its use, its proper constitution as a particular relation between its building (a composition) and its users.

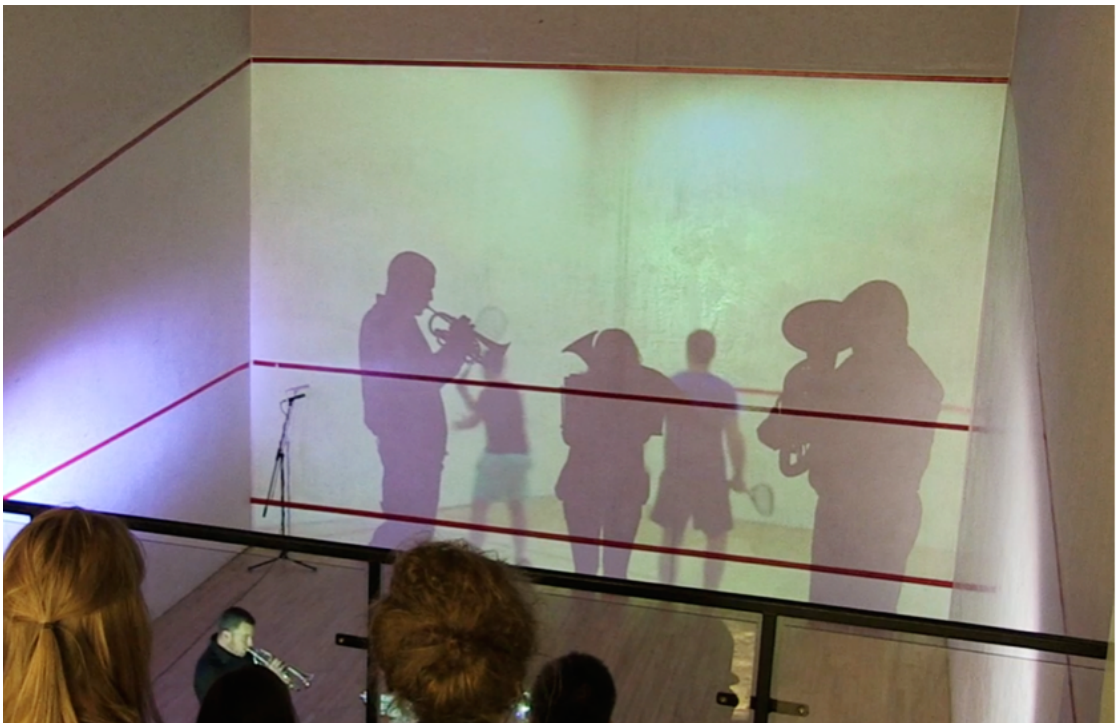

Fig. 18 - Scene from the last section in *Play*, showing the brass ensemble's shadows overlaid to the live feed projection of the squash players, playing in another court.

4.3. A Pirâmide e o Labirinto

Our prime consideration for this project was *use*, the ways people were using the spaces and creating an intense sense of place. Our interventions in the CCSP worked around ideas such as: changing the sound of the spaces by imposing soundscapes from different places, evoking a different use (the foyer as a metro station, as a swimming pool, as a market place); inviting people to speak to a microphone and listen to their voices as they are transformed and diffused in the large foyer hall; amplifying the music of the buskers, or that coming from the small sound systems of the street dancers, empowering their actions in the space, etc. Thus, the many different ways in which people were using the space pushed the object of our work towards the act of engaging with them. The users were our audience and our collaborators simultaneously.

In the MAC, our purpose was to contaminate the sterile architecture with the *stammering and hesitation,* the *impurity* and the *noise* of informal use. We did this by bringing people into the space, not only as visitors or audience, but also as users—to bring the main qualities of the CCSP—its life—to the MAC. This was done by creating an event, where several musicians were invited to play in a dialogue with material prepared from the previous work. In between each performance, two hidden speakers played recordings of the CCSP on a busy time of day, superimposing the sounds of the life of that space to the lifeless, present one. By radically changing the use of the site—from a quiet museum to a very loud music venue, and superimposing sounds from other, contrasting places, this event generated a focus on, and discussion about, the qualities of these spaces: how they are defined by, but also regulate so vigorously, their use; how they reflect and project the social tensions created through their exercise of power. For a few moments, that building embodied a different atmosphere, a different architecture.

Fig. 19 - The unusual occupation of the MAC, during the presentation of *A Pirâmide e o Labirinto.*

Conclusion

> [T]he Labyrinth is basically the space where oppositions disintegrate and grow complicated … [it] is not an object, not a referent. It does not have a transcendence that would permit one to explore it (Hollier, 1992, 58).

There are many examples in the history of architecture that show different attempts to integrate musical ideas in the design of buildings. The main stream since the ancient greeks was related to the shared use of numerical relations. Harmonic proportions were thought to embody universal beauty, an idea reinforced in the Renaissance by Leon Battista Alberti who claimed that musical harmony and architectural proportion are subject to the same natural laws, introducing the theory of musical analogy (Mota, 2010, 37). This idea remained strong among architects and theorists until the eighteenth century, when scientific developments and aesthetic relativism shifted the focus towards the effect on the beholder and individual emotion. However, twentieth century's modernism came to show that the belief in musical analogy and in the efficacy of the commensurable proportions still survived (ibid, 50). This is most evident in the frequent use of the golden ratio, for example, which, in the case of Le Corbusier, embodied a natural order.

But the twentieth century was also the century of new conceptions of space. From Einstein's interdependency between time and space, to Lefebvre's social production of space, architecture underwent a major transformation, shifting its core from form to space. With this shift, the tension between the belief on the efficacy of formal proportions, and the new ideas about space was manifested in the conflict between the organisation of form and an organisation of lived space, a disjunction between a natural order of form, and a social order of space. This is the background for Tschumi's architectural paradox, where architectural ideas materialise in ways beyond the designer's conception, and where space affords always more than can be envisaged.

New conceptions of space have also affected notions of music and made clear that music and architecture share more than a notion of beauty through proportion, or mathematical operations. New musical practices such as

> musique concrète and sound installations have enforced a revision of music theory and, more generally, have led to changes in the basic concepts of aesthetics. These changes … concern the expansion of the

> sound material, the concept of music as a spatial art, the primacy of hearing (Böhme, 2012, 10).

By focusing on sound as material, the sound-space relation is brought to the fore, revealing the space where our bodies move and listen.

Music as a spatial art, is closer to a contemporary view of architecture and, under this perspective, both start to share further spaces of concerns. Space is not Euclidian anymore, it is not empty or static, it is multidimensional, transformative, social. A conception of musical space as pitch space, is equivalent to a reduction of architecture to its Cartesian representations. These are the basis for the creation of the autonomous object that can fall subject to the external structures by neglecting the space of its materialisation, reception, conception and production.

This thesis explores those spaces, in perhaps a 'clumsy attempt to create new status for music—*not a new music, but a new way of making music*'[41], using an expanded notion of architectural analogy as methodology. Despite the differences in their contemporary practices, there are many common aspects between music and architecture that are worth considering and confronting. Thus, this research aims at generating a discussion about how architectural ideas and praxis can contribute to an expansion of the composer's concerns. The adopted strategy was to look at music through five different architectural lenses.

The expansion of musical material shifted the emphasis of music from tone as concept, towards sound as physical phenomena. This is the starting point of a consideration of the materiality implicated in the production of sound, where both instruments and buildings—their material constitution, form and position in space—are equally responsible for what we hear. Architectural materials become musical ones as they are implicated in the listening experience, hence, in the mediation of meaning.

But it is not only the material presence of architecture that is implicated in sound. Its *situation*, context, or position in the world establishes relations that affects the way we listen. From the small concert room or building to the large scale of the neighbourhood, city or country, the sites of music creation and reception affect and are affected by the atmospheres of places, their identities, and their social and political energies. Musical sites are also architectural sites, always related to their present environment, and their everyday contingencies.

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[41] paraphrasing Attali (1985, 134).

If the composer is not a performer and does not participate in the moment of the musical event, what is his/her role? Can he/she *project* the exact sonic phenomena that will engage the listener? The architect doesn't build, just as he/she doesn't determine the experience of the user. The art of planning, or projecting, is different than that of performing, and is centred on the act of writing/ drawing. The score embodies many different dialogues of which a very relevant one is the relation between composer and performer. Thus by reformulating the score—not as an instrument of power, but as a form of dialogue—the composer can manage, question or reinvent different forms of relation aiming at constantly renovating musical practice. The score is the materialisation of part of a programme that frames what the event *concerns*.

The architect and the composer plan, they programme. The programme can be an exercise of control, or of designing conditions for events to emerge, while not assuming 'that the excellence of the way things work is the composer's responsibility[42]. That responsibility is shared by who performs it, who supports it and who listens. The users as the ultimate authors, regard the works when they happen, transforming and producing space. Use is the final (de)construction of the work, where presence generates an unresolved synthesis between contemplation and experience, intension and affect, idea and matter.

This interference of architectural thought as strategy, or methodology reveals a multiplicity of relationships between music and architecture, and suggests an expanded practice of musical creation that explores the emergence of sound as the emergence of multiple spaces, of different conceptions of space. Moreover, an expanded notion of material leads us to embrace the other concepts that compose this research as materials themselves. Site, drawing, programme and use, can all be 'things the composer works with'.

The works presented in this thesis constitute experiments that tested and explored how these dimensions and, more generally, architecture itself, can be a useful guide for, or a component of, composition. On the other hand, they all engage with a post-formalist, constellatory and labyrinthian conceptualisation of musical space as discussed in the introduction. In the end, they constitute examples of intersections,

[42] paraphrasing Graça Dias (2006, 56).

where, if only for short instants, the emergence of sound can concentrate the space where music and architecture meet, or merge.

As an architect, I can be a kind of intruder in the field of composition, and try to question my own practice from a different perspective, a critic from within and outside simultaneously. But more than that, architecture is an exceptional vantage point from which to reframe composition, as it shares so many aspects with it. If a composition can be a building and music can be architecture, then the composer is an architect: not an organiser of form, but an planner of situations, an instigator of events, designing and orchestrating conditions towards a relational creativity that is not a reflection of society, but a project of sociality.

> We are all condemned to silence—unless we create our own relation with the world and try to tie other people into the meaning we thus create. That is what composing is.… Inventing the message at the same time as the language.… it relates to the emergence of the free act, self-transcendence, pleasure in being instead of having (Attali, 1985, 134).

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